



**bangchak**

**GREENOVATE**  
*To* **REGENERATE**  
สมดุลธรรมชาติ สรรค์พลังไม่สิ้นสุด

**Integrated Sustainability Report 2023**

Bangchak Corporation Public Company Limited


**Bangchak Corporation Public Company Limited**  
Oil & Gas Refinery and Marketing

# Top 5%

S&P Global Corporate Sustainability  
Assessment (CSA) Score 2023

S&P Global CSA Score 2023: 81/100  
Score date: February 7, 2024  
The S&P Global Corporate Sustainability Assessment (CSA) Score is the S&P  
Global ESG Score without the inclusion of any modelling approaches.  
Position and scores are industry specific and reflect exclusion screening criteria.  
Learn more at <https://www.spglobal.com/esg/csa/yearbook/methodology/>

**S&P Global**

 **Sustainable1**



"In July 2023, Bangchak Corp. Public Co. Ltd. received an ESG Risk Rating of **28.8** and was assessed by Morningstar Sustainalytics to be at **Medium Risk** of experiencing material financial impacts from ESG factors.

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# MSCI ESG RATINGS



CCC	B	BB	BBB	A	<b>AA</b>	AAA
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# SET **AAA**

**ESG Ratings 2023**

## Vision



สร้างสรรค์โลกซึ่งยืนด้วยนวัตกรรมสีเขียว  
**Crafting a Sustainable World**  
with Evolving Greenovation

## Mission

We commit to **accelerate sustainable energy transition, while balancing energy security.**  
**We are energizing lives through** Greenovative solution and promoting ESG for all.

## Core Values



### Business Culture

Sustainable Innovative Business  
Development in Harmony with  
the Environment and Society

### Employee Culture

To be virtuous, knowledgeable,  
and contributive to others

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## Environmental Dimension

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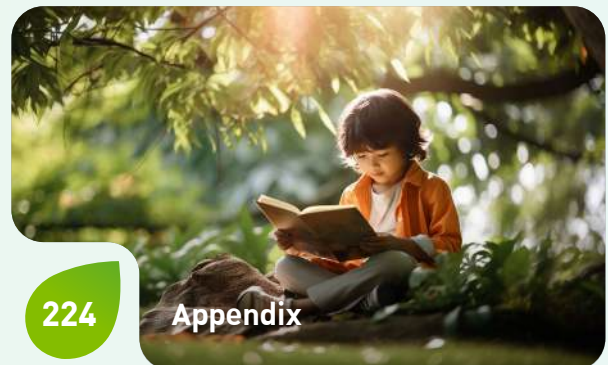


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## Social Dimension

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# Message from Group Chief Executive Officer and President



Climate change remains a global priority in 2023. COP 28 focused on key issues such as energy efficiency, transitioning from fossil fuels to green energy, methane reduction agreements, and accelerating investment in new technologies to replace fossil fuels. These are clear signals that the world is prioritizing the transition to clean energy.

Bangchak Group is committed to sustainable growth that balances value and benefits for all stakeholders, encompassing ESG principles. We are committed to addressing climate change by driving the green economy towards a low-carbon society through our **BCP316NET** plan. This plan aims for the organization to achieve “**Carbon Neutrality**” by 2030 and “**Net Zero**” emissions by 2050.

The Company has developed a roadmap to achieve our goals by establishing a working group to develop guidelines for improving energy and resource efficiency, and to consider investment plans in low-carbon businesses and green innovations.

“Developing work processes, increasing productivity, improving efficiency and reducing costs, as well as developing human resources, innovative products, and prioritizing safety and sustainable business development while caring for the environment and society” is the driving force behind our success. In 2022, Bangchak Phra Khanong Refinery was the only organization in Thailand to receive the Thailand Quality Award (TQA). In 2023, it became the first and only refinery in the world to receive the Global Performance Excellence Award achieving the eminent World Class level from the Asia Pacific Quality Organization (APQO) for its international-level management practices.

In 2023, Bangchak Group is **gearing the production of Sustainable Aviation Fuel (SAF)** to meet the needs of airlines that prioritize reducing greenhouse gas emissions from air travel and transportation through the construction agreement of the sustainable aviation fuel production unit, the first of its kind in Thailand, with a production capacity of 1 million liters per day. This will help reduce greenhouse gas emissions by approximately 80,000 tons of carbon dioxide equivalent per year.

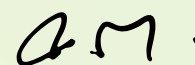
We have also developed a plan to procure raw materials by launching the **“Fry to Fly”** project to collect used cooking oil via Bangchak petrol stations and collaborate with major food business partners such as the **“Five Star Chicken”** and **“S&P”** brands to manage used cooking oil from kitchen operations for SAF production. This will help reduce carbon dioxide emissions and contribute to environmental protection and consumer health.

In addition, the Company has also expanded its framework for addressing climate change solutions through Oam Suk Social Enterprise Company Limited by supporting environmentally conscious farmers by purchasing **“Low-Emission Rice”** from the large-scale modern agricultural community enterprise in Doem Bang Sub-district, Doem Bang Nang Buat District, Suphan Buri Province. Farmers in this community have received knowledge transfer on rice cultivation methods that reduce flooding through the **“wet-dry alternating rice cultivation”** practice under the Thai Rice NAMA project. The rice is then used as premium gifts for customers at Bangchak service stations. The Company also further supports a network of community oil station businesses by installing rooftop solar systems for cost savings and encourage them to register carbon credits obtained from the solar installations in the T-VER program under the **“Cooperative Network to Combat Global Warming”** project.

As a leader in energy transition, the Company places importance on balancing business operations with a foundation based on equilibrium amongst the three challenges of the Energy Trilemma: Energy Security, Energy Affordability, and Environmental Sustainability. The Company’s acquisition of Esso (Thailand) Public Company Limited is a sound investment for the country as it will provide strategic energy assets. This enhances energy security for the **nation**, provides **consumers** with more affordable and accessible energy, and ultimately benefits the **business**. Our refining capacity will increase, and production efficiency will improve in an economically viable way. Additionally, we can extend our sustainability practices to our partners throughout the broader supply chain.

Furthermore, the Company remains committed to continuous development by participating in sustainability assessments with international agencies to ensure our sustainability initiatives comprehensively meet the expectations of all stakeholders.

On behalf of Bangchak Group, I would like to thank our shareholders and all stakeholders for the continuous trust, confidence, and support. As we enter our **fifth decade**, we remain steadfast in our pursuit of sustainable growth under our vision of **“Crafting a Sustainable World with Evolving Greenovation.”** We aim to benefit all stakeholders, to be a century-old organization serving as a pillar of energy for the country, and to create a balance between energy security, energy accessibility, and sustainability for Thai society. This will ensure a sustainable future for generations to come in line with our **“Regenerative Happiness”** goal of delivering boundless happiness.



**(Mr. Chaiwat Kovavisarach)**  
Group Chief Executive Officer and President  
Bangchak Corporation Public Company Limited



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# About This Report

## Source

Bangchak Corporation Public Company Limited has prepared an integrated sustainability report to disclose its sustainability performance for the 18<sup>th</sup> consecutive year, covering the reporting period from January 1<sup>st</sup> to December 31<sup>st</sup>, 2023 (Disclosure 2-3). The Company follows the GRI Sustainability Reporting Standards (GRI Standards), including GRI1 (Foundation 2021), GRI2 (General disclosures 2021), GRI3 (Material topics 2021), and GRI11 (Oil and Gas sector 2021), as well as the highest level of the United Nations Global Compact (Advance Level) criteria. Additionally, the Company has integrated the Sustainable Development Goals (SDGs) into its organizational strategy and operations to demonstrate its commitment to addressing sustainable development goals. This integration aims to focus and respond to the demands and expectations of various stakeholders. In the process of compiling the Sustainable Development Integrated Report for the year 2023, there have been no alterations to any data or methodologies, such as variables or calculation methods, that would necessitate amendments to the previous edition of the Integrated Sustainable Development Report for the year 2022.

## Scope of the Report (Disclosure 2-2, 3-1, 3-3)

This report provides an overview of the performance data for the year 2023 of Bangchak Corporation Public Company Limited, a publicly listed company operating in Thailand and Singapore. It focuses on 2 primary areas (Disclosure 3-2):

- 1 The scope of the refinery and oil trading business includes:
  - Bangchak Refinery and Oil Depot at Sukhumvit 64, Oil Depot at Bang Pa Inn, and Oil Depot at Surat Thani
  - Main office building (M Tower)
  - Central Region Business Center, the Northeastern Region Business Center, the Northern Region Business Center, and the Southern Region Business Center

- Bangkok Fuel Pipeline and Logistics Company Limited (BFPL)
- BCP Trading Pte. Ltd

- 2 The scope of marketing business includes:
  - Bangchak Green Net Company Limited (BGN) operates in the oil service station business
  - Bangchak Retail Company Limited (BCR) operates in the coffee shop business

The reporting covers 67.7% of the total revenue of the Company group, with operational statistics provided for each scope as referenced in the table.

The report presents information on energy usage and greenhouse gas emissions related to the organization's operations within Scope 1, Scope 2, and Scope 3. It includes reporting on greenhouse gas reduction efforts from Bangchak Refinery and Oil Depot at Sukhumvit 64, as well as M Tower, which are significant operational areas (Disclosure 3-2). Regarding water-related data (Water withdrawal, water discharge, and water consumption), it covers operational outcomes from Bangchak Refinery and Oil Depot at Sukhumvit 64, M Tower, BCP Trading Pte. Ltd., Bangchak Green Net Company Limited (BGN), and Bangchak Retail Company Limited (BCR) (Disclosure 3-2). For air pollution management data, oil, and chemical spill incidents from Bangchak Refinery and Oil Depot at Sukhumvit 64 are reported. Waste management data reports operational outcomes from Bangchak Refinery and Oil Depot at Sukhumvit 64 and main office building (M Tower), which are significant operational areas (Disclosure 2-6).

Regarding screening new suppliers and evaluating the social and environmental impacts of suppliers within the supply chain, the Company, Bangchak Corporation Public Company Limited, reports operational outcomes for the year 2023. There have been no organizational changes or significant concerns within the supply chain (Disclosure 2-6).

In terms of safety and occupational health, the Company reports safety and occupational health data covering the areas of office spaces and the Bangchak Refinery and Oil Depot at Sukhumvit 64, as well as data from the main office (M Tower) area only.

Regarding human rights, the Company reports the proportion of female to male employee compensation for Bangchak Corporation Public Company Limited employees (Disclosure 405-2).

## Assurance of Reporting

This report has undergone a comprehensive review of its key contents by senior management of each business unit and department (Disclosure 2-14), ensuring confidence in the completeness, accuracy, and coverage of the reported information, responsive to all stakeholders. Furthermore, the Company has arranged for third-party certification and performance measurement of key operational indicators by external experts specialized in certifying and providing independent assurance regarding business practices related to the oil and natural gas industry. This is to enhance credibility, transparency, and alignment with the reporting guidelines of the GRI Standards. In 2023, the Company underwent an audit of energy consumption data, greenhouse gas emissions data within Scope 1 and Scope 2 boundaries,

as well as data on greenhouse gas emission intensity, in accordance with GRI indicators 302-1(2016), GRI 305-1(2016), GRI 305-2(2016), and GRI 305-4(2016), achieving a reasonable level of assurance. Additionally, the Company obtained a reasonable level of assurance for greenhouse gas emissions data within Scope 3 boundaries, greenhouse gas reduction, air emissions, combustion and hydrocarbon releases, water withdrawal, water discharge, water consumption, waste generation, waste recycling, waste disposal, leaks, accidents, and occupational diseases. The proportion of employee compensation (female: male), screening of new suppliers, and assessment of social and environmental impacts of suppliers, as per indicators GRI 305-3(2016), GRI 305-5(2016), GRI 305-7(2016), OG6, OGSS, GRI 303-3(2018), GRI 303-4(2018), GRI 303-5(2018), GRI 306-3(2020), GRI 306-4(2020), GRI 306-5(2020), GRI 306-3(2016), GRI 403-9(2018), GRI 403-10(2018), GRI 405-2(2016), GRI 308-1(2016), GRI 308-2(2016), GRI 414-1(2016), and GRI 414-2(2016), while maintaining a limited level of assurance, [as detailed in the assurance statement on page 282](#) (Disclosure 3-2).

### Inquiries (Disclosure 2-3):

Should there be any questions or additional suggestions, please contact



**Sustainability Development and Standards Department at  
Bangchak Corporation Public Company Limited**



**Email: [STD@bangchak.co.th](mailto:STD@bangchak.co.th)**



**Tel: 0 2335 4101**



## Companies in the Reporting Scope (Disclosure 2-2, 3-1)

No.	Company	% equity	Production	Energy	GHG Emissions	GHG Reduction	Water use	Waste water	Air Emissions	Waste	OHS	SCM
Bangchak Corporation Plc.		100	/	/	/	/	/	/	/	/	/	/
<b>Subsidiaries</b>												
<b>A</b>	<b>Refinery, Trading Business and Marketing Business</b>											
A1	Refinery Optimization and Synergy Enterprise Co., Ltd.	50										
A2	Bangchak Sriracha Public Company Limited	76.34	Refer to QR Code for further details									
<b>B</b>	<b>Refinery and Trading Business</b>											
B1	BCP Trading Pte. Ltd.	100		/	/		/	/				
B2	Bangkok Fuel Pipeline and Logistics Co., Ltd.	100		/	/							
B3	General Energy Manning Co., Ltd.	49										
B4	Fuel Pipeline Transportation Co., Ltd.	4.78	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
B5	BSGF Co., Ltd.	79.99										
<b>C</b>	<b>Marketing Business</b>											
C1	Bangchak Retail Co., Ltd.	100		/	/		/	/				
C2	Bangchak Green Net Co., Ltd.	49		/	/		/	/				
C3	Bangkok Aviation Fuel Services Plc.	2.35	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>D</b>	<b>Green-Power Business</b>											
D1	BCPG Plc.	57.19	Refer to QR Code for further details									
<b>E</b>	<b>Bio-Based Product Business</b>											
E1	BBGI Plc.	44.99	Refer to QR Code for further details									
<b>F</b>	<b>Natural Resource Business and Business Development</b>											
F1	BCPR Co., Ltd.	100										
F2	• BCPR Pte. Ltd.	100										
F3	- OKEA ASA	45.46	Refer to QR Code for further details									
F4	BCP Innovation Pte. Ltd.	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
F5	BCV Energy Co., Ltd.	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
F6	BCV Innovation Co., Ltd.	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
F7	• WINNONIE Co., Ltd.	55.49										
F8	BTSG Co., Ltd.	51	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
<b>G</b>	<b>Other Business</b>											
G1	Bangchak Treasury Center Co., Ltd.	100										

### Remarks:

#### 1. Color Definition

- The Company that disclosed its sustainability performance data in the integrated sustainability report for the year 2023 according to the GRI Standards, is a company that Bangchak Corporation Public Company Limited, holds a 42% shareholding, operates in Thailand and has significant environmental and safety data. (Disclosure 3-3)

#### 2. Other Definition

- Non-Relevance (NR) indicates that the data provided is not significant for business operations and does not impact the overall image of Bangchak Corporation Public Company Limited.
- / The data is disclosed in this sustainability report.
- A1: Refinery Optimization and Synergy Enterprise Co., Ltd. : was established on October 3, 2023
- A2: Bangchak Sriracha Public Company Limited, previously Esso (Thailand) Public Company Limited, was acquired shares by Bangchak Corporation Public Company Limited and registered a name change on November 15, 2023.
- G1: Bangchak Treasury Center Co., Ltd. : was established on September 11, 2023

For details regarding the sustainability operating results for the year 2023 of companies within the Bangchak group, please refer to information as follows:



BCPG



OKEA ASA



BBGI



BSRC



# Bangchak Overview

**Company name** (Disclosure 2-1)  
Bangchak Corporation Public Company Limited

**Stock Market Name:** BCP  
Bangchak Corporation Public Company Limited is in the petroleum and renewable energy business. The five core businesses include refinery and oil trading business, marketing business, bio-based products business, clean power business, natural resources business and business development. The Company invests in the core businesses domestically and internationally with the aim to create energy stability for the nation, to drive business with innovation, and to ensure business continuity and sustainability for both the organization and Thai society. (Disclosure 2-6)

**Date of establishment :** 8 November 1984

**Headquarters** (Disclosure 2-1) :  
No. 2098 M Tower, 8<sup>th</sup> Floor, Sukhumvit Road,  
Phra Khanong Tai, Phra Khanong, Bangkok 10260, Thailand

**Chief Executive Officer:** Mr. Chaiwat Kovavisarach  
Group Chief Executive Officer and President

**Paid-Up registered capital:** THB 1,376,923,157

**Number of permanent employees** (Disclosure 2-7) :  
1,184 employees (as of December 31, 2023)

**Business type:** Oil & Gas Refining & Marketing

**Membership of association** (Disclosure 2-28) :



**Refinery and Oil Trading Business Group**

Capacity of **294,000** barrels per day

**Marketing Business Group**

Services stations **2,219** stations

**Clean Power Business Group**

Total installed capacity of **2,025.2** megawatts

**Bio Based Products Business Group**

Production capacity of **1,800,000** liters per day

**Natural Resource Business and Business Development Group**

Production capacity equivalent to **24,590** barrels of crude oil per day



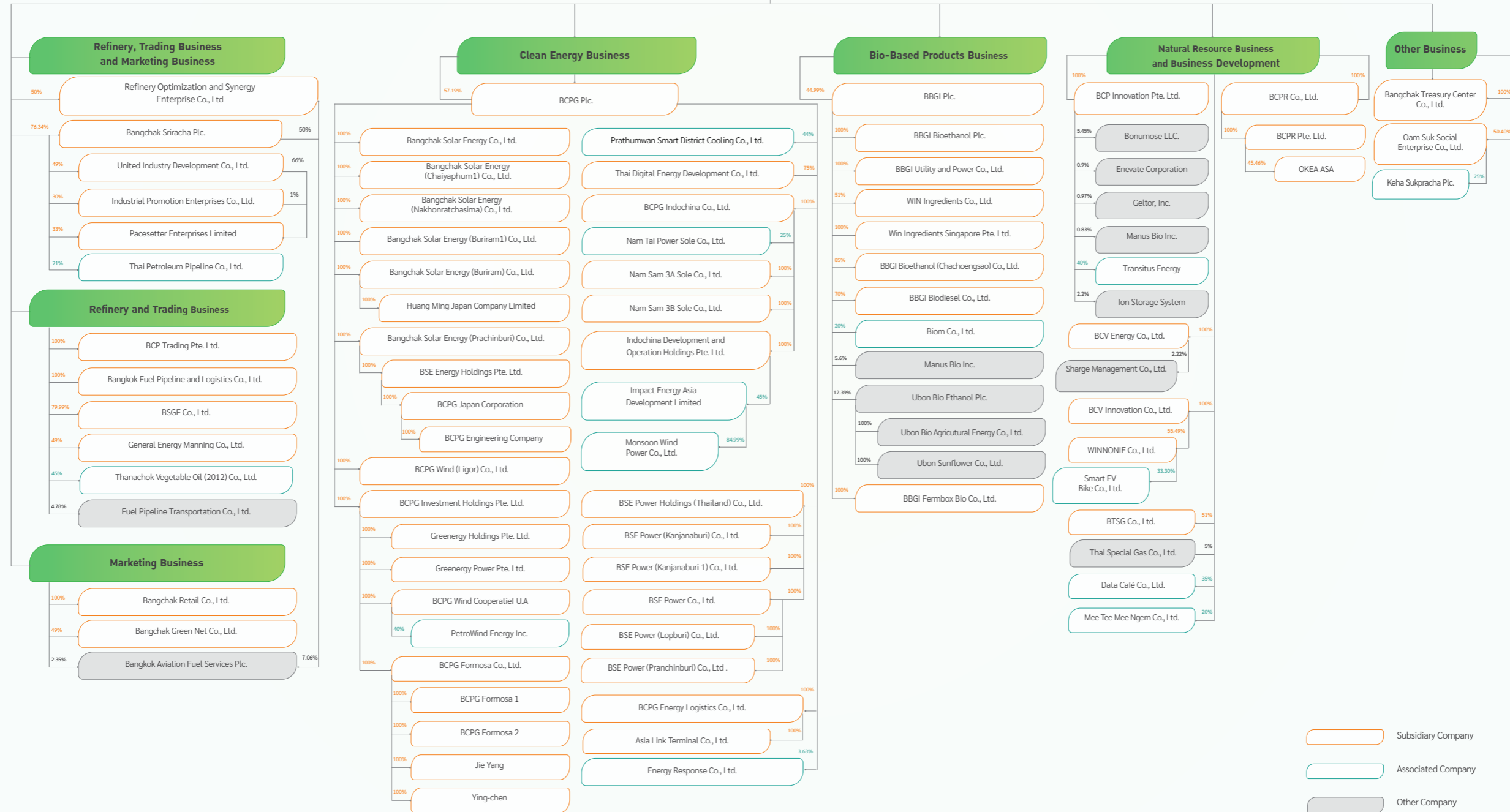
**Bangchak operates**  
Bangchak operates its refinery and oil trading business, marketing business, bio-based products business, clean power business, natural resources business and business development around 10 countries, which are Thailand, Cambodia, Laos, Vietnam, Singapore, Philippines, Japan, Taiwan, Norway and the United State of America (Disclosure 2-1)

# Shareholding Structure



The date to list shareholders is September 7, 2023

**Bangchak Corporation Plc.**  
Registered Capital and Paid-up Capital Baht 1,376,923,157

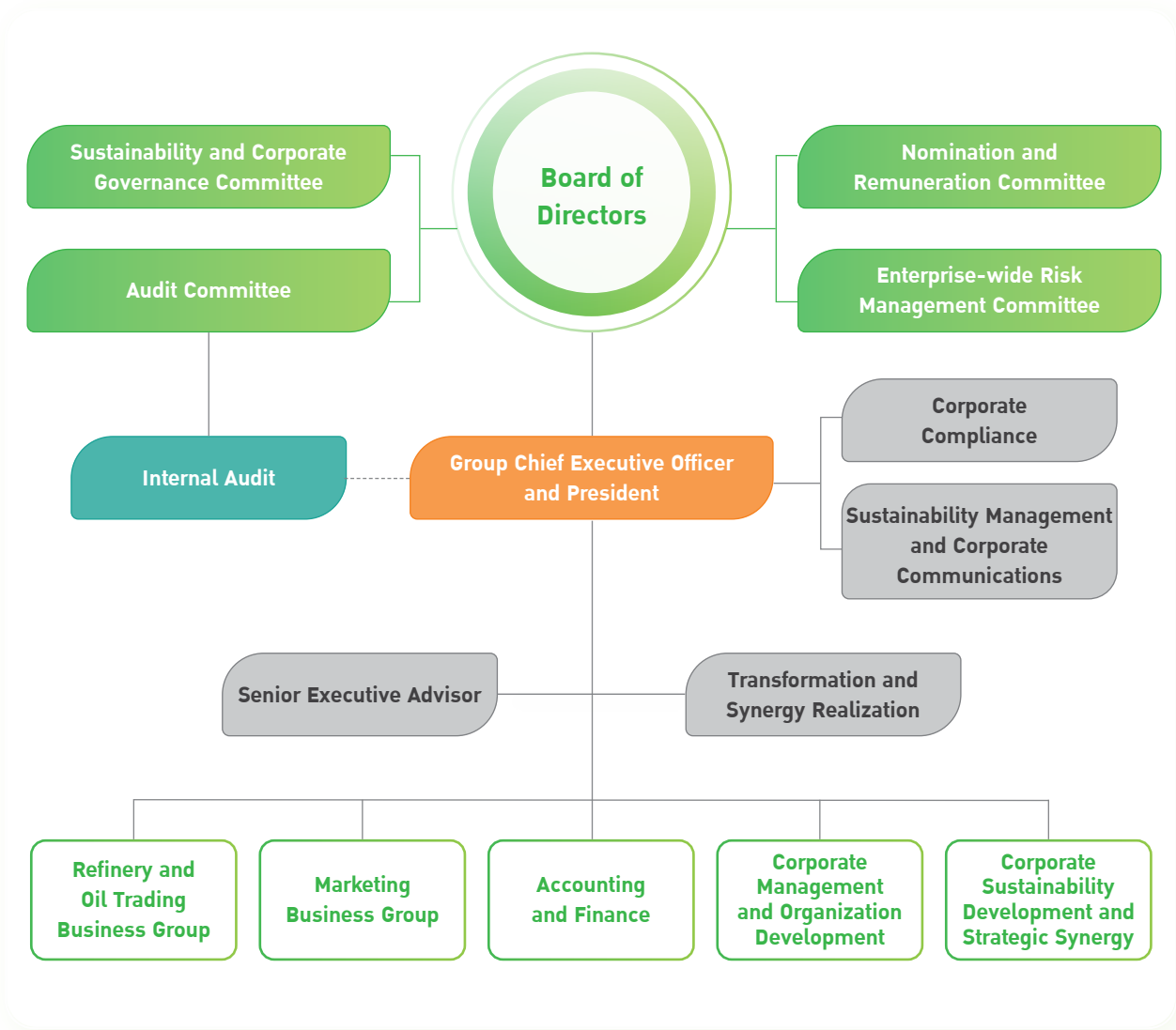


Subsidiary Company  
Associated Company  
Other Company

As of December 2023

# Management Structure (Disclosure 2-9, 2-11)

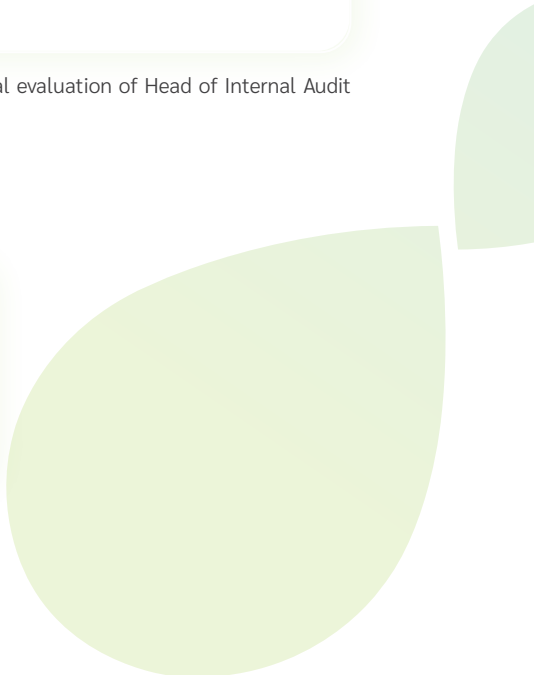
Refer to Form 56-1 One Report under topic “Corporate Governance Structure and Key Information about the Board, Sub-committees, Management, Employees, and Others”



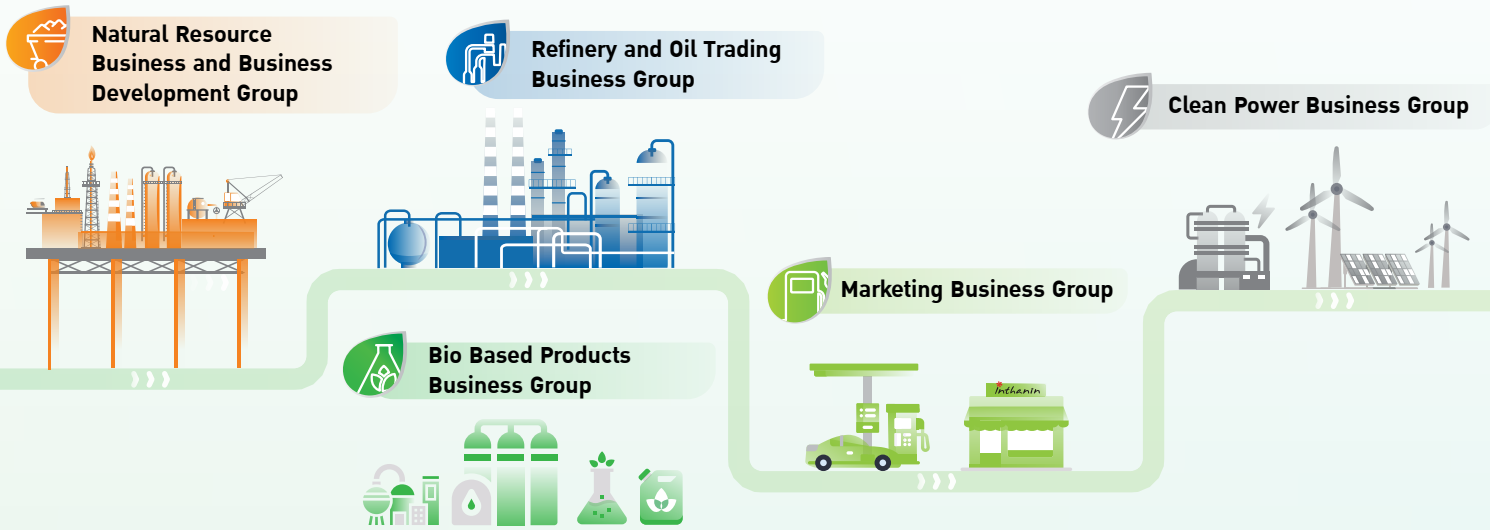
**Remark:** - The Audit Committee considers, appoints, transfers, dismisses, and undertakes annual evaluation of Head of Internal Audit and review the independence of Internal Audit.



More information available in  
Annual Registration Statement /Annual Report 2023  
(Form 56-1 One Report) Page 175



# Bangchak Business Value Chain (Disclosure 2-6)



## Natural Resource and New Business Group



**Petroleum exploration and production business Group**  
BCPR Pte.Ltd was established in Singapore. It has invested in OKEA ASA. It produces crude oil and natural gas fields Draugen, Gjoa, Ivar Aasen, Yme, Brage and Nova and holds rights or is in the process of developing crude oil and natural gas fields in several concession blocks in Norway. In addition, OKEA ASA as the operator for the Draugen and Brage fields. OKEA ASA is continuously focusing on finding opportunities for growth through M&A.

At the end of 2023, OKEA ASA has a production capacity equivalent to 24,590 barrels of crude oil per day, with a ratio of crude oil, gas, and natural gas liquids (NGL) of 67%, 25%, and 8%, respectively. The seven fields of crude oil and natural gas, with OKEA ASA as the operator or co-investor, are as follows:

- The Draugen field, located in the southern part of the Norwegian Sea, started production in 1993. Since 2018, OKEA ASA took over as operator and improved Draugen’s operational efficiency and enhanced its reserve potential and production stability. At the end of 2022, the Draugen field had a net production capacity equivalent to 6,487 barrels of oil per day. By October, 2023, the Company was able to develop the Hasselmus project.

**OKEA ASA has a production capacity equivalent to**

**24,590** barrels of crude oil per day

With a net production capacity equivalent to 4,400 barrels per day, it serves as a supply point for Draugen. This project was 3 months ahead of the original production commencement date set for Q4 of 2023, and to date, there have been no impairments in operations.

- The Gjoa field began production in 2010 and is operated by Neptune Energy Norge AS. By the end of 2023, the Gjoa field had a net oil equivalent capacity of 5,812 barrels per day in December.
- The Ivar Aasen field began production in 2016, which is operated by Aker BP ASA. By the end of 2023, the Ivar Aasen field had net production capacity of 3,009 barrels of oil equivalent per day in December.
- The Yme field began production in 1996 and is operated by Neptune Energy Norge AS. By the end of 2023, the Yme field had net production capacity of 2,809 barrels of oil equivalent per day in December.
- The Brage field is located in the northern part of the Norwegian sea. Production began in 1993, and in 2022 OKEA ASA acquired the right to operate. By the end of 2023, the Brage field had a net production capacity equivalent to crude oil 4,856 barrels per day in December.
- The Nova field will begin production in 2022, which is operated by Wintershall Dea. By the end of 2023, the Nova field had net production capacity of 1,612 barrels per day of oil equivalent in December.
- The Statfjord field enters as the latest field on December 29, 2023. At the end of the year, it had a capacity of 11,000-12,000 barrel of crude oil equivalent per day, which will increase OKEA's production capacity of crude oil equivalent to 35,000-40,000 barrels per day in 2024.

Crude oil and natural gas projects under development:

- The Mistral, Arkenstone, and Aurora projects, are all in the survey and evaluation phase. If found to have sufficient potential, OKEA ASA will start investing by the end of 2024, and production is expected to commence between 2026-2027.

OKEA ASA continues its operation based on the vision of being a leading mid-to-late-life operator with a focus on low risk project investments, implementing effective cost control and capital management policies to maintain financial liquidity and deliver consistent returns to shareholders.

**Natural Resource Business** established BCP Innovation Pte. Ltd. in Singapore, to operate and invest in businesses related to lithium ore. and innovation-related businesses abroad. Currently, BCPI has the right to purchase lithium according to the Lithium Purchase Agreement with Lithium Americas Corp., up to 6,000 tons per year, from the Cauchari-Olaroz project and has invested in many other startup projects.

Established BTSG Company Limited (BTSG), a joint venture between Bangchak (51% stake) and Thai Special Gas Company Limited (TSG) (49% stake) to develop business and provide gas-related services. Liquid Natural Gas (LNG) with the goal of expanding the number of LNG service stations to major cities in all four regions of Thailand and collaborating with groups of transport sector operators to open service stations together. To facilitate and distribute services to cover Push the use of clean fuels to be concrete. Respond to the demand for LNG in the transportation sector that will increase in the future.

BTSG Company Limited opens the first Liquefied Natural Gas (LNG) service station in Thailand. At Map Lang District Chonburi Province in 2023.





## Refinery and Oil Trading Business Group



The Company acquired shares of Bangchak Sriracha Public Company Limited (formerly ESSO (Thailand) Public Company Limited) marking a significant step in energy security for Thailand. The Refinery and Trading Oil Business Group operates the entire supply chain with two world-class refineries namely Bangchak Phra Khanong Refinery and Bangchak Sriracha Refinery (operated by Bangchak Sriracha Public Company Limited or BSRC), with a combined nameplate capacity of 294,000 barrels per day.

**Refinery and Oil Trading Business Group operates the entire supply chain nameplate**



capacity of  
**294,000** barrels per day

Bangchak Phra Khanong Refinery is a modern complex refinery with nameplate capacity of 120,000 barrels per day. It yields premium products in the gasoline and diesel groups, and has been upgraded to meet the EURO 5 standard in accordance with governmental policies. The refinery also produces value-added products such as White Spirit 3040 (solvent), Unconverted Oil (UO, a precursor of lube base oil), and liquified petroleum gas (paint conductors in spray paint). Bangchak was the first in Asia to produce Gasohol E20 S EVO and also capable of producing Hi Premium Diesel S and

developing Hi Premium 97 and Gasohol 95, all of which meet the environmentally friendly EURO 5 standard with sulfur content at less than 10 PPM, 5 times lower than that of EURO 4.

Bangchak Phra Khanong Refinery strives for world class management excellence, with continuous improvements being made to optimize production efficiency. This is part of a Business process redesign under the Focus Analysis Success Transform+ (FAST+) initiative, with the goal of maximizing production potential. Management steps taken include:

- Uplifting business potential and expanding business opportunities while reducing costs and expenses in various areas ranging from crude procurement, production processes, oil storage tanks, oil intake/offtake pipelines, and oil tankers, to ensure refining efficiency. The average production rate in 2023 was 120,100 barrels per day.
- Planning of crude procurement and order placement to obtain appropriate GRM using Roll Month derivatives to lower crude procurement costs, resulting in the year's average GRM of USD 9.50 per barrel.

The Company currently holds a 76.34% stake in Bangchak Sriracha Public Company Limited (BSRC) which operates Bangchak Sriracha Refinery, a modern complex refinery with a nameplate capacity of 174,000 barrels. It produces premium high value products in the gasoline and diesel groups. New equipment had been installed and connected to improve oil quality to meet the EURO 5 standard in accordance with governmental policies. The refinery also produces value-added products, specifically solvents and asphalt. Moreover, it increases production capacity complimenting demand from the Marketing Business, especially for gasoline, which Bangchak Phra Khanong Refinery is currently to adequately supply.

To achieve excellence in management for an entire supply chain that comprises two world-class refineries, the Company established Refinery Optimization and Synergy Enterprise Company Limited (ROSE) to provide planning and operational services to Bangchak Phra Khanong Refinery and Bangchak Sriracha Refinery in order to achieve

maximum production efficiency, cost reduction, and highest economic value, and actualize transparency for all stakeholders, and also cover procurement, production, transportation planning, price risk management, sales management, and other aspects of work related to oil trading. Bangchak and BRSC each has a 50% stake in this company.



The Company continuously develops its international oil trading business through BCP Trading Pte. Ltd. (BCPT) which conducts System Barrels oil trading for Bangchak Phra Khanong Refinery and Bangchak Sriracha Refinery. Additionally, they also expanded crude oil sourcing and enhanced logistics efficiency (sourcing and management of oil tankers), with an emphasis on an Out-Out trading expansion (procuring and trading oil with companies other than Bangchak) and direct procurement from crude oil producers as well as market penetration into retailers of specialized products. New trading partners include new countries such as Libya, Oman, Nigeria, etc., now covering more than 24 countries and 100 contractual partners worldwide. The Company is on track to become an accredited ISCC (International Sustainability and Carbon Certification) sustainable supplier, and is seeking out new revenue opportunities in the biofuels market.

The Company enhanced its logistics management excellence through Bangkok Fuel Pipeline and Logistics Company Limited (BFPL), which manages fuel transportation for the Bangchak Phra Khanong Refinery and Bangchak Sriracha Refinery via pipeline, land, and sea transportation with maximum efficiency and competitive costs, while also

expanding oil depots nationwide through the pipeline fuel transportation business that provide a cost-effective means of transporting oil, reduces loss and lower carbon dioxide emissions.

In addition, the Company has plans to produce new, lowcarbon products, namely Sustainable Aviation Fuel (SAF). To that end, Bangchak has established the BSGF Co., Ltd., - a joint venture between Bangchak, BBGI Plc., and Thanachok Oil Light Co., Ltd., - to lead the sustainable alternative energy that produces SAF from used cooking oil based on the BCG Economy (Bio-Circular-Green Economy) model. With social and environmental development in mind, BSGF formulated the “Fry to Fly” initiative, a campaign to prevent problems from improper disposal of used cooking oils and to reuse for maximum benefit. The Company invested in the construction of a SAF production unit within Bangchak Phra Khanong Refinery, with a production capacity of 1,000,000 liters per day, and is expected to commence production in Q1 of 2025.

## Marketing Business Group



**Services stations**

**2,219** stations

The Company acquired shares of Bangchak Sriracha Public Company Limited, a significant step in bolstering national energy security and enhancing energy accessibility for customers and consumers. At the end of 2023, the Company had a network of 2,219 service stations, consisting of 1,389 stations operated by Bangchak and an additional network of 830 stations.

The Company aims to complete the logo change to the “New Leaf” logo and change the “ESSO” logo of acquired stations to “Bangchak” by the end of 2024. Additionally, the Company also sold products to customers in the industrial, transportation, aviation, maritime transportation, construction, and agriculture sectors. The newly opened stations in 2023 are large service stations with unique, modern designs and accommodate non-oil businesses and other services. Designated stations had undergone the “Unique Design Service Station” makeover, resulting in aesthetically pleasing and unique looks that impress upon customers, turning them into “must-visit” destinations. In 2023, the total number of Unique Design Service Stations was 87. Bangchak Service stations focus on the sales of high-performance and environment-friendly renewable fuels in both gasoline and diesel groups. The latter group comprises Hi Diesel S, Hi Premium Diesel S B7, Hi Diesel S B7, and Hi Diesel S B20 which are high-performance diesel fuels with added combustion improvements that enhance engine power and reduce pollutants to help preserve the environment. Additionally, the Hi Premium Diesel S B7 was developed with the environment in mind and contains low levels of sulfur, meeting the Euro 5 standard that is ideal for new European car models. The company also developed its gasohol to be compatible with the GDI (gasoline direct injection) and PFI (port fuel injection) engines under the name “Bangchak S EVO FAMILY”. The Bangchak Hi Premium 97 gasohol has an especially high octane of 97, the highest among E10 gasohols in Thailand, and is the only premium gasohol to obtain the Euro 5 international standard. It’s ideal for owners of premium cars who prefer higher octanes and for owners of standard cars looking for a boost in performance and engine longevity. Furthermore, the Company’s service stations are already providing added convenience to engage

customers by offering non-oil businesses and other services such as convenience stores, coffee shops, restaurants, car maintenance and oil change centers, as well as car washes.

In 2023, the Company is striding ahead with the non-oil business model by inviting leading chains such as Gateaux House, Horkiao, and Zhen Hao Chi, etc., to open their restaurants in the stations along with Michelin Star restaurants like Khua Kling Pak Sod, Jaedang Samyan, Pad Thai Fai Ta Lu, Naiuan Yentafo, and Fried Banana Rama 5, etc., to enrich service station customer experience and generate additional revenue for the businesses and partners. EV chargers have been installed in Bangchak service stations on major highways to support the growing use of electric vehicles (EV), totaling 265 charging outlets and 890 connectors (as of 31 December 2023). Bangchak’s service stations boast the highest number of quick EV chargers (DC) across all regions of Thailand—a travel companion for EV users along every major route.

The “Inthanin” coffee shop business, operated by Bangchak Retail Co., Ltd. (BCR), a Bangchak subsidiary, which operates the 1,020 branches (as of 31 December 2023) located in Bangchak service stations as well as in other locations such as shopping malls, office buildings, government offices, hospitals, leading educational institutions, and city electric train stations.

Furthermore, Bangchak service stations had also expanded the non-oil businesses for customer convenience, obtaining the rights to operate and expand chains such as DAKASI bubble tea in stations across the country, with 31 branches (as of 31 December 2023). Other business allies have opened their outlets at Bangchak station, including 15 Tops Daily, 15 Family Mart, 134 Mini Big C, and 2 Lawson branches (as of 31 December 2023). To further enhance service integration, Bangchak continues to expand its car care business under the brands FURiO Care, Green Wash, TYREPLUS, Wizard, and Autoclik, and established new branches with partners such as B-Quik and other lifestyle businesses such as laundry services, shipment couriers, and vending machines.

Bangchak community service stations, which have been operating since 1990 under the “Oil for Rice” initiative, have continuously grown and collaborated with community organizations for the 33<sup>rd</sup> year. The Company’s policy is to develop community service stations toward sustainability by upgrading their standards and services to the required level in order to serve as a mechanism to sustainably drive the community’s economy. In 2023, support for community stations was carried out through the COOP Bonding project. The project supports the improvement of stations, the increase in product variety, and the push for higher sales volumes to benefit high-potential cooperatives in accordance with its vision to develop into a participative and sustainable business.

With sustainable business in mind, the Company adopts the 4R process: Renew, Recycle, Reuse, and Reduce. Some applications of this process include the installation of solar roof top panels for power generation, the installation of EV chargers, the utilization of energy efficient resources and resources from the production process to build service station, and the expansion of green spaces at the service stations. Inthanin Coffee operates under the concept of “Inthanin Nature Cup”. Not only is the coffee meticulously harvested and brewed from 100% select Arabica beans, but its consumption is also done responsibly by Inthanin being a leader in utilizing 100% biodegradable PLA (polylactic acid) packaging that help to reduce plastic waste.

In addition to fuel products, the Company also gives importance to the production and distribution of lubricants and special products such as gear oil, brake fluid, grease and others under the brand “BCP Lubricants” as well as premium grade lubricants under the brand “FURiO” that has features to help save fuel. Helps protect the engine in all operating conditions. Prevents wear and tear which includes sales to the domestic market through the Bangchak service station network, car service centers, stores, industrial factories, the OEM (Original Equipment Manufacturer) market, and exports to foreign markets. The sales of aviation fuels see growth through continuous collaboration with partners in the aviation industry and help to meet rising demands created by the recovering tourism industry.

Moreover, the Marketing Business Group continues to emphasize continuous growth alongside social and environmental responsibilities through various social programs. The Term Nam Mun Pun Nam Jai program buys agricultural/innovative products from farmers and SMEs and gives them away to refueling customers. The Growing Vegetables at the Service Station program hands out vegetables grown on the stations’ premises to employees as a form of food aid, which often extend to customers as well. The program also includes sharing vegetable-growing knowledge with the community and schools around the stations. The Fry to Fly initiative buys used cooking oils at designated service stations, and utilizes them for the production of sustainable aviation fuels (SAF).



## Clean Power Business Group



The Company currently invests in power generation from clean energy sources through BCPG Public Company Limited (a subsidiary of Bangchak), established to produce and distribute electricity generated from renewable energy and other types of clean energy both in and outside of Thailand. By the end of 2023, BCPG has a total installed capacity of 2,025.2 megawatts. The types of energy used can be categorized by country as follows:

### Solar power plant

- Solar farms in Thailand, operating commercially at 176.8 MW (operating solar rooftops included).
- Divestment of solar farms portfolio in Japan, which are commercially operational at 79.7 MW (proportionate to shareholding interests). The projects consist of S1 (Nakatsugawa) at 0.7 MW, S11 (Takamori) at 1.0 MW, S19 (Nojiri) at 0.9 MW, Tarumizu at 8.1 MW, Gotemba at 4.0 MW, Komagane at 25 MW, Yabuki at 20 MW, and Chiba 1 at 20 MW. The transaction is expected to be completed in Q1/2024.
- Acquisition of solar farm projects in Thailand in the first quarter of 2024, which have a total installed capacity of 13 MW, consisting of four projects: BS Solar at 5 MW, Wichianburi at 1.75 MW, Kathun at 1.2 MW, and Krasaesin at 5 MW. The PPA duration is 25 years, and FiT of 4.12 baht per unit.

### Wind power plant

- A wind power plant project in Thailand located in Nakhon Si Thammarat Province, commercially operational at 9.0 MW.
- A wind power plant project in the Philippines, commercially operational at 14.4 MW.

### Hydro power plant

A hydro power project in Laos, commercially operational at 114 MW, consisting of the Nam San 3A (69 MW) and Nam San 3B (45 MW) projects. The PPA duration is 25 years.

### Natural gas power plant

- Four combined-cycle gas turbine (CCGT) projects in the United States, with a total installed capacity 857 MW (proportionate to shareholding interests) include Carroll County Energy (CCE) at 341 MW, South Field Energy (SFE) at 90 MW, Hamilton Liberty at 212 MW, and Hamilton Patriot at 214 MW.

### Other basic infrastructure projects

- Power transmission line project in PDR Laos, for the sales of electricity from Laos to Vietnam, at 220 kV
- Oil terminal and seaport business in Phetchaburi, Thailand, consisting of 20 oil storage tanks, five oil pipelines, onshore fuel distribution ports, and seaport.

Projects currently under development include:

- Thailand rooftop solar power generation project, at 1.1 MW
- Japan solar power generation project, Chiba 2, at 10.0 MW
- Taiwan solar power generation project at 469.0 MW, consisting of Yunlin at 215 MW, Chiayi at 8 MW, Tainan at 160 MW, and Khaohsiung at 86 MW
- Philippines wind power generation project, 5.3 MW production capacity
- PDR Laos wind power generation project, 289.5 MW production capacity, expected COD in 2025
- Invest in the oil terminal business. Oil transportation terminal in Phetchaburi Province

BCPG has signed an MOU regarding the joint product development, marketing, and investment in convertible debentures of VRB Energy Inc., to collaborate in battery development for 2-wheeled and 3-wheeled electric vehicles, residential-use batteries, commercial and industrial batteries, and the opportunity to build battery plants to produce module-level, pack, and cell-level batteries in partnership with Xiamen Ampace Technology Limited (Ampace) to meet demands in Thailand and Southeast Asia. BCPG also signed an MOU with BCP Innovation Pte. Ltd. (BCPI) to procure and sell lithium, signed a Distributorship Agreement with SVolt Energy Technology (Thailand) Co., Ltd. (SVolt Thailand), for the distribution of batteries for residential use and commercial and industrial use, and signed a research partnership with Energy Research and Development Institute – Nakornping, Chiang Mai University and the Provincial Electricity Authority (PEA) to research on a Vanadium Redox Flow Alternative Energy Storage System, to enhance the power grid stability in Amphoe Na Haeo, Loei province.

### Clean Power Business Group Capacity of



**2,025.2 megawatts**

## Bio-Based Products Business Group



The Company operates bio-based products business such as ethanol business and biodiesel business, operated by BBGI Public Company Limited (BBGI), a with awareness of the importance of alternative energy. The goal is to reduce the trade deficit from fuel imports. It is beneficial to the energy security of the country. Support farmers to protect the environment, the Company promotes and supports the mixing of ethanol and biodiesel with gasoline and diesel. It is a product of Gasohol 91, Gasohol 95, Gasohol E20, Gasohol E85 and Hi Diesel.

BBGI Public Company Limited (BBGI) is a major producer and seller of biofuels in Thailand. Subsidiaries and associate companies of BBGI together account for a production capacity of 1,800,000 liters per day, of which 800,000 liters is ethanol and 1,000,000 liters is biodiesel. In 2020, the Company expanded its investment into bio-based products by acquiring additional shares in Manus Bio Inc. and jointly investing in the establishment of WIN Ingredients Co., Ltd., to operate a bio-based products business. In addition the Company established BSGF Company Limited (BSGF), a joint venture with BBGI and Thanachok Oil Light Co., Ltd., to operate sourcing raw materials and producing and distributing sustainable aviation fuel (SAF) from using used cooking oil. Its production capacity is 1,000,000 liters per day. The expected commercial operation date is Q1, 2025.

In October 2023, BBGI and Fermbox Bio signed a joint venture contract to construct a Contract Development Manufacturing Organization (CDMO) plant. The first phase involves the production of enzymes, with a planned expansion to the most advanced synthetic biology (Synbio) products, resulting in a planned total fermentation capacity of 1,000,000 liters. The entire process, from upstream to downstream, will utilize advanced process equipment. BBGI will lend its operational experience to oversee the execution of this large-scale project, while Fermbox Bio brings to the table its expertise in synthetic biology and production process and will also bring products ready for commercialization to be produced in this joint venture plant. BBGI Fermbox Bio Co., Ltd., a joint venture between BBGI and Fermbox Bio, began the construction of Thailand and Southeast Asia's first commercial CDMO plant. During the initial phase, it will produce about 200,000 liters of enzymes, and will expand other Synbio products utilizing Precision Fermentation.



**Production capacity of**  
**1,800,000**  
litter per day



**Ethanal**  
**800,000** liters per day

**Biodiesel**  
**1,000,000**  
liters per day



# Business Structure

## Inputs

## Activities

## Impact to the Company

## Impact to Stakeholders

### Financials

- Cost of sales and services: THB 352,115 million
- Investments in affiliates and joint ventures: THB 28,349 million
- Equity attributable to owners of the parent company: THB 72,112 million

### Production

- Property, plant, and equipment: THB 29,445 million
- Investment in projects to upgrade and enhance the efficiency of refineries and service stations
- Establishment of a new sourcing platform

### Utilization of Natural Resources

- Raw materials used in distillation
- Expenditure on environmental protection: THB 8.8 million
- Volume of tap water usage at Bangchak Phra Khanong Refinery: 2.61 million cubic meters
- Amount of purchased electricity consumption at Bangchak Phra Khanong Refinery: 14,037.48 megawatt-hours (MWh)

### Human Resource

- Number of employees: 1,184
- Number of training hours: 42,333.60 hours
- Training and development expenses: THB 28.21 million

### Social and Community Care

- Community development, social initiatives, and donations: THB 231 million
- Employee volunteer hours: 11,296 hour

### Innovation and Technology

- Expenditure on research and development of technology and innovation amounted to THB 1.9 million
- Business Process Redesign (BPR) project aimed at enhancing efficiency
- Promotion of new business development through "Wrong DI (Wrong-Deliver-Innovation) project"

**Vision**  
 *วิสัยทัศน์โลกยั่งยืนด้วยนวัตกรรมสีเขียว*  
**Crafting a Sustainable World with Evolving Greenovation**

**Core Values**

- i** INNOVATION: นวัตกรรมที่ใหม่
- am** AGILITY & MOBILITY: ความคล่องตัวและรวดเร็ว
- b** BOLDNESS: กล้าหาญ นึกถึง นึกถึงคุณ
- c** CUSTOMER EMPATHY: เข้าใจลูกค้า
- p** PASSION & OWNERSHIP: ความทุ่มเทและความรับผิดชอบต่อหน้าที่



### Financials

- Cost of sales and services THB 385,853 million
- EBITDA THB 41,680 million
- Net profit attributable to owners of the parent company: THB 13,233 million
- Earnings per share: THB 9.27

### Production

- Average production rate: 120.1 thousand barrels per day
- Basic refining cost: USD 9.57 per barrel
- Total volume of oil product sales: 396.7 million liters per month
- Savings in procurement expenses account for 11.7% of the budget for the year 2023

### Utilization of Natural Resources

- The reduction of greenhouse gas emissions (Scope 1 and 2) from the Bangchak Phra Khanong Refinery decreased by 12.7% compared to the base year of 2015.
- The implementation of the 3Rs (Reduce, Reuse, and Recycle) measures has resulted in a reduction of 1.48 million cubic meters of fresh water usage, representing a decrease of 35.8% compared to the water demand in the production process.
- Quantity of waste sent to landfills 0 tons
- Waste managed according to 3Rs principles: 100%

### Human Resource

- Cost savings from Business Process Redesign THB 1,904 million
- New startup business
- Organizational engagement score: 85%

### Social and Community Care

- Satisfaction with the Company's community engagement activities 96.3%
- No complaints received
- Community engagement score: 89%

### Innovation and Technology

- Engaging in the production of Astaxanthin products
- Coin-operated gas stations "Krathing" initiative

### Financials

- Dividend payment to shareholders: THB 1.50 per share
- Tax paid to the government and local authorities: THB 1,837.11 million
- Market capitalization: THB 59,896.16 million

### Production

- The production system is secure, with no complaints regarding air pollution, oil or chemical leaks.
- The assessment of suppliers' satisfaction with the procurement department's performance is at a very high level, at 93%

### Utilization of Natural Resources

- Reduced greenhouse gas emissions from fuel refill through Bangchak member card by 189,958 tons of carbon dioxide equivalent
- Reduced water usage in the production process equivalent to the usage of 3,900 households
- Produced Euro5 refined oil products to mitigate PM2.5 pollution

### Human Resource

- Average training and development hours per employee: 35.75 hours per person per year
- Training expenses per employee: THB 23,825.76 per person
- Lost Time Injury Frequency Rate (LTIFR) for employees: 0 incidents and for contractors: 0 incidents

### Social and Community Care

- Organized over 177 activities
- The community benefited more than 101,558 individuals
- Environmental and renewable energy projects include the "Rak Pan Suk Junior" and "Solar Pan Suk" initiatives
- Education promotion projects include the "Am Kian Rian Sanook Pun Dek Jew Pen Dek Jaew" and the development towards "Rong Rian Ton Bab Lae Khun Kru Ton Bab Nai Krongkarn"

### Innovation and Technology

- Bioproducts derived from astaxanthin contribute to health care without harming the body.
- Distant communities from the gas station have access to quality fuel at reasonable prices and convenient services such as mobile top-up and bill payments, saving travel time.

## Economic, Social, and Environmental Challenges

- 6 CLEAN WATER AND SANITATION
- 8 DECENT WORK AND ECONOMIC GROWTH
- 9 INDUSTRY INNOVATION AND INFRASTRUCTURE
- 11 SUSTAINABLE CITIES AND COMMUNITIES
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- 13 CLIMATE ACTION
- 15 LIFE ON LAND
- 16 PEACE, JUSTICE AND STRONG INSTITUTIONS



# Bangchak at a Glance in 2023



## Economic Growth



Revenue from selling of goods and services  
**385,853** million baht



Profit (loss) for the year  
**13,233** million baht



Dividend payment per share  
**1.50** THB/share



EBITDA  
**41,680** million baht

### EBITDA by business group



Refinery and Oil Trading Business Group



**14,794** million baht



Marketing Business Group



**3,157** million baht



Clean Power Business Group



**4,219** million baht



Bio Based Products Business Group



**667** million baht



Natural Resource Business and Business Development Group



**19,671** million baht



Bangchak Sriracha Business Group



**997** million baht

### Corporate Governance

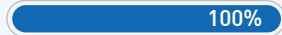


CGR

The excellent ranking (five emblems) under the CGR (Corporate Governance Report) survey of listed companies.



Suppliers had been certified by the CAC  
**136** companies



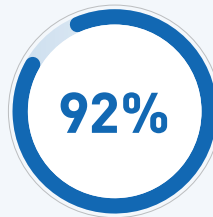
Percentage of executives and employees acknowledging the Anti-Corruption Policy and passing the test



No Gift Policy for  
**10** consecutive years



Percentage of notification of the online conflict of interest



### Supply chain management

Local purchases of goods and services (Thailand)

**3,838** million baht

\* Local purchasing in Thailand, exclude raw materials and crude oil

Percentage of cost saving from strategic sourcing procurement in 2023



Percentage of tier-1 suppliers and critical non tier-1 suppliers participating in ESG risks assessment



### Your Greenovative Destination

Bangchak service station **2,219** stations



Standard service stations  
**773** stations



Inthanin coffee shop  
**1,020** branches



Community stations  
**616** stations

Customer satisfaction



Additional network service stations  
**830** stations operated by Bangchak Sriracha Plc.



## In Harmony with the Environment

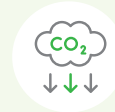
### Net energy consumption within the organization



**13,749.84**  
Terajules

### Total GHG emissions

Scope 1 and Scope 2  
(Equity share approach)



**0.96** MtCO<sub>2</sub>eq

### Percentage of GHG emissions



**Refinery and Oil Trading Business Group**

99.4%



**Marketing Business Group**

0.6%

### Total water withdrawal



**Total**  
**2.64** Million m<sup>3</sup>

(Produced water from crude oil extraction/processing, groundwater and third-party water of the refinery)



### Water recycled and reused of the refinery

**1.32** Million m<sup>3</sup>



### Effluent of the refinery

**0.94** Million m<sup>3</sup>



### 3Rs waste management

**100%** of total waste

### Environmentally friendly products



**Number of significant oil and chemicals spill**  
(more than 100 barrels/time) **0** case



**Numbers of accidents from product transportation**  
(financial loss more than 1 million baht/accident) **0** case



## Creating Values for Society

### Safety

#### Loss-Time Injury Frequency Rate (LTIFR)



**Employees**  
Male **0** Female **0**



**Contractors**  
Male **0** Female **0**

#### High-Consequence Work-Related Injuries



**Employees**  
**0** time



**Contractors**  
**0** time

### Society



#### Costs in Business Activities and Processes to Support Society

(Money, Hours of volunteer employees, Organization items/products, Management) **more than 231** million baht



#### The BCG Economy Model covering

**more than 15,000** person youths  
from nearly **221** schools in **56** provinces



#### Carbon Markets Club Member **165** organizations

**607** people Support for buying and selling carbon credits and RECs **1,411,779** tCO<sub>2</sub>eq



#### SROI

Supporting Project for the Bang Nam Phueng Large Farm Stingless Beekeeper Group

(from 2020 to 2023) **1.95**

Sen Thang Hing Hoi, The Path of Conservation Project

(from 2014 to 2023) **1.58**

### Employees

#### Employee engagement scores

85%

#### Average training hours of employees

hours/person/year

35.75%

No significant human rights complaints

# Bangchak and Sustainability

The Company is committed to meeting the needs and expectations of all its stakeholders, including the sustainable development goals (SDGs). It also applies the criteria for assessing its sustainability performance with national and global standards, covering governance, environmental, and social aspects to reduce risks and business impacts, and to explore opportunities for continuous improvement in work processes and operate the business with sustainability compliance with global sustainability standards in order to improve the adaptability of the Company to global changes and emerging issues.

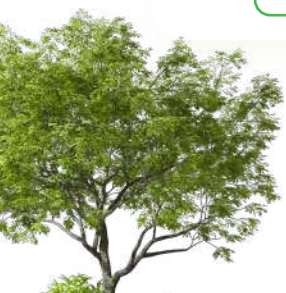
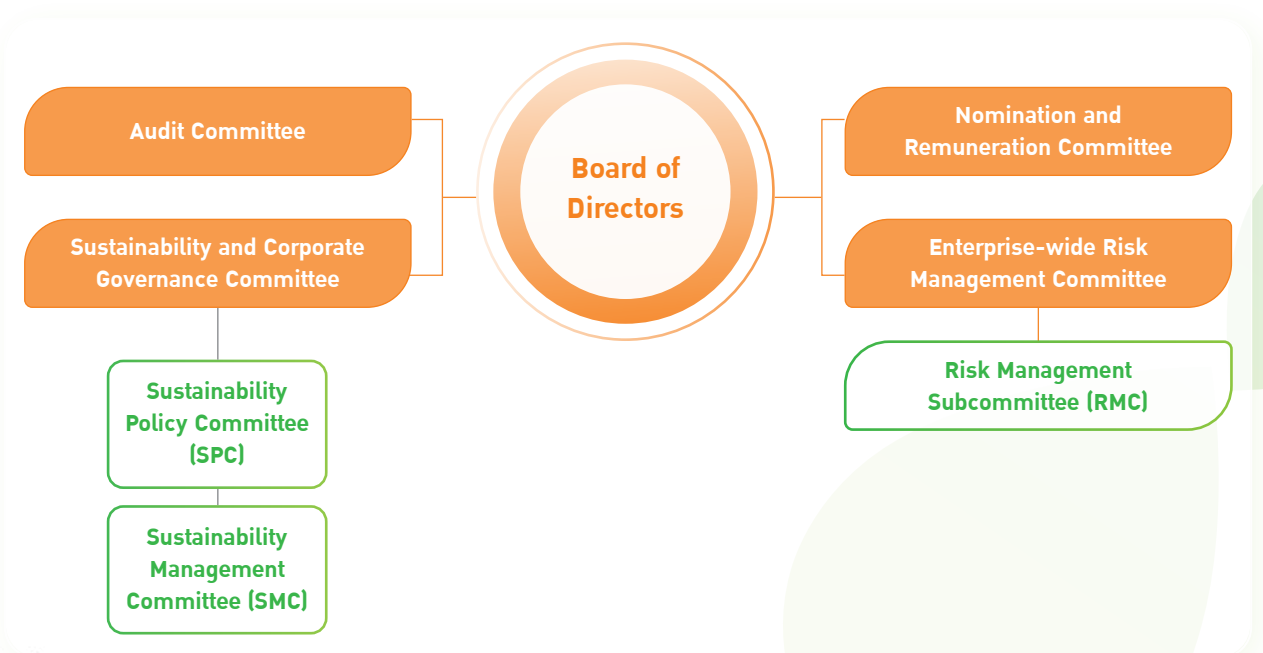
The Sustainability and Corporate Governance Committee (SCGC), working alongside the Enterprise-wide Risk Management Committee, oversees, reviews practices, and formulates policies regarding sustainability and corporate governance.

The Company conducts its sustainability operations through supervision from the Sustainability Policy Committee (SPC), chaired by the Group's CEO and president with business group executives and functional group managers acting as committee members. (Disclosure 2-9, 2-13)

The SPC defines the goals, directions, policies, and strategies for the Company and its subsidiaries' sustainability direction by aligning them with the SDGs, organizational sustainability assessments, and stakeholder expectations. It holds regular at least biannual meetings to ensure collaboration and communication.

The sustainability policies and goals established by SPC are implemented by various departments and committees related to corporate sustainability. The Sustainability Management Committee (SMC) oversees this process by monitoring, collecting, and evaluating the progress and performance of each unit and reporting the results to the SPC at least on a biannual basis. The SPC will then communicate the sustainability performance to the Risk Management Subcommittee, the Enterprise-wide Risk Management Committee, and the Sustainability and Corporate Governance Committee on a biannual basis, respectively.

The SMC consists of executives from Bangchak Group. In 2023, the focus is on developing a strategy to address climate change within the BCP316NET framework, aiming for the Net Zero GHG Emissions target by 2050.



## Sustainability Principles and Frameworks (Disclosure 2-23)

The Company's "Sustainability Policy" is based on the integration of sustainable economic principles, criteria, and global standards in sustainability and social responsibility including the UN Global Compact (UNGC), the S&P Global Corporate Sustainability Assessment (S&P Global CSA), Sustainable Development Goals (SDGs), Sustainability Rating by Morgan Stanley Capital International (MSCI), International Organization for Standardization (ISO), and the expectations of stakeholders. It aligns with the Company's vision, direction, and business strategy, and provides the foundation for sustainability initiatives at the organizational level. The Company measures and reports its performance following the guidelines of the Global Reporting Initiative (GRI) to demonstrate its commitment to sustainable business development throughout the value chain.

The Company has established a sustainability policy that covers all dimensions of business sustainability based on current operations of the Company, new businesses domestically and internationally, emerging risks, and global sustainability direction. It covers the total of 8 dimensions as follows:



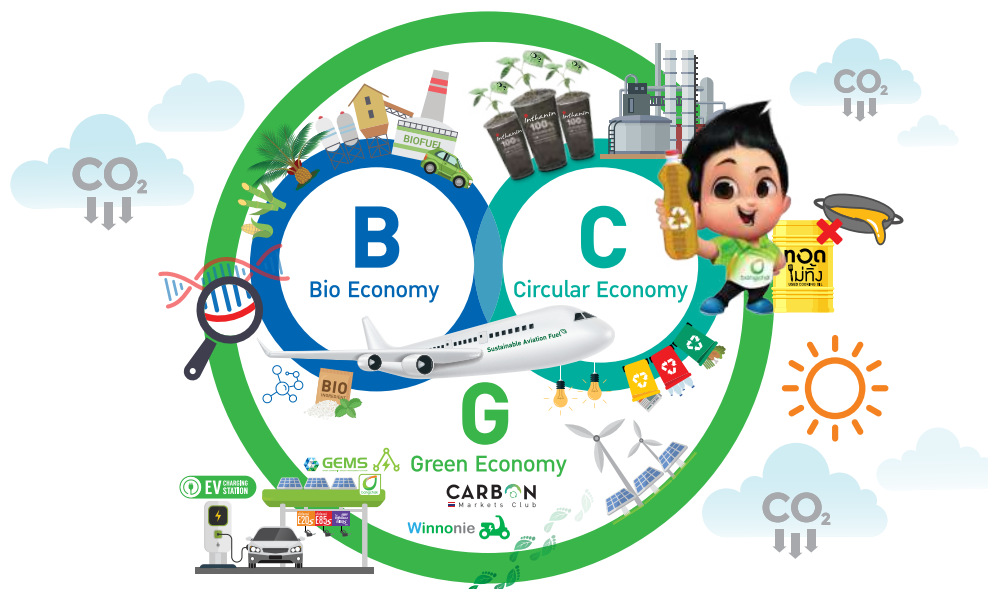
More information available in



Sustainability Policy Framework

1. Good Corporate Governance
2. Fair business operating practices
3. Responsible Production and Services and Promoting Sustainable Society
4. Sustainability Due-Diligence Assessment for New Businesses
5. New Innovative Business Investment for Sustainability
6. Worthwhile Resources and Environmental Management
7. Human Rights Support for Sustainable Economic Prosperity
8. Sustainable Social Development

In addition, the Company has adopted the BCG Economy Model, which consists of three main economies: Bio economy, which focuses on the efficient use of biological resources, relying on technology and innovation to transform agricultural products into high value bioproducts; Circular economy, which focuses on the efficient use of resources, raw materials, and products; and Green economy, which aims to solve environmental problems and reduce impacts sustainably. These are the guiding principles for conducting business to create value, quality, and sustainability for the Company and all stakeholders.



# Bangchak and Stakeholders

## Operations with Stakeholders (Disclosure 2-29)

The Company is committed to driving change through sustainable energy, maintaining a balance of energy stability, as well as enhancing the quality of life and well-being with green solutions. The Company conducts business with consideration for the economy, environment, and responsible governance towards all parties, according to the vision “Crafting a Sustainable World Evolving Greenovation”. Operations to meet the needs and expectations of stakeholders are therefore important that the Company has continuously developed its efficiency. The Company has been using data to support its strategic planning to create a balance between value and worth from business operations, prevent the impact on the sustainability of stakeholders, and build confidence in working together. The Company’s stakeholder groups are divided into 10 groups: employees, suppliers and contractors, customers, business partners who are service station operators, competitors, creditors, investors, Bangchak’s neighbors, mass media, and government agencies.



## Process of Working with Stakeholders

**1**

### Identify stakeholder groups and prioritize by considering 3 criteria:

- Stakeholders’ involvement in business operations.
- Whether or not the Company can impact stakeholders in the sustainability issues.
- Whether the stakeholders have the influence to impact the Company’s sustainability issues.

**2**

### The engagement process with stakeholders has important steps as follows:

- Specify the divisions responsible for stakeholder groups.
- Determine the systematic method and frequency of surveying the needs and expectations of stakeholders.
- Collect data on the needs and expectations of stakeholders.

**3**



### Determining Material Sustainability Issues:

- Identify causes and impacts that have occurred and are expected to occur, both positive and negative, on sustainability issues (economy, environment, and society, including human rights issues) and prioritize according to the severity and likelihood of occurrence.


**4**

### Implementation



- Propose the analysis results to the Sustainability Policy Committee (SPC) and the Sustainability and Corporate Governance Committee (SCGC) to determine the direction of sustainability operations and formulate organizational strategies and work plans to prevent and minimize the impact on the sustainability of stakeholders in each different group.



Stakeholder Group	Key Engagement Approaches in 2023	Expectations/Needs of Stakeholders in 2023	The Company's Responses in 2023	Response Target in 2023	Results in 2023	Activity Plan for 2024
<p><b>1. Employees</b></p> 	<p>1. Recognizing needs and expectations through the Engagement survey as follows:</p> <ul style="list-style-type: none"> <li>1.1 Engagement survey 2 times / year</li> <li>1.2 Determine the format of the survey questions in 3 formats                             <ul style="list-style-type: none"> <li>1.2.1 Engagement questions (Say Stay Strive)</li> <li>1.2.2 Questions that are appropriate for the situation (Satisfaction)</li> <li>1.2.3 Open-ended questions to allow respondents to express opinions on factors affecting commitment</li> </ul> </li> <li>1.3 Survey result analysis is divided into 2 reports:                             <ul style="list-style-type: none"> <li>- Corporate</li> <li>- Business Group &amp; Business Unit</li> </ul> </li> </ul> <p>2. Conducting Focus Group</p> <p>3. HR Visit</p> <p>4. Leadership Activities</p> <p>5. Develop an Engagement dashboard for supervisors to see the score by themselves</p>	<ul style="list-style-type: none"> <li>1. Compensation and benefits</li> <li>2. Progress and development</li> <li>3. Work process</li> <li>4. Performance appraisal</li> <li>5. Quality of life and work environment</li> </ul>	<p>The Company takes care of employees under the 100Xhappiness initiative, in line with each issue raised by employees:</p> <ul style="list-style-type: none"> <li>1. Compensation and benefits: review welfare policy, including: full reimbursement of medical expenses for parents, addition of birthday leave for employees, development of a system to improve convenience in making request for various benefits such as employee housing loans, special loans, and communication with employees on additional compensation.</li> <li>2. Performance appraisal: Conduct performance feedback</li> <li>3. Progress and development: Communicate and clarify the promotion criteria for employees, organize a Congratulation Day event to praise and congratulate employees, and communicate about the career growth and development of employees. In 2023, number of employees grew by 15%, and the Company provided training through the Online system and other various projects to support employee development on areas such as Design thinking, Mandatory.</li> <li>4. Work process: Implementing BPR (Business Process Redesign) system.</li> <li>5. Quality of life and work environment: Improvements on areas such as restrooms, meeting rooms, medical rooms, dining areas, and refinery areas. The changing of the medical room service provider led to a satisfaction score of 4.85 out of 5. The Company provides continuing care on COVID-19 in areas such as booster vaccines, ATK vending machines, ATK test result recording system and notification system in case it yields a positive result, and also initial care medication to the employee's homes. The Company also supports healthcare with flu vaccines, improves the work environment, and organizes Recognition projects under 12 months 12 activities program, which reflects the Company's core values and promotes understanding.</li> </ul>	<ul style="list-style-type: none"> <li>1. Engagement Score &gt; 74%</li> <li>2. Average Turnover Rate &lt; 5%</li> <li>3. High Performer Turnover Rate &lt; 3%</li> <li>4. Job Rotation for Development &gt; 15%</li> </ul>	<ul style="list-style-type: none"> <li>1. Engagement Score 85%</li> <li>2. Average Turnover Rate = 5.05%</li> <li>3. High Performer Turnover Rate = 2.17%</li> <li>4. Job Rotation for Development = 12.67%</li> </ul>	<p>Development of EE through Theme</p> <ul style="list-style-type: none"> <li>• 100 x Happiness Plus</li> <li>• Promotion of Engagement through Culture Recognition</li> <li>• Employee Well being</li> </ul>
<p><b>2. Suppliers and Contractors</b></p> <p><b>2.1 General Suppliers and Contractors</b></p> 	<ul style="list-style-type: none"> <li>1. Annual suppliers and contractors seminar</li> <li>2. Surveying suppliers and contractors satisfaction, needs, and expectations</li> <li>3. Suppliers and contractors visit</li> <li>4. Knowledge Sharing Session</li> </ul>	<ul style="list-style-type: none"> <li>1. Speed in procurement process (emphasizes on transparency to build confidence in business operations)</li> <li>2. Digital Transformation</li> <li>3. Convenient and easy-to-use procurement system for bidding</li> <li>4. Communication channels or channels for presenting the products and services of suppliers / contractors</li> </ul>	<ul style="list-style-type: none"> <li>1. Implementing a new procurement system.</li> <li>2. Planning to improve the procurement process to align with the new business operations, while still emphasizing transparency to build confidence in business operations.</li> <li>3. Providing opportunities for suppliers / contractors to present new products, services, and technologies to the Company.</li> <li>4. Suppliers and contractors visit according to the S&amp;P Global criteria.</li> <li>5. Annual suppliers and contractors seminar, which allows for sending questions prior to the event, intended to be another communication channel with suppliers and contractors.</li> <li>6. Surveying satisfaction, needs, and expectations of suppliers and contractors.</li> </ul>	<ul style="list-style-type: none"> <li>1. Select a new platform along with the implementor.</li> <li>2. Initial improvement of the procurement process, which supports the business consolidation to ensure business continuity</li> <li>3. Knowledge Sharing event for suppliers and contractors and related users as a new alternative to adopt technologies with business divisions</li> <li>4. Visit suppliers and contractors in the Critical Vendor group together with the sustainability Division</li> </ul>	<ul style="list-style-type: none"> <li>1. Ongoing the implementation process, expected to be completed by June 2024</li> <li>2. Procurement process is not interrupted and can continue as usual</li> <li>3. Able to apply and adopt new technologies</li> <li>4. Visited suppliers and contractors according to the list</li> <li>5. Organized a suppliers and contractors seminar in November 2023</li> </ul>	<ul style="list-style-type: none"> <li>1. Completed implementation of a new procurement system</li> <li>2. Improve the procurement process to be appropriate and aligned with the shared service</li> <li>3. Continuously operate to allow suppliers and contractors to propose new products, services, and technologies to the Company</li> <li>4. Organize an annual suppliers and contractors seminar and survey their satisfaction, needs, and expectations</li> </ul>


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<b>2.2 Oil transportation by truck contractors</b>	<ol style="list-style-type: none"> <li>Direct and online communication with oil transport contractors, such as regular monthly KPI meetings, due to the collaboration between BSRC and BCP, to communicate the format and method of work for the contractors to understand the work and be able to adjust the ways of working</li> <li>Direct and online communication, able to notify the work process and news to the oil transport contractors to be able to continue working without errors</li> <li>Survey the satisfaction during the oil receiving process and the oil transportation process from customers</li> </ol>	<ol style="list-style-type: none"> <li>Appropriate job allocation during the period when the delivery workload decreases according to sales volume</li> <li>Communication about work division and delivery workload to build confidence with the oil transport contractors after the consolidation between BSRC and BCP's businesses</li> <li>Communication after the meeting has progressed and able to solve existing problems</li> </ol>	<ol style="list-style-type: none"> <li>Notify the policy to maintain the existing contracts with suppliers and contractors to build confidence with the oil transport contractors.</li> <li>Coordinate oil transport contractors to comply with the oil filling process together between the oil transport contractors and the BSRC service station.</li> <li>Organize work to be fair by considering work efficiency, sending cars according to the contract, workload according to the contract, and track the results in the KPI. meeting report of oil transport contractors</li> <li>Increasing backhaul transportation, such as receiving ethanol/B100 on the return trip to the oil depot.</li> </ol>	<ol style="list-style-type: none"> <li>Customers of both BCP and BSRC, as well as oil transport contractors, understand the format and process of working together</li> <li>Oil transport contractors receive fair job allocation according to work efficiency and can send vehicles according to the contract</li> </ol>	<ol style="list-style-type: none"> <li>Seamless delivery of oil to BSRC service stations, where customers and oil transport contractors of BCP and BSRC understand and can work together efficiently</li> <li>Oil transport contractors have warehouse transfer work as additional work, including backhaul transportation work, during the period when the delivery workload decreases according to sales volume</li> </ol>	<ol style="list-style-type: none"> <li>Plan to change the origin of the warehouse and delivery area after the consolidation of BCP and BSRC to be appropriate and achieve most value</li> <li>Discuss and change the logistic system to be clear and sustainable between BCP and BSRC oil transport contractors</li> </ol>
<b>2.3 Vessel transportation contractors</b>	<ol style="list-style-type: none"> <li>Regular direct and online communication</li> <li>Conduct KPI meetings with vessel transportation contractors every 3 months, including collaborative discussion on work methods</li> <li>Manage the vessel use appropriately</li> </ol>	<ol style="list-style-type: none"> <li>Long-term and short-term vessel transportation contracts</li> <li>Appropriate and competitive freight rates</li> <li>Controllable volume of oil loss during transportation (Oil Loss Control) according to the target</li> <li>No accidents and oil spills into the water source during oil transportation</li> <li>Collaboratively improve and develop safety and efficiency in vessel oil transportation</li> <li>Elevate the ship inspection standards to allow ships to dock with all ports</li> <li>Review the ship transportation plan to accommodate the expansion of the Bangchak group</li> </ol>	<ol style="list-style-type: none"> <li>Track the KPI together with the vessel oil transportation company every 3 months.</li> <li>Evaluate the performance of the vessel oil transportation contractors according to the Tanker Management and Self-Assessment (TMSA) system.</li> <li>Share information and guidelines for preventing oil loss, including accidents of oil transportation by ship.</li> <li>Follow up on improvements to oil transport ships in the contract.</li> </ol>	<ol style="list-style-type: none"> <li>Oil loss control according to following targets:                             <ul style="list-style-type: none"> <li>In transit Loss: Product &lt; 0.14% on B/L Crude &lt; 0.39% on B/L (Net Volume)</li> </ul> </li> <li>The number of Oil spill is 0</li> <li>The number of accidents during oil transportation is 0</li> </ol>	<ol style="list-style-type: none"> <li>Oil loss control according to following targets:                             <ul style="list-style-type: none"> <li>In transit Loss: Product 0.13% on B/L Crude 0.37% on B/L</li> </ul> </li> <li>The number of Oil spill is 0</li> <li>The number of accidents during oil transportation is 0</li> </ol>	<ol style="list-style-type: none"> <li>Regular direct and online communication</li> <li>Conduct KPI meetings with vessel transportation contractors every 3 months, including continuous discussion on work methods</li> <li>Prepare Vessel Utilization to control the number of ships to be utilized equally</li> <li>Develop transport ships to be able to dock everywhere.</li> <li>Continuously monitor the safety of oil transport ships</li> </ol>
<b>2.4 Procurement Suppliers Raw Material for Productions (Including oil/Biofuel suppliers)</b>	<ol style="list-style-type: none"> <li>Conduct a satisfaction survey</li> <li>Monthly meetings with Suppliers</li> <li>Regular meetups and conversations</li> </ol>	<ol style="list-style-type: none"> <li>Consistency in raw material procurement</li> <li>Fair and transparent procurement</li> <li>Providing information related to crude oil procurement that is beneficial to the seller</li> <li>Flexibility and smoothness in operation of receiving crude oil/ finished oil</li> <li>Timely payment for goods/services and document delivery</li> <li>Oil receipt and payment operations according to the plan/time, complete as scheduled</li> </ol>	<ol style="list-style-type: none"> <li>Consistently procure raw materials with transparent procurement process.</li> <li>Regularly share beneficial information with each other.</li> <li>Operate with flexibility and solve problems together.</li> <li>Take care of product payment according to the specified time.</li> <li>Perform oil receipt and payment operations on time.</li> </ol>	The suppliers' satisfaction assessment score is 3 out of 5	The supplier's satisfaction assessment score is 4.9 out of 5	Organize monthly meetings with suppliers

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<p><b>3. Customers</b>  <b>3.1 General Service</b>  <b>Station Customers</b>  <b>(End users)</b></p> 	<ol style="list-style-type: none"> <li>1. Conduct consumer research</li> <li>2. Conduct market research</li> <li>3. Customer behavior data from POS and CRM systems</li> <li>4. Data from the Department of Energy</li> <li>5. Customer service department</li> <li>6. Post-service survey via Mobile Application</li> </ol>	<ol style="list-style-type: none"> <li>1. Convenient location</li> <li>2. Fast service</li> <li>3. Polite and enthusiastic service</li> <li>4. High-quality oil that meets customer needs</li> <li>5. Clean and sufficient restrooms</li> <li>6. Convenient accesses and exits of service stations with enough parking</li> <li>7. Emergency plans and operational measures for various situations, and relief measures after incidents</li> <li>8. Support emergency relief measures for customers</li> </ol>	<ol style="list-style-type: none"> <li>1. Expand service stations in areas of demand, develop service stations with a unique design, and offer a variety of additional services.</li> <li>2. Improve service standards to be more agile.</li> <li>3. Implement technology to improve service, such as expanding payment channels with the Bangchak digital payment system to reduce the service time of employees, expand the customer membership base, and exchange points through partners, such as changing points into mutual fund units with SCBS.</li> <li>4. Train front-line employees through the Bangchak online academy, which provides easier access to training, to ensure that front-line employees perform according to the service procedure.</li> <li>5. Deliver high-quality oil products that are environmentally friendly continuously. Bangchak is the only one that has Euro 5 standard oil up to 32 types, namely E20 S EVO, Hi-Premium Diesel S, and Hi Premium 97.</li> <li>6. Develop service stations to extend offerings beyond oil, such as restaurants, Inthanin coffee shops, mini-marts, food stalls, food trucks, and other lifestyle businesses, such as pet food restaurants, transportation businesses.</li> <li>7. Expand businesses related to EV Car/Bike for service, such as EV Charging stationer and Swapping Battery Station, etc.</li> <li>8. Use customer data to develop suitable strategies for each customer group (Personalized Offerings), such as sending special promotions to missing members to stimulate them to return to use the service at service stations.</li> <li>9. Give importance to the personal data protection policy, including increasing the security level in exchanging points of Bangchak members by requiring customers to enter a code (PIN) during the point redemption process.</li> <li>10. Participate in helping to reduce the cost of living through various projects, such as offering a discount of up to THB2.5 per liter of gasoline according to government policy, "Payback on the Day of Gasoline Price Hike" in which members get extra points in the amount equivalent to the difference in oil price increase when filling up oil on the first day of price increase after paying the full amount of oil according to the new increased price, delayed oil price increase compared to competitors, etc.</li> <li>11. "Reduce the price of premium grade oil by THB 7 per liter" to allow customers to access high-quality products at affordable prices.</li> </ol>	<ol style="list-style-type: none"> <li>1. Have a market share of clear oil through service stations at 16.4%.</li> <li>2. Improvement in the satisfaction score of service station users from previous year</li> </ol>	<ol style="list-style-type: none"> <li>1. Have a market share of clear oil through service stations at 16.5%</li> <li>2. Customer Satisfaction Score from 3.85 in 2022 becomes 4.16</li> <li>3. The number of members gives an overall satisfaction score in the service through the Mobile Application average 4.42 / 5.0</li> <li>4. Develop new 58 service stations nationwide, including 13 additional unique design service stations, totalling 87 branches</li> <li>5. Develop Inthanin, both inside and outside service stations, accumulated a total of 1,020 branches</li> <li>6. Expand the EV Charger stations, with 265 charging stations and 890 charging ports installed</li> <li>7. Develop Non-Oil services in various formats in service stations, accumulated more than 4,390 Touchpoints</li> </ol>	<ol style="list-style-type: none"> <li>1. Expand service stations, both standard and Unique Design, to meet the needs of consumers</li> <li>2. Improve some existing service stations to be more ready in providing services</li> <li>3. Implement digital to improve customer experiences</li> <li>4. Develop and expand new non-oil business models with partners to meet the needs of consumers</li> <li>5. Organize continuous sales promotion events to meet the needs and expectations of consumers</li> </ol>
<p><b>3.2 Industrial customers</b></p>	<ol style="list-style-type: none"> <li>1. Customer Visit</li> <li>2. Meeting with customers in both online and on-site format</li> </ol>	<ol style="list-style-type: none"> <li>1. Developing products to align with customer needs</li> <li>2. Improving logistics management</li> <li>3. Enhancing service by providing technical support from the service team when customers encounter product usage issues</li> </ol>	<ol style="list-style-type: none"> <li>1. Developed additional solvent products, such as D80, Hexane, and BCP 80/100, complements the existing BCP White Spirit-3040 used in the paint industry. This expansion broadens the market reach to new customer segments.</li> <li>2. Developed and enhanced the Transportation Management System (TMS) to optimize the oil delivery process, ensuring punctuality and customer satisfaction.</li> <li>3. Provided online and on-site training sessions on product knowledge, particularly lubricants. Additionally, technical consultations were provided through online systems to enhance convenience, speed, and responsiveness to customer needs.</li> </ol>	<ol style="list-style-type: none"> <li>1. The market for solvent products expands, leading to increased sales volume</li> <li>2. The number of complaints regarding delivery decreases</li> <li>3. Sales volume increase</li> <li>4. The satisfaction from the service provided meets the standard at 90%</li> </ol>	<ol style="list-style-type: none"> <li>1. Sales of solvent products have increased by 16%</li> <li>2. Complaints regarding delivery have decreased by 40.51%</li> <li>3. Sales have increased</li> <li>4. Customer satisfaction rating is 93.91%, exceeding the set standard of 90%.</li> </ol>	<ol style="list-style-type: none"> <li>1. Improving sales in the international market</li> </ol>





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<b>3.3 Wholesale customers</b>	<ol style="list-style-type: none"> <li>Organizing seminars for the subgroups of customers of distributors to instill confidence in the quality and standards of the products</li> </ol>	<ol style="list-style-type: none"> <li>Communicating product knowledge and developing new marketing formats to support market expansion</li> <li>Organizing sales promotion events and establishing competitive pricing</li> <li>Creating flexibility in payment methods and fund transfers</li> </ol>	<ol style="list-style-type: none"> <li>The technical service team provided product knowledge training to support customer sales.</li> <li>Seminars on new marketing strategies were organized, along with sales promotion activities such as the implementation of a Loyalty program targeting specific customer groups to boost sales.</li> <li>Promotional campaigns were conducted as discussed with customers, including monthly or quarterly discounts, and annual discounts when customers achieved their purchasing targets, encouraging continuous buying and expanding the range of products sold.</li> </ol>	<ol style="list-style-type: none"> <li>Sales volume or market share is increasing compared to the previous year</li> </ol>	<ol style="list-style-type: none"> <li>Lubricant oil sales increased by 7.77% compared to 2022.</li> <li>Lubricant oil market share increased by 1.23% (from 10.20% in 2022 to 11.42% in 2023).</li> </ol>	<ol style="list-style-type: none"> <li>Adjusting the existing stock keeping unit products to be more suitable</li> <li>Increasing sales of the Automotive product group, both in quantity and sales proportion</li> </ol>
<b>4. Service Station Operators</b> 	<ol style="list-style-type: none"> <li>Marketing representatives</li> <li>Monthly / Quarterly / Annual meetings</li> <li>BCP Link system</li> <li>Mystery Shopper</li> <li>Call center system</li> <li>Data from the Department of Energy</li> <li>Bangchak online academy</li> </ol>	<ol style="list-style-type: none"> <li>Improved business performance (business operations for profit and growing revenues)</li> <li>Monitoring of MR</li> <li>Support and monitor the standards of service stations to be competitive (modern pump management system)</li> <li>Efficient equipment repair</li> <li>Effective sales promotion programs and advertising (demand for the development of marketing tools)</li> <li>Development of high-quality products (delivery of quality products to service stations)</li> <li>Timely, complete, and non-loss oil delivery service</li> <li>Emergency plans and operational measures for various situations</li> <li>Ability to continue providing services during emergencies</li> <li>Relief measure after incidents</li> <li>Place importance on the strategy to promote collaboration</li> </ol>	Develop the potential of operators for development Business results as follows: <ol style="list-style-type: none"> <li>Maintain product quality to compete with competitors and push the sale of products that meet market needs</li> <li>Support and monitor the standards of service stations to be competitive.</li> <li>Support the improvement of service station image, such as Renovate, Bright and Clean, and Refresh.</li> <li>Continuously organize sales promotion events to stimulate sales in each customer group, such as water giveaway, point exchange for gold, etc.</li> <li>Provide support money to motivate operators to maintain image and service standards.</li> <li>Develop a tracking system for oil transportation trucks for customers to track and prevent corruption in transportation.</li> <li>Organize sales promotion events to push sales to operators when customer demand decreases.</li> </ol>	<ol style="list-style-type: none"> <li>Have a market share of clear oil through service stations at 16.4%</li> <li>Improvement in the satisfaction score of service station users from previous year</li> <li>The score assessed by Mystery Shopper passing the standards (BGN 90%, Dealer 75%)</li> </ol>	<ol style="list-style-type: none"> <li>Have a market share of clear oil through service stations at 16.5%</li> <li>Retail business sales increased by +3.0% from previous year</li> <li>The number of members gives an overall satisfaction score in the service through the Mobile Application average 4.42 / 5.0</li> <li>Expand Inthanin inside service stations, accumulated total of 636 branches</li> <li>Expand the EV Charger stations, with 265 charging stations and 890 charging ports installed</li> <li>Develop non-oil services in various formats in service stations, accumulated more than 4,390 Touchpoints</li> <li>The score assessed by Mystery Shopper passing the standards (BGN 92%, Dealer 76%)</li> </ol>	<ol style="list-style-type: none"> <li>Develop and expand new non-oil business models with partners to increase revenue and optimize the utility from rental area</li> <li>Support the improvement of service station image to attract consumers</li> <li>Continuously organize sales promotion events</li> <li>Organize activities to stimulate sales with operators, such as giving rewards and incentive</li> <li>Increase courses and the frequency of training in the E-Training system according to the needs of operators</li> </ol>
<b>5. Competitors (Service Stations)</b> 	<ol style="list-style-type: none"> <li>Follow up on business results, market conditions from the data of the Department of Energy</li> <li>Study competitor data through financial reports and present to relevant persons</li> <li>Follow news and marketing activities from various media, including social media</li> <li>Cooperate and coordinate with competitors on issues that the government requests cooperation</li> <li>Provide market information that does not affect competitors</li> </ol>	<ol style="list-style-type: none"> <li>Conduct business transparently under fair trade and competition</li> <li>Provide support to competitors during emergencies that affect competitors</li> </ol>	Conduct business under free market competition and comply with laws and regulations related to business operations correctly and transparently.	<ol style="list-style-type: none"> <li>No negative complaints or news in doing business with competitors</li> <li>No complaints from competitors in the part of unfair business operations.</li> </ol>	<ol style="list-style-type: none"> <li>No negative complaints or news in doing business with competitors</li> <li>No complaints from competitors in the part of unfair business operations.</li> </ol>	Conduct business under free market competition and comply with laws and regulations related to business operations correctly and transparently

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<b>6 Creditors (Loans, Bonds, Bank Loans)</b> 	1. Interactive through phone calls, emails, or conference calls, roadshow, and seminars organized by financial institutions	1. Business stability in abnormal conditions with established plans to cope with the situations, including risk mitigation plans 2. Good business performance, higher returns (Capital Gain), and a continuous and stable growth 3. Clear future business expansion goals and directions of the Company, and invest in businesses that provide appropriate returns 4. Conduct business according to the sustainable development guidelines with good corporate governance principles 5. Provide knowledge and understanding about the important factors that affect business operations by disclosing additional information 6. Participate in company visit activities	1. Strictly comply with the terms of loan and bond contracts. 2. Strictly comply with the rules of financial institutions which are supervised by government agencies. 3. Answer questions/provide information to bank credit analysts when there are doubts correctly and quickly. 4. Coordinate/cooperate with financial institutions to allow them to present various financial services. 5. Do not object new financial institutions to provide financial services.	1. Maintain financial ratios to be within the conditions of loan/bond contracts 2. Provide complete information/answer to questions from financial institutions	1. Financial ratios remained within the conditions specified on loan/bond contracts 2. Provide complete information/answer to questions from financial institutions	1. Continuing in organizing meetings to update and exchange information of the Company and financial institutions to have latest quantitative information for creditors to assess the direction of business development 2. Participate in seminars or training with financial institutions 3. Provide feedback to creditors via phone, questionnaire, and others
<b>7. Investors (Institutional Investors, Retail Investors, Analysts, and ESG Rating Agencies)</b> 	1. Annual shareholders' meeting 2. Quarterly analyst meetings 3. Investor relations activities such as Roadshows and Conference calls 4. Disclosure of information, answering questions, and listening to suggestions through various channels of the Company (website, email, and phone) 5. Disclosure of information through the Stock Exchange of Thailand ("SET") and participation in activities organized by the SET, such as SET Opportunity Day 6. Disclosure of information to ESG Rating Agency through answering questionnaires or assessment in ESG aspect	1. Good business performance and a continuous and stable growth 2. Have a plan to deal with rapidly changing business environment and economic context, including risk management plans 3. Clear future business expansion goals and directions of the Company, and invest in businesses that provide appropriate returns 4. Dividend payment at a satisfactory level and on a regular basis 5. Opportunity to provide higher returns (Capital Gain) 6. Development of various projects according to the plan 7. Conduct business with responsibility according to the sustainable development guidelines 8. Disclose material information related to the Company correctly, transparently, and timely, and giving importance to disclosing more material information 9. Provide knowledge and understanding about the important factors that affect business operations 10. Participate in company visit activities 11. Give importance and disclose information according to ESG rating criteria to support decision-making for investment	1. The Company intends to pay dividends to shareholders appropriately with the business performance and policy, and the dividend payout ratio is close to other companies in the same business. 2. The Company's executives provide information on business performance and answer questions to analysts, investors, and shareholders through meetings and various activities such as shareholders' meetings, quarterly analyst meetings, etc. 3. Change the communication channels with shareholders, investors, and analysts by utilizing more of Virtual communication through Online Meeting / Video Conference, to allow the Company in continuing to organize various activities and communication with investors in all situations. 4. Participate in activities organized by the SET, namely Opportunity Day and Thailand Focus, to give executives the opportunity to meet with individual investors. 5. Improve the investor relations page to be modern, with complete information that is easy to use, and give importance in disclosing material information related to the Company on the website quickly and timely. 6. Prepare documents to disclose information, both in Thai and English, such as MD&A / Factsheet / Company Profile for shareholders and investors every quarter. 7. Prepare a report summarizing questions and various comments received from shareholders, investors, and analysts, and report to the executives regularly. 8. Answer the assessment and disclose ESG information as requested by investors or shareholders.	1. Organize an on-site analyst meeting at least once a year to open opportunities for analysts and investors to meet and discuss with executives directly 2. Receive Roadshow or Conference invitation at least once a quarter 3. Receive a request for a Conference call 4. Receive awards in investor relations from credible agencies 5. Be evaluated or ranked by independent external agencies that reflect that the Company is a quality and sustainable security, such as THSI, S&P Global CSA, and MSCI	1. Received invitations and participated in Roadshow and Conference both domestically and internationally more than 10 times in 2023 2. Received awards in investor relations, namely SET Best Investor Relations Awards, Asian Excellence Award for 2023 for 6 awards comprising Asia's Best CEO (Investor Relations), Asia's Best CFO (Investor Relations), Best Investor Relations Professional, Asia's Best CSR, Best Environmental Responsibility, and Best Investor Relations Company	1. Organize a quarterly analyst meeting to announce the Company's performance and prepare a Webcast of the meeting, along with English translation, published on the Company's investor relations website, to support the right of all investor groups to access information without discrimination 2. Organize/join activities that promote investors to access information and understand more on the Company's businesses, such as Company Visit activities 3. Participate in Roadshow and Conference with investors regularly, both Online and On-Site (when the situation is conducive) 4. Participate in Opportunity Day activities organized by the SET every quarter to give executives the opportunity to meet with individual investors 5. Emphasize on the correctness of information and the timing of information disclosure through various channels, especially the Company's website 6. Improve the disclosure of information through various documents such as MD&A / Factsheet / Company Profile in the format that is be easy to understand and covers all topics 7. Prepare a report summarizing questions and various comments received from shareholders, investors, and analysts, and report to the executives regularly

Stakeholder Group	Key Engagement Approaches in 2023	Expectations/Needs of Stakeholders in 2023	The Company's Responses in 2023	Response Target in 2023	Results in 2023	Activity Plan for 2024
<p>8. <b>Bangchak's Neighbors</b>                      8.1 <b>Nearby communities (1.5 kilometers radius, covering 8 communities in Phra Khanong district, 1 community in Bang Na district, and 11 villages in Bang Nam Phueng Subdistrict, Phrapradaeng District, Samut Prakarn)</b></p> 	<ol style="list-style-type: none"> <li>Community relations employees / local visits</li> <li>Community relations activities and access to target groups</li> <li>Channels for communication / complaints                             <ol style="list-style-type: none"> <li>Direct telephone lines / 24-hour Call Center</li> <li>Public announcement board</li> <li>Audio transmission through public broadcasting</li> <li>LINE community group</li> <li>Leaflets / brochures / banners</li> </ol> </li> <li>Evaluation of community relations activities</li> <li>Assessment of community needs by a Third Party</li> </ol>	<ol style="list-style-type: none"> <li>Have strategies and operate the business with safety, and give importance to the environment and the impact that may occur to the community, which affects the Company's image and acceptance, in order to inspire communities' trust, which allows the Company to continue to operate (License to operate)</li> <li>Notify the community in advance before taking any action that may have an impact or cause misunderstanding in the communities</li> <li>Participate in community relations activities:                             <ol style="list-style-type: none"> <li>Education development</li> <li>Quality of life development</li> <li>Economic development</li> <li>Environmental development in the community</li> <li>Safety development</li> </ol> </li> <li>Continuous support / care in both health and economic aspects after the COVID-19 outbreak situation eased</li> </ol>	<ol style="list-style-type: none"> <li>Adjust the format of activities to be aligned and consistent with situations, environments, and current community needs.                             <ul style="list-style-type: none"> <li>Continuing to carry out activities and return to the normal format prior to COVID-19 according to the needs of the target community group per the results of the 2022 needs assessment of 95.5%.</li> <li>The Bangchak Huang Yai Su Phai COVID-19/PM2.5 supported the donation of medical face masks and children's face masks.</li> </ul> </li> <li>Support the education of young people in the community through the Bangchak Youth Scholarship Project to alleviate the burden of parents / community from the inflation and continuing economic stagnant situations.</li> <li>Support / promote proactive life and preventive healthcare in the community.                             <ul style="list-style-type: none"> <li>Organize "Healthy Community" project by collaborating with a private hospital in the area, namely Rama Rak Hospital, in providing health checks for people in the community around the oil refinery.</li> <li>Organize "Elderly with Online Heart" project / event by providing knowledge about the use and safety from technology and online media to the elderly in the community to have knowledge and be able to apply in daily life.</li> </ul> </li> <li>Support / promote the economy and generate recurring income for the community.                             <ul style="list-style-type: none"> <li>Bangchak supports a career profession and develops the skill of making Thai desserts for the community around the refinery to create jobs, careers, and generate income for the community to promote income recovery amid the stagnant economic recovery after the COVID-19 situation eased.</li> <li>Support / subsidize products / services from the community to use in the Company's projects / activities continuously, creating more than THB 1,000,000 baht of income to the community.</li> </ul> </li> <li>Environmental and biodiversity promotion projects, including the "Phuet Phan Pan Suk Ruam Pluk Ton Mai Project" (areas in Phra Khanong district, Bang Na district, and Bang Nam Phueng) and support the conservation of firefly / firefly surveys by local research teams / World Firefly Day Kung Bang Kachao in 2023 with over 300 participants, and support the Bang Nam Phueng Large Farm Stingless Beekeeper Group / World Bee Day and the competition for stingless bee hives in 2023 with over 300 participants, generating income for the group / community of more than THB 300,000.</li> <li>Build good and sustainable relationships with the community through participatory development:                             <ul style="list-style-type: none"> <li>Set up a committee to develop environmental quality and social activities.</li> <li>Organize a meeting between the Environmental Quality Improvement and Social Activities Development Committee and the community committee to present the plan and listen / discuss for development together in the future.</li> <li>Organize Bangchak Open House activities to get to know and visit the Company and Bangchak refinery.</li> <li>Organize community trip committee / community trip activities, which includes off-site studies and training (search for community identity) to develop the community and build good relationships between the community and the Company.</li> </ul> </li> <li>Support / promote preventive / proactive safety for the community, carry out equipment inspection activities and support the preparation of safety readiness in the community continuously, such as evacuation plan drills in case of emergency / disaster, safety inspection project, support fire extinguishers to the community, etc.</li> <li>Communicate the work plan to the community in advance in all communication channels, such as public announcement boards, LINE, leaflets / brochures / banners, etc.</li> </ol>	<ol style="list-style-type: none"> <li>Result of the satisfaction assessment by questionnaires provided to activity participants: <math>\geq 90\%</math></li> <li>Result of the community engagement assessment: <math>\geq 88\%</math></li> </ol>	<ol style="list-style-type: none"> <li>Result of the satisfaction assessment by questionnaires from participating in activities: is 96.40%</li> <li>Result of the community engagement assessment is 88.20%</li> </ol>	Develop activity plan to align with the community needs in 7 areas: <ul style="list-style-type: none"> <li>Quality of Life</li> <li>Education</li> <li>Environment</li> <li>Safety</li> <li>Economy</li> <li>Relationships</li> <li>Public Benefits</li> </ul>

Stakeholder Group	Key Engagement Approaches in 2023	Expectations/Needs of Stakeholders in 2023	The Company's Responses in 2023	Response Target in 2023	Results in 2023	Activity Plan for 2024
			9. Support, take care of, and participate in activities / public benefits within the community, such as supporting important day activities (New Year's Day, Children's Day, Songkran Day, Mother's Day) and other activities such as repairing lights, cutting trees, improving community multipurpose rooms, improving various project signs within the community, improving and constructing steel structure roofs for compost machines, supporting elderly club shirts, supporting safety checkpoints during festivals, etc..			
<b>8.2 School Groups</b>	<ol style="list-style-type: none"> <li>1. Community relations employees / local visits</li> <li>2. Community relations activities and access to target groups</li> <li>3. Channels for communication / complaints                             <ol style="list-style-type: none"> <li>3.1 Direct telephone lines / 24-hour Call Center</li> <li>3.2 Public announcement board</li> <li>3.3 Audio transmission through public broadcasting</li> <li>3.4 LINE community group</li> <li>3.5 Leaflets / brochures / banners</li> </ol> </li> <li>4. Evaluation of community relations activities</li> <li>5. Assessment of community needs by a Third Party</li> </ol>	<ol style="list-style-type: none"> <li>1. Have strategies and operate the business with safety, and give importance to the environment and the impact that may occur to the schools, which affects the Company's image and acceptance, in order to inspire the schools' trust, which allows the Company to continue to operate (License to operate)</li> <li>2. Support the development of education in various aspects, such as the capability of personnel / students in the schools, support technology / teaching media, etc.</li> <li>3. Support the development of the surrounding and environment both inside and outside the schools, provide knowledge and create a network in the environment / environmental management for teachers - students and schools</li> <li>4. Support safety, provide knowledge on coping with emergency situations / disasters, basic self-help and others, support fire extinguisher equipment, etc.</li> <li>5. Continuous support / care in both health and economic aspects after the COVID-19 outbreak situation eased</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the format of activities to be aligned and consistent with situations, environments, and current school needs:                             <ul style="list-style-type: none"> <li>- Continuing to carry out activities and return to the normal format prior to COVID-19 according to the needs of the target school group per the results of the 2022 needs assessment of 91.5%.</li> <li>- The Bangchak Huang Yai Su Phai COVID-19/PM2.5 supported the donation of medical face masks and alcohol hand sanitizers / cleaning for schools .</li> </ul> </li> <li>2. Support the education of young people in the community through the Bangchak Youth Scholarship Project to alleviate the burden of parents / community from the inflation and continuing economic stagnant situations.</li> <li>3. Operate a project to develop the capability of teachers and schools and returning to on-site training, beginning with the Pre-STEM Activities curriculum to support long-term projects to be implemented in 2024.</li> <li>4. Organize environmental projects, Eco-School Environmental Education project, Environmental Education Curriculum in Schools (Online), Ruk Pun Suk Junior project, waste management and waste bank in all school systems, The Green Shelter Project for the Friend of Pa Foundation which involves collecting cleaned UHT boxes and recycle into construction materials for people affected by natural disasters and those in need, and the Waste Orphan project which involves reducing sources of waste in schools by separating and disposing in the right way to reduce air pollution from landfill according to the waste management direction of Circular Economy.</li> <li>5. Operate a safety project "Bangchak Huang Yai Plot Phai Nai Rong Rian" (fire extinguishing and fire escape drills with schools, return to 100% on-site arrangement) and additional basic first aid training courses, basic CPR, and the use of AED machine as another additional course, which are the need of the Bangkok Metropolitan Administration Office and schools for the safety of students and school personnel, from the lessons learned from the Itaewon incident in South Korea, and support fire extinguishers for schools as appropriate.</li> <li>6. Organize projects / activities Dek Show Ded Festival@ Phrakhanong, Bangna in collaboration with network partners in the area, such as large shopping centers including 101 True Digital Park and Megabangna, and government agencies including Phra Khanong District Office, Bang Na District Office, and offer a space for students around Bangchak oil refineries to show their abilities in music, performance, and culture, etc.</li> <li>7. Support, take care of, and participate in activities / public benefits inside / outside the school, such as supporting important day activities (New Year's Day, Children's Day) and other activities such as supporting the improvement of multipurpose buildings, sports uniforms, student sports events, Bangkok Metropolitan Administration Office, supporting budget for Open House activities, supports to schools / various projects that work together to set up outdoor activity booths, sports event, and various activities within the school, etc.</li> </ol>	<ol style="list-style-type: none"> <li>1. Result of the satisfaction assessment by questionnaires provided to activity participants: ≥90%</li> <li>2. Result of the school engagement assessment: ≥88%</li> </ol>	<ol style="list-style-type: none"> <li>1. Result of the satisfaction assessment by questionnaires provided to activity participants: 94%</li> <li>2. Result of the school engagement assessment: 92%</li> </ol>	Develop activity plan to align with the school needs in 7 areas: <ul style="list-style-type: none"> <li>- Quality of Life</li> <li>- Education</li> <li>- Environment</li> <li>- Safety</li> <li>- Economy</li> <li>- Relationships</li> <li>- Public Benefits</li> </ul>

Stakeholder Group	Key Engagement Approaches in 2023	Expectations/Needs of Stakeholders in 2023	The Company's Responses in 2023	Response Target in 2023	Results in 2023	Activity Plan for 2024
<b>8.3 Family Group (Detached House Group)</b>	<ol style="list-style-type: none"> <li>Community relations employees / local visits</li> <li>Community relations activities and access to target groups</li> <li>Channels for communication / complaints                             <ol style="list-style-type: none"> <li>Direct telephone lines / 24-hour Call Center</li> <li>Public announcement board</li> <li>Audio transmission through public broadcasting</li> <li>LINE community group</li> <li>Leaflets / brochures / banners</li> </ol> </li> <li>Evaluation of community relations activities</li> <li>Assessment of community needs by a Third Party</li> </ol>	<ol style="list-style-type: none"> <li>Have strategies and operate the business with safety, and give importance to the environment and the impact that may occur to the target group, which affects the Company's image and acceptance, in order to inspire the community's trust, which allows the Company to continue to operate (License to operate)</li> <li>Support quality of life, such as supporting knowledge in physical health, mental health, and other areas that are beneficial and necessary for daily life, continuous support / care after the situation of the spread of COVID-19 has eased, etc.</li> <li>Support the environment, such as providing environmental / environmental knowledge to neighbors, conservation activities, inspire environmental consciousness that can be done or participated easily by oneself, being a medium to promote or support environmental development projects to improve, etc.</li> </ol>	<ol style="list-style-type: none"> <li>Adjust the format of activities to be aligned and consistent with situations, environments, and current target group needs:                             <ul style="list-style-type: none"> <li>Continuing to carry out activities and return to the normal format prior to COVID-19 according to the needs of the target community group per the results of the 2022 needs assessment of 98.5%.</li> <li>Organize activities to support various necessary items, such as foldable cloth bags, eco-friendly food boxes, eco-friendly water bottles, portable folding umbrellas, etc., alternating with useful Workshop activities such as online elderly projects / activities, training to provide knowledge about the use and safety from technology and online / social media to the elderly in the family group to have knowledge and be able to apply in daily life, tree planting activities in the garden which involves simple tree planting methods to increase green space for the house and help purify the air, activities to provide knowledge in self-protection from respiratory diseases that may occur due to PM 2.5 dust problems, etc.</li> </ul> </li> <li>Clearly communicate with target group through Krob Krua Bai Mai (Leaf Family) Newsletter and Krob Krua Bai Mai Bangchak Facebook page.</li> </ol>	<ol style="list-style-type: none"> <li>Result of the satisfaction assessment by questionnaires provided to activity participants: ≥90%</li> <li>Result of the family group engagement assessment: ≥88%</li> </ol>	<ol style="list-style-type: none"> <li>Result of the satisfaction assessment by questionnaires provided to activity participants: 98.20%</li> <li>Result of the family group engagement assessment: 86.80%</li> </ol>	Develop activity plan to align with the family group needs in 7 areas: <ul style="list-style-type: none"> <li>- Quality of Life</li> <li>- Education</li> <li>- Environment</li> <li>- Safety</li> <li>- Economy</li> <li>- Relationships</li> <li>- Public Benefits</li> </ul>
<b>8.4 Condominium</b>	<ol style="list-style-type: none"> <li>Community relations employees / local visits</li> <li>Community relations activities and access to target groups</li> <li>Channels for communication / complaints                             <ol style="list-style-type: none"> <li>Direct telephone lines / 24-hour Call Center</li> <li>Public announcement board</li> <li>Audio transmission through public broadcasting</li> <li>LINE community group</li> <li>Leaflets / brochures / banners</li> </ol> </li> <li>Evaluation of community relations activities</li> <li>Assessment of community needs by a Third Party</li> </ol>	<ol style="list-style-type: none"> <li>Have strategies and operate the business with safety, and give importance to the environment and the impact that may occur to the target group, which affects the Company's image and acceptance, in order to inspire the community's trust, which allows the Company to continue to operate (License to operate)</li> <li>Support quality of life, such as supporting knowledge in physical health, mental health, and other areas that are beneficial and necessary for daily life, continuous support / care after the situation of the spread of COVID-19 has eased, etc.</li> <li>Support the environment, such as providing environmental / environmental knowledge to neighbors, conservation activities, inspire environmental consciousness that can be done or participated easily by oneself, being a medium to promote or support environmental development projects to improve, etc</li> <li>Support safety, such as organizing training in necessary and beneficial safety areas, providing knowledge and understanding of environmental impact prevention measures, safety of Bangchak, and building confidence between each other, etc.</li> <li>Organize activities appropriately and continuously</li> <li>Develop the format of public relation activities announcement to cover more target groups</li> <li>Continuing to support / care in both health and economic aspects after the situation of the spread of COVID-19 has eased</li> </ol>	<ol style="list-style-type: none"> <li>Adjust the format of activities to be aligned and consistent with situations, environments, and current target group needs:                             <ul style="list-style-type: none"> <li>Continuing to carry out activities and return to the normal format prior to COVID-19 according to the needs of the target community group per the results of the 2022 needs assessment of 78%.</li> <li>The Bangchak Huang Yai Su Phai COVID-19 supported the donation of medical face masks.</li> <li>The Bangchak Huang Yai Sai Jai Phuen Ban Condo supported various necessary items, such as New Year's calendar, foldable cloth bags, eco-friendly food boxes, portable folding umbrellas, etc.</li> <li>Organize fire extinguishing / emergency plan and fire escape drills, with additional content in 2023 covering basic first aid, Basic CPR and the intensive use of AED equipment to match the needs and current situation that are more aware of life-saving from respiratory arrest.</li> <li>Support necessary and beneficial activities of the condo according to the needs continuously, such as the annual general meeting, etc.</li> </ul> </li> <li>Communicate news / activities through channels that the target group can conveniently and regularly access, such as:                             <ul style="list-style-type: none"> <li>LINE Phuen Ban Bang Chak (Bang Chak Neighbors)</li> <li>Krob Krua Bai Mai (Leaf Family) Newsletter</li> <li>Poster</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>Result of the satisfaction assessment by questionnaires provided to activity participants: ≥90%</li> <li>Result of the Condominium group engagement assessment: ≥88%</li> </ol>	<ol style="list-style-type: none"> <li>Result of the satisfaction assessment by questionnaires provided to activity participants: 96.60%</li> <li>Result of the Condominium group engagement assessment: 91.20%</li> </ol>	Develop activity plan to align with the condominium group needs in 7 areas: <ul style="list-style-type: none"> <li>- Quality of Life</li> <li>- Education</li> <li>- Environment</li> <li>- Safety</li> <li>- Economy</li> <li>- Relationships</li> <li>- Public Benefits</li> </ul>

Stakeholder Group	Key Engagement Approaches in 2023	Expectations/Needs of Stakeholders in 2023	The Company's Responses in 2023	Response Target in 2023	Results in 2023	Activity Plan for 2024
<b>9. Mass Media (Newspaper, Magazines, Television, Radio, Online Media)</b> 	<ol style="list-style-type: none"> <li>1. Explore needs/expectations from conversations with the media</li> <li>2. Meet and visit the media on various special occasions and quarterly</li> <li>3. Arrange special interviews on various occasions as requested by the media, appropriately by the high-level management responsible for each work group</li> <li>4. Add appropriate content to respond to online media and expand the target group.</li> <li>5. Support budget / Inthanin beverages in various special events and occasions.</li> </ol>	<ol style="list-style-type: none"> <li>1. Information on business development, business information in general, as well as growth and expansion plans related to the business</li> <li>2. Appointment of special interviews with senior executives beyond normal press conferences to get specific points that the media wants to cover and presented as unique news from other media</li> <li>3. Need for having senior executives to be the information providers and show visions in the energy business and related businesses to provide credibility in the news and create motivation in following the news</li> <li>4. Need for interesting news footages</li> <li>5. Need for a quick and correct response, such as requesting information, requesting interviews, etc.</li> </ol>	<ol style="list-style-type: none"> <li>1. Respond to the needs of the media in all matters that are beneficial to the Company and the public.</li> <li>2. Organize press releases and media interviews, including Online format, to be adaptable with the situation, and regularly prepare the Press Release.</li> <li>3. Support the activities of the mass media that are for the common good and support on the anniversary of the media.</li> <li>4. Visit the media in the energy business line and related lines regularly, including participating in various situations such as illness, childbirth, death.</li> </ol>	<ol style="list-style-type: none"> <li>1. The value of news disseminated through print media and online media</li> <li>2. The number of media attending the press conference</li> <li>3. The number of news disseminated</li> <li>4. The quality of the disseminated news is correct and complete</li> </ol>	<ol style="list-style-type: none"> <li>1. The Company's news has been disseminated in various media regularly, showing that the work with the mass media is appropriate and committed</li> <li>2. The value of news disseminated through print media (Media Value) and online media aligns with the target</li> <li>3. News information is disseminated correctly and completely</li> </ol>	<ol style="list-style-type: none"> <li>1. Organize activities to engage with the mass media to promote a closer relationship (adjust as appropriate according to the situation)</li> <li>2. Add new media databases and foreign media in Thailand and the Asia region, including preparing English-language press releases paired with Thai news so that media and interested foreigners are informed</li> </ol>
<b>10. Government Agencies</b> <b>10.1 Local Government Agencies</b> 	<ol style="list-style-type: none"> <li>1. Consolidation and exchange of knowledge by inviting public officers for company visits.</li> <li>2. Integrated cooperation with government agencies on environmental projects or work improvement projects to promote efficiencies, such as the Beautiful Khlong, Clear Waters Campaign, etc.</li> </ol>	<ol style="list-style-type: none"> <li>1. Compliance with the law or better than what the law stipulates in terms of air pollution, waste management or treatment, and wastewater discharge.</li> <li>2. Responsibility to society and the environment, sustainable coexistence with the community.</li> <li>3. Good safety and environmental management system of the factory.</li> <li>4. Comprehensive safety measures which can act quickly and immediately.</li> <li>5. Cooperate in providing correct and timely information and support government agency projects.</li> <li>6. Allow the opportunities for stakeholders to participate in expressing opinions.</li> </ol>	<ol style="list-style-type: none"> <li>1. Comply with laws, regulations, and regulations related to business operations correctly and transparently.</li> <li>2. Check the work of various departments within the Company to ensure correctness and transparency as stipulated by law through the Legal Assessment and SHEE Audit project.</li> <li>3. Control environmental quality at higher standards than the one required by laws.</li> <li>4. Clarify or submit correct information to government agencies within the specified time and support correct and timely information in case of emergency.</li> <li>5. Cooperate with the state sector in promoting environmentally friendly projects.</li> </ol>	<ol style="list-style-type: none"> <li>1. Government agencies approve the project that the Company has requested for a new permit, including the continuing permission of existing permits to allow for continued operations.</li> <li>2. Control air quality and wastewater quality within the standard.</li> </ol>	<ol style="list-style-type: none"> <li>1. Comply with laws and regulations related to business operations completely.</li> <li>2. Continuous pushing to maintain the quality of the projects that already achieved higher standards than the one set by laws.</li> </ol>	<ol style="list-style-type: none"> <li>1. Exchange of knowledge by inviting government officials for company visits.</li> <li>2. Integrated cooperation with government agencies on environmental projects or work improvement projects to promote efficiencies, such as the Beautiful Khlong, Clear Waters Campaign, etc., as well as collaborative projects with other factories in the Phra Khanong area to develop a green industry network according to the policy of the Department of Industrial Works.</li> </ol>
<b>10.2 Central Government Agencies</b>	<ol style="list-style-type: none"> <li>1. Meet, explain, discuss and participate in government agency projects</li> <li>2. Government agencies answering the survey of government agency needs / expectations</li> <li>3. Participate in training, seminars, exchange of legal knowledge organized by government agencies</li> </ol>	<ol style="list-style-type: none"> <li>1. Comply with the law and obligations completely</li> <li>2. Cooperate in providing correct and timely information and support government agency operations</li> </ol>	<ol style="list-style-type: none"> <li>1. Comply with laws, regulations, and regulations related to business operations correctly and transparently.</li> <li>2. Check the work of various departments within the Company to ensure correctness and transparency as stipulated by law through the Legal Assessment and SHEE Audit project.</li> <li>3. Clarify or submit correct information to government agencies within the specified time and support correct and timely information in case of emergency.</li> </ol>	<ol style="list-style-type: none"> <li>1. Government agencies cooperate and support various operations that require contact with government agencies, such as registration and request or renewal of various permits related to the Company's business.</li> </ol>	<ol style="list-style-type: none"> <li>1. Comply with laws and regulations related to business operations completely.</li> <li>2. Continuous pushing to maintain the quality of the projects that already achieved higher standards than the one set by laws.</li> </ol>	<ol style="list-style-type: none"> <li>1. Participate in training, seminars, exchange of legal knowledge organized by government agencies, such as commenting on the bill.</li> <li>2. Joint consultation with government agencies in case of joint project implementation.</li> </ol>

# Identification of Materiality Topics

The Company conducts business with an inclusive and sustainable approach, responsive to the needs and expectations of stakeholders. Simultaneously, we strive to create social and environmental value. Consequently, we annually review and enhance key sustainability issues to align with global sustainability trends. This process involves selecting critical topics through consultation with various stakeholder groups, including external experts. Our reference point is the international reporting standard framework, GRI Standards 2021.

## Materiality Determination Process (Disclosure 3-1)

### 1. Understand the Organization's Context

The Company assesses organizational sustainability issues based on both internal and external data that may impact long-term business value creation and the economic, environmental, and social well-being of stakeholders including human rights aspect. The internal and external factors included in the analysis include:

- **Internal Data** : This involves organizational objectives, value chain considerations, strategic planning, and key topics identified top management brainstorming workshops and Enterprise Risk Management (ERM) efforts that might impact the short- and long-term sustainability of the organization.
- **External Data** : We review global sustainability trends and risks, including Sustainable Development Goals (SDGs), Sustainability Accounting Standards Board (SASB) reporting standards, and the Global Reporting Initiative (GRI Standards 2021). We also consider global sustainability assessments by S&P Global Sustainability Assessment, Morgan Stanley Capital International (MSCI) indices, the Stock Exchange of Thailand's Sustainability Index (SETTHSI), industry peers' critical issues, and stakeholder engagement expectations.

### 2. Identify Impacts and Prioritize the Most Significant Topics

The Company aggregates sustainability topics of significant relevance to the organization, and benchmarks the KPIs from the GRI Standards 2021 and Double Materiality Principle to come up with the material factors, while having the criteria as follows:

- 2.1 Identifying cause and effect that has occurred before and is being anticipated positively or negatively in the future with in the sustainability framework (economy, environment, and society including human rights topic).
- 2.2 Considering the prioritization by severity and likelihood of each factor, while being aligned with the Enterprise Risk Management .
- 2.3 Summarizing the material topics, and comparing with the feedbacks and opinions from internal/external stakeholders, experts, and GRI 11: Oil and Gas Sector 2021 to ensure that the topics the Company has identified are covered fully while being reasonable. Moreover, the process of identifying the material topics will be verified by the third party.

### 3. Implement

Sustainability issues derived from analysis, prioritization, and grouping undergo scrutiny and receive approval from the Sustainability Policy Committee (SPC), chaired by top-level executives, and the Sustainability and Corporate Governance Committee (SCGC). Additionally, we establish performance indicators to assess organizational outcomes, linking them to the practices of the Group Chief Executive Officer and President, management level, and related employees appropriately. This approach fosters a culture of sustainability.

In 2023, significant material topics underwent transformation, including the addition of new risks. These encompass Energy Accessibility, Land and resource rights, and Anti-Competitive Behaviors. These align with global sustainability trends, including GRI Sector Standards, which warrant attention. The impact of these issues can be both positive and negative for stakeholders.

## List of Materiality Topics (Disclosure 3-2)

### Economic



1. Sustainability Innovation and Investment
2. Quality of Products and Services
3. Corporate Governance and Ethics
4. Sustainable Supply Chain
5. Digital Transformation and Cybersecurity
6. Customer Relationship
7. Anti-Competitive Behaviors

### Social



1. Occupational Health and Safety
2. Energy Accessibility
3. Community Development and Employment
4. Human Resource Management
5. Human Rights, Labor Rights, and Labor Practices
6. Land and Resource Rights



### Environmental

1. Climate Change and Greenhouse Gas Emissions
2. Air Emissions
3. Oil Spill Management
4. Water and Wastewater Management
5. Waste Management
6. Biodiversity





Materiality Topics	Business Impacts	Impacts to Economy, Environmental, and Society	Types of Impacts							Sustainability Management Approach	SDGs
			Cause of Impacts			Actual		Potential			
			Operations	Products/ Services	Supply Chain	+	-	+	-		
Sustainability Innovation and Investment	Revenue	Increase business opportunities in utilizing technology for renewable and clean energy, Increase efficiency and energy-related process improvement		✓		✓				“Innovation Management” Topic Page 121	
Quality of Products and Services	Revenue	Maintain customer satisfaction on the products and services of the organization and maintain the procurement ability to exceed the customers’ expectations while ensuring safety to the customers		✓				✓		“Sustainable Product and Service Development” Topic Page 110	
Corporate Governance and Ethics	Risks	Create and maintain trusts from stakeholders regarding governance and ethics of the organization	✓		✓	✓				“Good Corporate Governance and Anti-Corruption” Topic Page 75	
Sustainable Supply Chain	Costs	No long-term business partners, Partner companies within the supply chain that might create an environmental and social impacts in the long run			✓				✓	“Supply Chain Management” Topic Page 97	
Customer Relationship	Revenue	Deliver best services to the customers as a top priority, being the center and create relationships with them, including receiving feedbacks and needs from customers, and develop service skills of the employees accordingly	✓	✓				✓		“Relationship Management and Responsibility to Customers” Topic Page 118	
Digital Transformation and Cybersecurity	Risks	The technology system cannot operate continuously, causing a reputational risk from data security and gap for corruption	✓						✓	“Technology and Cybersecurity Integration and Implementation for Business Development” Topic Page 123	
Anti-Competitive Behaviors	Risks	No practices to prevent competition in the market or set prices or price proposal with no transparency		✓				✓		“Good Corporate Governance and Anti-Corruption” Topic Page 75	
Climate Change and Greenhouse Gas Emissions	Risks	Volatile change in the climate and global warming, flood, drought from greenhouse gas emissions	✓	✓	✓		✓			“Climate Change Management” Topic Page 132	
Air Emission	Risks	Reduce health risks from air pollution to the communities	✓			✓				“Air Quality Management” Topic Page 144	
Oil Spill Management	Risks	Oil leakage to the land and sea, destroying environment, wildlife, and communities	✓		✓		✓			“Oil Spill Management and Prevention” Topic Page 174	

Materiality Topics	Business Impacts	Impacts to Economy, Environmental, and Society	Types of Impacts							Sustainability Management Approach	SDGs	
			Cause of Impacts			Actual		Potential				
			Operations	Products/ Services	Supply Chain	+	-	+	-			
Water and Wastewater Management	Risks	Manage water usage, especially within the water scarcity area to have enough for the refining process, including the wastewater management to reduce impacts to the communities	✓						✓		“Water Pollution Management” Topic Page 142	
Waste Management	Risks	Reduce health risks from hazardous wastes and non-hazardous wastes to the communities	✓			✓					“Waste and Scraps Management” Topic Page 147	
Biodiversity	Risks	Control occupational health of the employees to maintain at a healthy level physically and psychologically, work in a dangerous environment, work that causes deterioration or irregularity of health, including inappropriate workplace standards causing employees and other labor harms and death during operations	✓							✓	“Biodiversity Management” Topic Page 154	
Occupational Health and Safety	Risks	Control occupational health of the employees to maintain at a healthy level physically and psychologically, work in a dangerous environment, work that causes deterioration or irregularity of health, including inappropriate workplace standards causing employees and other labor harms and death during operations	✓					✓			“Occupational Health and Safety” Topic Page 168	
Energy Accessibility	Revenue	Communities cannot access energy, Customers and consumers cannot afford the energy due to price and increased costs.		✓				✓			“Energy Security and Accessibility” Topic Page 223	
Community Development and Employment	Risks	Support community development in sustainable areas for a better life and an engagement	✓							✓	“Community and Society Development” Topic Page 198	
Human Resource Management	Costs	Unable to develop employees to the growth pace of the organization, including diversity management in ideas to retain the employees	✓							✓	“Human Resource Management” Topic Page 185	
Human Rights, Labor Rights, and Labor Practices	Risks	Challenging human rights management in the future from the diversity of the employees and stakeholders as the businesses expand, increasing the risks of oppressions and inequality causing the financial impacts or criminal abuse	✓							✓	“Human Rights” Topic Page 176	
Land and Resource Rights	Risks	Intruding spaces/areas and utilize the resources of the community inappropriately causing the way of life and safety of the communities	✓							✓	“Human Rights” Topic Page 176	

# Sustainable Strategy

The Company is committed to sustainable business innovation, aligning with environmental and societal considerations through the implementation of the organizational 4S Strategies. This strategic framework aims to achieve organizational objectives both in the short and long term. The strategies comprise the following:

## S1 Security: Create energy security by focusing on the source of energy.

These are the core businesses of the Company that provide energy security for the country by implementing a joint business strategy among the Refinery and Oil Trading Business Group, Marketing Business Group, Clean Power Business Group, Natural Resources Business Group, as well as the Bio-Based Products Business Group to sufficiently supply, produce, and distribute oil and biofuel to meet the needs of both industries and the public. This aligns with the overall energy demand trend, and although electric vehicle usage is expected to increase in the future, these businesses remain essential for the country's energy needs and continue to grow steadily. In September 2023, The Company acquired rights over the Bangchak Sriracha Refinery, operated by the Bangchak Sriracha Plc. (BSRC), a modern complex refinery with nameplate capacity of 174,000 barrels per day. The Company has two refineries with a combined nameplate capacity of 294,000 barrels per day, enhancing energy security according to strategy.

## S2 Synergy: Create collaboration to transform and create products and services covering all business groups.

The focus is on conducting businesses that align with the expertise of Bangchak Group and in line with the core business unit (S1), such as oil transportation and logistics, public utilities and energy infrastructure, food and beverage, and mining, to increase revenue and create shared value for the portfolio. In 2022, the Company established the Bangkok Fuel Pipeline and Logistics Co., Ltd. (BFPL), with plans to expand the business to accommodate a comprehensive fuel transport system. In 2023, the Company acquired shares in Bangchak Sriracha Public Company Limited (BSRC), which is an important step in upgrading the capabilities and potential of business operations. and established Refinery Optimization and Synergy Enterprise Company Limited



(ROSE) representing a giant leap in elevating its capability as well as being a strong leader in the multinational energy business through synergy and the development of the Platform for Growth. Such endeavor is for sustainability, accessibility, and security in energy that is ready to drive towards a low carbon society.

## S3 Sustainability: Develop and extend core businesses to achieve growth and sustainability.

To develop related business that support or expand Core Business growth and sustainability to accommodate future technology and changes, and challenges posed by global climate change, The Company has accelerated its investment growth in clean and green businesses that aim for net zero and/or carbon neutrality. Examples include investment and development of the lithium battery business in preparation for EVs and development of high-value bio-based specialties with investment in Manus Bio Inc., a reputed global company with leading bio-innovative technology on advanced bio-fermentation. BiC is a dedicated institute under Bangchak in charge of promoting innovations for the environment and society through investment in startups and partnering with external R&D organizations to relentlessly advance Bangchak's green

businesses and development of bio-based specialties for domestic and international markets. The Company established the BSGF Co., Ltd., a joint venture between BBGI Plc. and the Thanachok Oil Light Co., Ltd., to engage in the procurement of raw materials, the production and distribution of Sustainable Aviation Fuel (SAF) derived from used cooking oil.

In 2023, Bangchak, through BCPG Plc., expanded investment into four natural gas power plant (CCGT) projects in the United States of America, with 857 MW already in operation, consisting of the 341 MW Carroll County Energy project (CCE), the 90 MW South Field Energy project (SFE), the 212 MW Liberty project, and the 214 MW Patriot project for the sustainable growth of clean power business.

### **S4 Scalability: Build flexibility and focus on seeking opportunities and driving new business in the future (New S-curves) to support long-term growth.**

To sustain long-term growth, Bangchak focuses on reforming its revenue stream that leverages new S-curve businesses that produce extensive benefits for the Corporation. At the same time, Bangchak is poised to deal with technological transformation, emerging risks, and market volatility.

The Company continues to lead with the “4 Green Sustainability Strategy,” as a framework for business operations and investments.

## **4 GREEN (4G) Sustainability Strategy**

### **1 GREEN Business**

Bangchak focuses on investment in businesses that foster sustainable values. Besides growing revenue from new undertakings, this strategy represents green initiatives applied to businesses, including high-value bio-based products derived from agricultural produce via biotechnological innovation extended from biofuel production and sales. The Company also values green power businesses and energy management, among others, involving BiiC, which incubates startups to further Bangchak’s businesses in the future.

### **2 GREEN Production**

Bangchak focuses on environmentally friendly and safe operations with optimal efficiency in utilization of water and energy resources. To achieve these goals, Bangchak has adopted the operating systems certified by ISO 14001, ISO 50001, and Green Industry (Green Network) Level 5 of the Ministry of Industry standards in addition to Eco Factory from the Federation of Thai Industries, the occupational health and safety standard of ISO 45001, and advanced operating systems under Process Safety Management (PSM).



### **3 Your GREENovative Destination**

Bangchak strives to be a creative and sustainable destination of all age groups, focusing on leadership in developing greenovation through varied goods and services and non-oil businesses at “Bangchak” service stations, which serve as a destination that fulfills customers’ needs while 21 Bangchak Corporation Public Company Limited Form 56-1 One Report 2023 pursuing sustainable business development. To this end, we leverage our core competencies by 1) fulfilling customers’ and stakeholders’ needs and

expectations; 2) procuring, developing, and creating innovations in oil and non-oil products as well as services to enable us to promptly respond to changes; and 3) operating businesses in conjunction with exercising sustainable stewardship of the environment and society. Our key strategies are as follows:

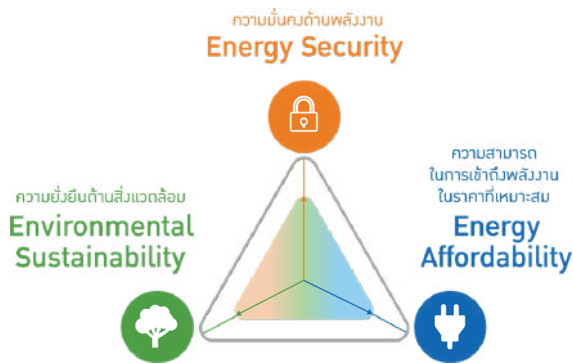
- **Greenovative Products** : Bangchak strives for leadership in offering premium fuels in response to customers' demands and benefiting the environment through meeting the Euro 5 standard which at present is present is Bangchak Hi Premium 97, gasoline with an octane rating of 97, the highest in the market (E20 S EVO Gasohol, Hi-Premium Diesel S).
- **Network Management** : We strive to grow and develop service station formats to meet customers' needs with a focus on areas of booming fuel demand and establish lucrative returns for partners' investment through innovative service stations, surroundings, non-oil businesses, and unique design service stations to meet the various requirements of consumers. Our six designs are called Modern, Innovation, Eastern, Western, Fantasy, and Thai-inspired. We also advocate standard improvement and service station image both station structure and services to be ready for competition. In short, catering to customers' needs and expectations is another key goal of the Marketing Business Group.
- **Non-Oil Offerings** : A new business model has been developed through collaborations with leading Michelin-accredited restaurants to open their branches in Bangchak service stations such as Jae Dang Sam Yan Somtum, Khua Kling Pak Sod, Nai Uan Yentafo, Pad Thai Fai Talu. These restaurant branches have fulfilled the experience for our service station customers whilst creating increased revenues for the entrepreneur. Furthermore, the non-oil business has continually expanded in Bangchak service stations to offer added convenience for the customers. The coffee shop business under the "Inthanin" brand name and DAKASI Pearl Milk Tea are such examples of which Bangchak Retail has secured the rights to expand and manage at Bangchak service stations across the country as well as for business partners that cater to several convenience store chains such as Tops Daily, Family Mart, Mini Big C, and Lawson, to name a few. Bangchak also comprehensively manages the space within service stations by providing car care services under brand names such as FURiO Care, Green

Wash, TYREPLUS, Wizard, and Autoclik. Joint expansion of branches with our partners include B-Quick and various lifestyle services ranging from laundry shops to courier services and vending machines.

- **Digital Experience** : We apply technology to service and create new experiences for customers while relentlessly developing systems for convenience. We also connect to ecosystems in line with the requirements of today's lifestyles. Cases in point are the application of digital payment and accruing loyalty points at the stations, all Inthanin branches, and convenience stores at the stations. To this end, customers simply scan QR Codes to pay through all bank applications, thus minimizing physical cash contact and maintaining distance between customers and service providers, in turn boosting service station patrons' confidence. The improved digital card system allows customers to accrue points simply by giving their phone numbers at service stations, Inthanin, and business outlets affiliated with Bangchak and then redeem such points through the Bangchak application without having to use cards. Finally, Bangchak grows its customer base and gives members more choices through collaborations with partners, including transferring Bangchak points to AIS points, using Bangchak Paypoint to convert points into money at Thung Ngoen shops, transferring Bangchak points to MAAI points, and converting points into mutual fund payment.
- **Green Sustainability** : In fostering steady business growth along with society and the environment, Bangchak constantly drives projects supporting social development participation in conjunction with customers and stakeholders through a variety of projects. This includes a refueling project where agricultural produce or farmers' and SME entrepreneurs' innovative goods, or both, are given to refueling motorists; and the project whereby organic vegetables are grown on service station premises and handed out to employees to lower their food bills as well as being given to station patrons. A byproduct created from this effort is the know-how in growing garden vegetables, which is shared with communities and schools around our service stations. Additionally, there is the Fry to Fly Project that offers to buy used cooking oil at selected Bangchak service stations to be converted into sustainable aviation fuel (SAF) that can reduce up to 80% of carbon dioxide emissions compared to conventional aviation fuel.

## 4 GREEN Society

Bangchak strives to maintain the balance in business based on the concept of Greenovate to Regenerate. This is based on maintaining a balance between “value” and “virtue” to address the Energy Trilemma in the drive towards a lowcarbon society with the goal of achieving NetZero GHG Emissions by 2050, as well as maintaining a balance as an organization rich in ethics, responsibility for the environment and society, and corporate governance (ESG). This has been translated into the BCP316NET plan. The C: Conserving Nature and Society Plan focuses on the conservation of nature together with caring for society. On the other hand, the NET: Net Zero Ecosystem Plan promotes the net zero ecosystem in Thailand.



### The C: Conserving Nature and Society

Plans aims to achieve the organization’s 10 percent GHG emission and to seek collaboration with our partners to develop the carbon credit from the forest and agricultural activities. The plan aims to mitigate the risks of the project as well as sharing the benefits from the project to cover the environment and stakeholders in society by developing Green and Blue Carbon ecosystems and the agricultural sector. The models comprise of land forestation, community forest conservation, mangrove forestation and conservation, sea grass source study, and carbon credit from the perennial crop development project.



### The NET : Net Zero Ecosystem

Plan aims to promote the Net Zero Ecosystem in Thailand, covering the preparation for Thailand’s Carbon Neutrality by 2050 and Net Zero Emissions by 2065. Both targets are still new to Thai society; hence, the Company’s drive, with its partners, is in readying all the stakeholders both inside and outside the organization so that they will be knowledgeable, understanding, and have the relevant experience. Such efforts enhance the awareness of Thailand’s GHG management at all levels, from personal to community, SMEs, business organizations, and the public at large through the Carbon Markets Club, activities, and various projects such as Waste Reduction at the Source with Bangchak, Cooperative Network to Combat Global Warming, Thai Rice NAMA, Ruk Pun Suk Junior Program, and to create direct experience for the consumer from using Bangchak’s products and services as well. These include the Winnonie project as well as the Fry to Fly Project that collects used cooking oil to be converted into sustainable aviation fuel (SAF).

At the community level, Bangchak has been successful in maintaining the trust of its surrounding communities to reflect its amiability, usefulness, as well as trust in safety matters through activities that combine relations with quality of life in eight aspects. In 2023, the community engagement score for the Bangchak Refinery was as high as 89%. Furthermore, guidelines for operation have been expanded to determine the care process for the Bangchak Refinery’s neighboring communities to reflect the prototype of a safe and high-quality service station as well as the environmental model with social benefits.

# SDGs Integration




The Company integrates the SDGs into its sustainability strategy by considering the relevancy to the Company’s business operations, the alignment with the company’s core competencies, the Company’s ability to respond to the SDGs, and global and national sustainability trends. The Company responds to the SDGs through its sustainability management structure, which includes strategies, plans, and monitoring of progress in achieving the SDGs. The following are the specific responses for each goal:

Target	Plan	Operating Performance	Long-Term Targets
<div style="display: flex; align-items: center;"> <h3>Governance and Economy</h3> </div>			
	<ol style="list-style-type: none"> <li>Develop business for electricity production from renewable energy by expanding domestically and internationally for a sustainable growth</li> <li>Develop a biofuel business and further developing high value bioproducts.</li> </ol>	<ul style="list-style-type: none"> <li>Generated and sold electricity from renewable energy through BCPG Public Company Limited, both domestically and internationally, for a total of 2,025.2 MW, comprising:               <ul style="list-style-type: none"> <li>Solar power plants in Thailand with the capacity from commercial operation of 176.8 MW (including rooftop installations and under commercial operation) with additional 13 MW expansion and 79.7 MW in commercial operation in Japan.</li> <li>Wind power plants in Thailand with the capacity of 9.0 MW and in the Philippines with the capacity of 14.4 MW (equity portion).</li> <li>Hydropower plants in Lao People’s Democratic Republic, with the capacity from commercial operation of 114 MW.</li> <li>Natural gas power plants in the United States with the capacity from commercial operation of 857 MW (equity portion).</li> <li>Projects under development with the total capacity of 774.9 MW includes rooftop solar power project in Thailand, solar power plant projects in Japan and Taiwan, and wind power plant projects in the Philippines and Laos.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Focus on core business growth through clean energy generation, including, solar power plants, rooftop solar power plants, wind power plants, hydropower plants, power transmission line, and natural gas power plants.</li> <li>Enter the battery energy storage system business throughout the value chain to support the growing electric vehicle industry, with the increasing use of renewable energy. Moreover, to support the development of new smart energy businesses driven by innovation and technology to promote energy management.</li> <li>Invest in other energy-related infrastructure business according to the business and investment plans of the Company and to support the business expansion in the future.</li> <li>Efficiently manage capital and balance sheet by secure appropriate funding sources and financial ratios.</li> </ul>

Target	Plan	Operating Performance	Long-Term Targets
		<p>In addition, there are other infrastructure projects, such as: a power transmission line project from Laos to Vietnam, and an oil terminal and port project in Phetchaburi Province, Thailand.</p> <p>Remarks: The capacity is as per the Power Purchase Agreement (PPA).</p> <ul style="list-style-type: none"> <li>• Operates a biofuel business through BBGI Public Company Limited, with a total production capacity of over 1,800,000 liters per day. The high-value bioproducts business comprises BBGI Biodiesel Company Limited, with a biodiesel production capacity of 1,000,000 liters per day, and a pure glycerin refinery with an average production capacity of 80 tons per day. <ul style="list-style-type: none"> <li>- BBGI Bioethanol (Chachoengsao) Company Limited, with the total production capacity of ethanol from cassava and molasses totaling 150,000 liters per day.</li> <li>- BBGI Bioethanol Company Limited, with the total production capacity of ethanol from molasses totaling 650,000 liters per day.</li> <li>- Sales, import, and export of high-value bioproducts via investment in Manus Bio Inc., a leader in the high-value bioproducts business, and co-invests in the establishment of WIN Ingredients Joint Venture to conduct business related to biotechnology.</li> <li>- Research and development business in biotechnology focuses on research and development of bioproducts using Synthetic Biology technology in collaboration with Biome Company Limited.</li> <li>- Contract Development and Manufacturing Organization (CDMO) business utilizing advanced biotechnology through collaboration with Fermbox Bio Private Limited, a partner with expertise in research and production of synthetic biological products using high-precision fermentation processes. BCPG and Fermbox Bio co-invest in the joint venture of BBGI Fermbox Bio (BBFB).</li> </ul> </li> <li>• New Products: Hi Premium 97 which contains high-octane rating of 97, the highest level within the E10 gasohol group in Thailand. It is the only premium gasohol that complies with the Euro5 standard.</li> <li>• Continues to promote the sale of biofuels, which help to reduce greenhouse gas emissions. The Company focuses on selling Gasohol E20 S EVO through its network of 1,024 E20 service stations and 229 E85 service stations. It also maintains the second-largest market share for E20 and E85 products in Thailand.</li> <li>• Upgrade its service stations with a unique design concept. The Company aims to provide a better customer experience through innovative design and partnerships with non-oil businesses. There are 87 unique design service stations in six different formats: Modern, Innovation, Eastern, Western, Thai-inspired, and Fantasy.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a biofuel business into high value-added bioproducts through joint investment with business partners with expertise in biotechnology in Thailand and abroad, in line with the Bio-Circular-Green Economy (BCG) model.</li> <li>• Focus on investing in innovative businesses, including green energy innovation such as sustainable aviation fuel (SAF) and bio-based product innovation that promote health and well-being of the society and environment.</li> <li>• Aim to be the number one service station brand.</li> <li>• Drive sales through the service stations and occupies the 2nd biggest market share (*).</li> </ul>



Target	Plan	Operating Performance	Long-Term Targets
		<ul style="list-style-type: none"> <li>Expand its non-oil business both inside and outside its service stations to provide greater convenience for customers. This includes the following businesses: coffee shop under the brand “Inthanin” with 1,020 branches, bubble milk tea shop “DAKASI”, with 31 branches and the right to expand and manage DAKASI bubble tea shops in Bangchak service stations nationwide, and business partnerships with “Tops Daily” with 15 branches, “FamilyMart” with 15 branches, “Mini Big C” with 134 branches, and “Lawson” with 2 branches.</li> <li>Maximize the utilization of space at the service stations and provide a more comprehensive range of services include food service business partnering with “Jones Salad” and “Gateaux House,” car care business under the brand “FURIO Care” “Green Wash” “Tyre Plus” “Wizard” “Autoclik.” The Company also expands branches with B-Quik and expands to lifestyle businesses such as convenience laundromat “Code Clean,” logistics business, and automatic vending machine business.</li> <li>Expand its digital payment system to 1,275 service stations. Customers can use digital payment methods to pay for fuel, goods, and services with membership point at the service stations, Inthanin coffee shops, and convenience stores located within its service stations.</li> <li>Partner with the Thailand Environment Institute (TEI) to develop design criteria for its Inno-Green Stations. These stations are designed to be environmentally friendly, innovative, safe, and accessible to all customers. The Company has 58 service stations that meet the Inno-Green criteria, bringing the total number of Inno-Green stations to 258.</li> <li>Develop a Member Card to offer a variety of benefits to its customers. In addition to the “Receive back as much as the oil price increase” program, the card also offers environmental benefits. For example, customers can donate their points to various charities through the “My Tree” and “Donation Basket” programs. The Company has also developed other programs to expand its customer base, such as the ability to transfer points to AIS points, redeem discounts, pay with point at Tungngern shop , transfer points to MAAI points, and convert points into mutual funds.</li> </ul>	
	<p>Participate in assessment from Corporate Governance Report Of Thai Listed Companies (CGR) score and extend CAC Re-certification.</p>	<ul style="list-style-type: none"> <li>Received CGR Score of 112% in Excellence level (more than 80%)</li> <li>Extended CAC Re-Certification</li> </ul>	<ul style="list-style-type: none"> <li>Maintain CGR score in Excellence level.</li> <li>100% of key partners are being assessed with Supplier Code of Conduct (SCoC).</li> </ul>

Target

Plan

Operating Performance

Long-Term Targets




Environment





1. Focus on reducing greenhouse gas emission under BCP316NET.
2. Improve efficiency and effectiveness of energy consumption in the production.

- Set performance indicators for greenhouse gas emission reduction from its projects and carbon offset activities. These indicators are used to evaluate the performance of senior executives.
- The energy consumption and greenhouse gas emission data for scope 1 and 2 have been verified by a third party with a reasonable level of assurance. The scope 1 and 2 data for the Bangchak Refinery (Phra Khanong) and the Marketing Business Group have been certified by the Thailand Environment Institute (TEI). The scope 1 and 2 data for Bangchak Green Net Company Limited. (BGN) and Bangchak Retail Company Limited (BCR) have been verified against the Carbon Footprint Organization assessment guidelines issued by the Thailand Greenhouse Gas Management Organization (Public Organization).
- Express its commitment to achieving carbon neutrality and net zero greenhouse gas emissions at the organizational level by 2050. The Company is working towards this goal through its participation in the Carbon Neutral Network Thailand as a “Climate Action Leading Organization” (CALO).
- The refinery business is implementing energy management and energy efficiency improvement projects to reduce greenhouse gas emissions. These projects include the installation of thermal insulation on furnace walls, the upgrading of heat exchangers, and the reduction of steam consumption. The Company is studying and evaluating carbon dioxide (CO<sub>2</sub>) emissions through the Life Cycle Assessment (LCA) of its products.
- The marketing business is focusing on using electricity from renewable sources, such as solar energy. The Company is using solar-powered air conditioners in its Inthanin and DAKASI shops, and it is installing solar rooftops at its service stations. These initiatives are part of the Company’s goal of achieving net-zero emissions at its service stations. The Company is also installing EV chargers at its service stations. In 2023, the Company installed EV chargers at 37 service stations and is currently in the process of obtaining permits for additional installations. The total capacity of the solar panels installed at the service stations is 1 MW, which is expected to reduce greenhouse gas emissions by more than 600 tons of CO<sub>2</sub> equivalent per year.
- Establish a platform for renting electric motorcycles, called Winnonie. Winnonie is a startup within the Bangchak Group. In 2023, Winnonie had more than 1,000 registered users. The platform has helped to reduce greenhouse gas emissions by more than 2,000 tons of CO<sub>2</sub> equivalent since it began operating.

- Scope 1 and 2 greenhouse gas emission intensity (for its businesses in Thailand, excluding the Bangchak Sriracha Refinery) will be less than 22.3 tons/kilo barrel by 2024. (\*)
- Aims to become a carbon neutral company by 2030 and achieve net zero greenhouse gas emissions by 2050. (\*)


Target	Plan	Operating Performance	Long-Term Targets
		<ul style="list-style-type: none"> <li>The Company's transportation business, BFPL, transports fuel by pipeline. The Company's LNG business, BTSG, supplies and distributes liquefied natural gas (LNG). These businesses support the Company's goal of providing and distributing low-carbon alternative fuels. In 2023, BFPL transported more than 4.5 billion liters of oil by pipeline. This reduced greenhouse gas emissions by more than 23,000 tons CO<sub>2</sub> equivalent per year compared to transporting oil by truck.</li> <li>Partner with Thanachok Oil Light Company Limited and BBGI Public Company Limited to establish BSGF Company Limited. BSGF will produce and sell sustainable aviation fuel (SAF) from used cooking oil. SAF can reduce greenhouse gas emissions by up to 82,000 tons CO<sub>2</sub> equivalent per year.</li> <li>The Bangchak headquarters building has received an award for reducing greenhouse gas emissions from the Low Emission Support Scheme (LESS). The LESS program recognizes businesses that have taken steps to reduce their energy consumption, fuel use, and waste.</li> <li>Offset its scope 1 and 2 greenhouse gas emissions from its office buildings and regional offices by purchasing carbon credits from BCPG Public Company Limited.</li> <li>Organize training on greenhouse gas accounting Carbon Footprint of Organization (CFO) for partners.</li> <li>Promote domestic carbon credit trading through the Carbon Markets Club. The Carbon Markets Club is a platform that connects buyers and sellers of carbon credits. It also raises awareness about climate change. In 2023, the Carbon Markets Club had 772 members, including 165 organizations and 607 individuals. The club has supported the trading of carbon credits from voluntary greenhouse gas reduction projects in Thailand (Thailand Voluntary Emission Reduction Program: T-VER) for a total of 474,207 tons CO<sub>2</sub> equivalent per year. The club has also supported the trading of digital renewable energy certificates (RECs) for a total of 1,612,645 MWh. This is equivalent to planting 148,898,779 10-year-old trees. The club has also launched a free carbon footprint tracking tool for organizations (CFO). The tool is based on the ISO 14064 standard and helps organizations to identify and reduce their greenhouse gas emissions.</li> </ul>	
	<p>1. Implement 3Rs principle (Reduce, Reuse &amp; Recycle) to increase efficiency in water consumption by developing wastewater treatment system for reuse, and manage with modern tools/technology.</p>	<ul style="list-style-type: none"> <li>Tap water consumption reduction projects in 2023 include new cooling tower for plant no.2 and reduction of steam stripping in the distillation unit.</li> <li>Water use intensity was 52 cubic meters per thousand barrels of oil equivalent. This is better than the target of 55 cubic meters per thousand barrels of oil equivalent.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce tap water and groundwater usage by 40% in 2024 and by 44% in 2030, compared to the water requirements proportional to the quantity of crude oil in the base year 2019.</li> </ul>

Target	Plan	Operating Performance	Long-Term Targets
	<p>Commit to reducing the amount of waste sent to landfills. To achieve this goal, the Company has developed a waste management strategy that goes beyond the traditional 3Rs (Reduce, Reuse, Recycle) to 5Rs and 7Rs</p>	<ul style="list-style-type: none"> <li>• Commit to sending zero waste to landfills.</li> <li>• Refinery in Phra Khanong has achieved a 99% 3Rs waste management rate.</li> <li>• Sent 6.6 tons of waste to incineration (incineration + landfill) (excluding recycling, reuse, or incineration for energy recovery).</li> <li>• Inthanin coffee shop is a leader in the use of bioplastics. The shop uses PLA (polylactic acid) bioplastics for both lids and cups. PLA is made from plants and is completely biodegradable. Inthanin also uses sip-through lids, which eliminate the need for straws. This helps to reduce the amount of single-use plastic waste generated by the shop. Inthanin's efforts to reduce plastic waste have made it the number one user of bioplastics in ASEAN.</li> </ul>	<ul style="list-style-type: none"> <li>• Zero waste to landfill</li> </ul>
	<ol style="list-style-type: none"> <li>1. Biodiversity Risk Assessment</li> <li>2. Mitigation and Monitoring Measures</li> <li>3. Biodiversity Promotion Projects</li> </ol>	<ul style="list-style-type: none"> <li>• The Company has a policy in place to manage biodiversity and no deforestation.</li> <li>• Conducted a biodiversity risk assessment of its operations, including Bangchak Phra Khanong Refinery, Bang Pa In Terminal, and service stations*. These areas fall within a 5-kilometer radius of the surrounding area characterized by a high biodiversity, including sites designated as UNESCO World Heritage Sites, Ramsar Convention wetlands, and conservation areas defined by the International Union for Conservation of Nature (IUCN). The assessment utilizes geographic information system (GIS) software in conjunction with an evaluation of environmental impacts related to air, water, soil, and waste. The assessment complies with relevant legal standards. The findings indicate that the operational areas pose low risk.</li> </ul> <p>Additionally, a dependency analysis was conducted, and environmental services were utilized to prepare mitigation measures in case any risks are identified.</p> <p>Operated projects to support biodiversity:</p> <ul style="list-style-type: none"> <li>- <b>Firefly Path: Conservation Path:</b> Collaborate with communities neighboring the Bangchak Refinery (Phra Khanong) in the Khung Bang Kachao 6 area, focusing on the conservation of fireflies in the area.</li> <li>- <b>Project Supporting Large-scale Stingless Beekeeping Groups in Bang Nam Phueng Sub-district:</b> Collaborate with large-scale and local stingless beekeeping groups in Bang Nam Phueng Sub-district, Phra Pradaeng District, Samut Prakan Province, as the stingless bees are the indicators of fruitfulness of biodiversity and also beneficial to the local economy.</li> </ul>	<ul style="list-style-type: none"> <li>• No complaints regarding biodiversity impacts.</li> </ul>

Target	Plan	Operating Performance	Long-Term Targets
		<ul style="list-style-type: none"> <li>- <b>Punsook Urban Greenery Project:</b> Plant trees in areas near the Bangchak Refinery in Phra Khanong and Bang Na districts, in collaboration with Bangkok Metropolitan Administration, Phra Khanong District Office, Bang Na District Office, Expressway Authority of Thailand, Local communities, Schools, Khung Bang Kachao, Bang Nam Phueng Sub-district, Samut Prakan Province under Bang Nam Phueng Subdistrict Administrative Organization, Bang Nam Phueng community leader, Royal Forest Department, and Nakhorn Khuengkhan Ecological Green Space Management Center</li> <li>- <b>Our Khung BangKachao Project:</b> Collaborate with over 34 government agencies and private organizations to develop Khung Bang Kachao into a green and prosperous area, while developing for a better way of life with better local economy.</li> </ul>	



Society

	<ol style="list-style-type: none"> <li>1. Commit to improving and developing the SHEE (Safety, Security, Occupational Health, Environment and Energy) management system in accordance with ISO 45001 safety management and management standards, including the Process Safety Management (PSM) system continuously.</li> <li>2. Develop activities dedicated to society and business that create benefits to society and environment as a whole.</li> </ol>	<ul style="list-style-type: none"> <li>• No accidents that lead to a major widespread complaint</li> <li>• Organize activities to promote safety during work, including: promoting the creation of a safety culture, holding monthly meetings with safety officers of contractor companies, setting safety goals and plans, celebrating safe hours without accidents for employees and contractors.</li> <li>• Work-related health services include measuring light, noise, heat, and chemicals in the workplace to ensure that it is safe for workers' health.</li> <li>• Provide safety officers and occupational health physicians who are responsible for controlling and advising employees and contractors on occupational health issues. There is also a monitoring of employees and contractors' health.</li> <li>• Develop the quality of life of the community to create a healthy, livable, and sustainable community in the area around the refinery (Phra Khanong) in 8 aspects: safety, education, sports, quality of life, environment, relationship and cultural and tradition preservation, economy, and public service. This is done through organizing activities with community groups, family groups, school groups and condominium groups. The percentage of participants in all community relations activities in 2023 was 101,558 people.</li> <li>• Community engagement score was 89% better than the target at 88%.</li> </ul>	<ul style="list-style-type: none"> <li>• No accidents that lead to a major widespread complaint</li> <li>• Community engagement score to the Company 89% in 2024 and 91% in 2030. (*)</li> </ul>
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Target	Plan	Operating Performance	Long-Term Targets
	<p>Take care of the employees through 100X Happiness and support employees to have i am bcp value by following the guideline of The BEST Employer to be in accordance with the sustainable development target.</p>	<ul style="list-style-type: none"> <li>Project Happy Aspect 1: Happy Stay such as sports complex construction, i am bcp space as a multi-purpose space, and development of an employee ID that can be used as a BTS card.</li> <li>Project Happy Aspect 2: Happy DNA such as communicating and creating tools to support behavioral showcase, iam bcp: Boots Up activities, Wrong Di Innovation to motivate innovation culture.</li> <li>Project Happy Aspect 3: Happy Me such as providing flexible employee benefits, and health and well-being programs.</li> <li>Project Happy Aspect 4: Happy Heart such as BCP Town Hall event, CEO Box as a employees' voice channel, 12 Month 12 Activities initiative.</li> <li>In 2023, the overall employee engagement score was 85%, better than the target of 74% and continuously increasing under the 100X Happiness initiative.</li> <li>Provide employment opportunities for not less than 1% of the total number of employees.</li> </ul>	<ul style="list-style-type: none"> <li>Employee engagement score to the Company 76% in 2024 and 90% in 2030. (*)</li> </ul>
	<ol style="list-style-type: none"> <li>Annual risk assessment regarding human rights and environment</li> <li>Supplier Code of Conduct assessment regarding human rights, occupational and health safety, and environment</li> <li>Raise responsibility and awareness regarding human rights in the organization</li> <li>Establish a grievance mechanism for negative human rights impacts</li> </ol>	<ul style="list-style-type: none"> <li>Conduct comprehensive human rights due diligence in accordance with the guidelines of Human Rights Commission with 8 areas of risks include construction and expansion of business premises, employees, contractors, communities and society, environment, surrounding areas of operation, customers and consumers, other organizations with business relationships, cross-border labor, employment of LGBTIQ+ and temporary workers covering vulnerable groups (children, women, indigenous people, and people with disabilities) within the organization, and covering the Refinery and Oil Trading Business Group, the Marketing Business Group, and partners throughout the supply chain.</li> <li>Conduct Supplier Code of Conduct assessment regarding labor practices, human rights, safety, occupational health, and the environment.</li> <li>Cultivate responsibility and create understanding of human rights by organizing training within the organization and send employees to attend training with external agencies</li> <li>Shared perspectives on driving organizations with the power of equality in International Women's Day #EmbraceEquity held by Citi Thailand Women's Network (Citibank)</li> <li>Developed a Human Rights Due Diligence (HRDD) Manual to define operational guidelines and prevent/mitigate human rights violations.</li> <li>Adhered to the National Action Plan on Business and Human Rights (NAP Implementation), which includes initiatives such as: supporting the improved quality of life for people with disabilities, and labor project under the name "Breastfeeding Promotion Project," which provides dedicated lactation rooms to ensure appropriate facilities for the ongoing wellbeing of mothers in the workplace.</li> </ul>	<ul style="list-style-type: none"> <li>No complaints regarding human rights issues initiated from business operations from the Company and partners.</li> </ul>

Remark: (\*) This is a result of the organization's sustainability performance that is aligned with the performance evaluation of the CEO and Managing Director in 2023.

# Economic, Environmental, and Social Context

The global economy in 2023 has shown signs of recovery from the COVID-19 pandemic. However, the economic landscape remains affected by geopolitical uncertainties and other political factors, such as the ongoing Russia-Ukraine conflict and the escalation of tensions between Israel and Palestine ( Hamas group) in October, which have caused fluctuations in energy and consumer prices throughout the year. Inflation rates in several countries, particularly in major economies, remain high but show signs of decreasing towards the end of the year.

According to the International Monetary Fund (IMF), the GDP growth rate was anticipated to grow at 3.1% in 2023, a decrease from the 3.5% growth in 2022. The United States Federal Reserve (FED) has raised interest rates from 0.25% to 5.25%, and maintained the latest rate between 5.25-5.50%, the highest level in the past 22 years. This is the second time the FED has decided to maintain the rate, after the 4 previous hikes since January 2022. Likewise, the European Central Bank (ECB) has increased interest rates consistently throughout the year, with the latest decision to maintain the rate at 4.0% in October.

For 2024, under the geopolitical uncertainties, inflation rate hikes are expected to slow down, especially in major economies. The IMF forecasts global GDP to grow by 2.90%, supported by service and tourism sectors, investments from the private sector and the Chinese economy that show signs of recovery. Nonetheless, geopolitical tensions, including the prolonged Russia-Ukraine conflict and conflicts in the Middle East between Israel and Palestine ( Hamas group), continue to pose global challenges, keeping energy prices high and volatile. Moreover, global public debt remains higher, and the Eurozone and the United States are entering a period of economic decline from financial stress.

In the Asia-Pacific region, the GDP was anticipated to grow at 4.2% in 2023, slowing down from the previous year's GDP of 5.5%, influenced by global economic uncertainties and persistent high inflation levels. However, the Asia-Pacific economies demonstrated recoveries, especially after several

countries, excluding China, have declared COVID-19 endemic. In 2024, the IMF predicts continuous economic growth for the Asia-Pacific region at 4.5%.

Climate change remains a global priority in 2023, with the 28<sup>th</sup> session of the Conference of the Parties (COP28) to the UN Framework Convention on Climate Change (UNFCCC) held from November 30 to December 12, 2022, in Dubai, the United Arab Emirates. Key topics include addressing crucial issues related to reducing greenhouse gas emissions initiatives, such as, expediting the just energy transition to sustainable energy sources in developing countries, shifting from fossil fuels to green energy; Efforts to adapt to climate change focus on minimizing risks and vulnerabilities while enhancing adaptive capacity and monitoring and evaluating progress in these areas are essential, with a target set for the year 2030; Climate finance to discuss the financial aspects of climate change mitigation involve tracking financial support from developed countries to developing countries, aiming to reach USD 100 billion annually by 2025. This support includes grants and concessional loans to aid developing nations in their climate change endeavors. The financial strategies align with the commitment to transparency.

Thailand demonstrates its active participation in driving climate change initiatives by fostering youth and community engagement and transitioning through policies and government agency actions. The country strives to enact climate change legislation, implement greenhouse gas monitoring tools, and enhance adaptive capacity. It also establishes appropriate financial mechanisms for accessibility and inclusive participation from all sectors while developing funding sources, integrating climate change information systems, and integrating with relevant organizations. The aim is to provide weather-related data and services that benefit local communities, while developing tracking systems for climate change initiatives and Thailand's greenhouse gas inventory system. These efforts align with the framework of international agreements, supporting global stocktaking and goals.

On the social aspect, the Company emphasizes corporate responsibility, considering the impact on stakeholders, communities, and adhering to human rights principles. This includes caring for organizational employees through a “100XHappiness” strategy. Crucially, the Company focuses on innovation and forward-looking actions, utilizing

technology for business development and continuous self-improvement to be comparable with leading large global organizations. The recent achievement of the Global Performance Excellence Award 2023 - World Class attests to this commitment, making the Company’s oil refinery the first and only in the world to receive this prestigious award.

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**Reference:**

Department of Climate Change and Environment “ 28<sup>th</sup> session of the Conference of the Parties (COP28) to the UN Framework Convention on Climate Change (UNFCCC)” (Online) [https://www.dcce.go.th/news/view\\_public.aspx?p=17642](https://www.dcce.go.th/news/view_public.aspx?p=17642)







## Governance and Economic Dimension

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# Revenues and Expenses and Tax Management

## Revenue (Disclosure 201-1)

In 2023, Bangchak Corporation Public Company Limited and its subsidiaries (“the Group”) generated revenue from all business segments, including refinery and oil trading business, marketing business, Clean Power business, bio-based products business, and natural resource businesses, as well as Bangchak Sriracha Public Company Limited (BSRC) with a total of THB 385,853 million, representing an increase of 18% from the previous year. The Group reported an EBITDA of THB 41,680 million, with a profit for the fiscal year 2023 of THB 13,233.28 million attributable to the parent company, equivalent to earnings per share of THB 9.27. Each business segment demonstrated significant growth and development, particularly after completing the acquisition of shares in Bangchak Sriracha Public Company Limited (formerly known as Esso (Thailand) Public Company Limited) on September 1, 2023.

## Expenses (Disclosure 201-1)

In 2023, the Group’s expenses increased by THB 70,365 million compared to 2022 totaling THB 352,114.9 million, since the acquisition of BSRC on September 1, 2023. Other expenses related to social welfare, schools, and communities, including both material and monetary donations totaling THB 73.6 million. Additionally, in 2023, the Company’s employee welfare expenses increased by approximately THB 2,162 million from 2022 due to the acquisition of BSRC. Interest payments for loans and debentures increased by approximately THB 971 million from the previous year, attributed to additional debenture issuances by BCP, BCPG, and OKEA, as well as increased borrowing from financial institutions. Tax payments to the government and local authorities in 2023 increased by approximately THB 1,837 million due to the absence of tax loss carried forward used in the year, whereas in 2022, tax loss carried forward was utilized. Furthermore, in this year, the Company and its subsidiaries distributed dividends totaling THB 3,209 million.

## Tax Management (Disclosure 207-1, 207-2, 207-3)

Taxation is considered a critical resource used in country management and development. Our Company places significant emphasis on tax management, aiming to maximize value creation for related stakeholders. We ensure that taxes are paid accurately and in accordance with the law. Furthermore, we have consistent tax planning and operational guidelines that apply to our business operations both domestically and internationally. Our commitment to transparency and fairness extends to all stakeholders. This aligns with the Company’s principles of corporate good governance, where we acknowledge the risks associated with taxation directly or indirectly. As part of our ongoing efforts, our tax policy is reviewed and updated annually by the Executive Committee and board of director at



More information available in



Tax Policy

In order to ensure comprehensive and accurate tax practices, we adhere to consistent standards and practices. Therefore, we have established guidelines that align with our policy as follows:

1. Assessing tax risks for certain business entities, including both established businesses and those under consideration for investment, both within Thailand and internationally. The assessment is conducted by the Company or external experts.
2. Monitoring relevant tax laws, regulations, and directives to stay informed about tax-related legal requirements through various channels, such as official government gazettes and relevant government agency websites. This ensures an understanding of the impact on the business entities of Bangchak Group.
3. Tracking eligibility in tax benefits and opportunities that the Company could utilize these benefits.

4. Supporting the accounting, tax, and related employees in attending tax-related knowledge sharing workshops and seminars held by government and private entities. This enhances knowledge and ensures accurate implementation and practices.
5. Considering impact of tax law amendments and revising operational practices, including transactions for related entities in Bangchak Group.
6. Incorporating lessons learned from the past mistakes as benchmark for continuous operational improvement.
7. Establishing feedback and suggestions channels regarding tax practices of the Company via Whistleblower Channel and Hot Line 1651.
8. The Company disclosed tax-related information such as effective tax rate, corporate tax payment in each country that complies with related law at



More information available in



Annual Registration Statement  
/ Annual Report 2023  
(Form 56-1 One Report)

## Good Corporate Governance and Anti-Corruption



### Good Corporate Governance

The Company's Board of Directors is committed to promoting the Company as an organization that operates business under the principles of good corporate governance and has a standard management system, which focuses on maximizing benefits for shareholders while considering all stakeholders. It maintains integrity in business operations, transparency, and accountability. Therefore, it has established a written policy on good corporate governance (Disclosure 2-23) since 2003. Part of this is the result of a workshop where all employees participated in setting guidelines for work. Over the past years,

the Company has aimed to create understanding in the principles of good corporate governance and foster a sense of applying good corporate governance in daily work, thus forming an organizational culture. It also develops the system of good corporate governance by studying the guidelines of good corporate governance both domestically and internationally, and assigns the Sustainability and Corporate Governance Committee (SCGC) to oversee and maintain the standard of work to be at the global level, in line with the strategy and business direction of the organization, as well as regulations, laws, and various practices. It also monitors and evaluates the performance according to the principles of good corporate governance annually through meetings of each specific committee, which regularly reports the performance to the Company's Board of Director.

## Company's Board of Directors

- The board has diversity (Board Diversity) with skills that align with the Company's business strategy through the formation of a knowledge and expertise table, considering from being a qualified person who has knowledge, ability, and diverse experience according to the Company's Board Skills Matrix, including expertise in engineering, energy, petrochemicals and chemicals, economics, finance, business management, accounting, law, sustainability, information technology, etc., as well as diversity in gender, race, and nationality. From this, the proportion of independent directors are suitable with the principles of good corporate governance to integrate the necessary knowledge and skills beneficial to the Company's operations.
- The Board consists of no less than 5 people and no more than 15 people, without gender discrimination. As of December 31, 2023, the Company's board consists of 15 people, including:
  - 11 Independent Directors, accounting for 73% of all directors
  - 3 Female Directors, accounting for 20% of all directors
  - 1 Executive Director

- The number of independent directors is more than one-third of all directors. Currently, there are 11 independent directors, which is more than half of all directors according to the principles of good corporate governance. This number is appropriate for the size and type of business, enabling them to perform their duties effectively.
- The Chairman of the Board is not the same person as the CEO and the managing director, and does not hold any position in the executive committee, to clearly separate duties and responsibilities.



**11 Independent Directors, accounting for**

**73%**

**of all directors**



**3 Female Directors, accounting for**

**20%**

**of all directors**



**1 Executive Director**

## Board Skills Matrix

Name/ Specific Expertise	Gender	Knowledge about Company Business	International Business	Accounting and Finance	Management	Law	Organizational Development and Innovation	Information and Digital Technology	Social, Environment and safety	Risk and Crisis Management	Direcors type			Number of other mandates of the board of directors	Tenure (Year)
											Executive Director	Independent Director	Non Executive Director		
1. Mr. Pichai Chunhavajira	Male	✓	✓	✓	✓		✓		✓	✓		✓	✓	0	11.9
2. Mr. Surin Chiravisit	Male	✓			✓	✓	✓		✓	✓		✓	✓	0	0.9
3. Mr. Prasong Poontaneat	Male	✓	✓	✓	✓	✓	✓			✓		✓	✓	1	2.3
4. Pol.Lt.Gen. Samran Nualma	Male	✓			✓	✓			✓	✓		✓	✓	0	1.9
5. Maj. Gen. Yuttasak Raksereepitak	Male	✓			✓		✓	✓	✓	✓		✓	✓	0	0.6
6. Mrs. Prisana Praharnkhasuk	Female	✓	✓	✓	✓		✓	✓		✓		✓	✓	3	7.10
7. Dr. Porametee Vimolsiri	Male	✓	✓	✓	✓		✓		✓	✓		✓	✓	1	5.7
8. Mr. Achporn Charuchinda	Male	✓	✓		✓	✓	✓			✓		✓	✓	0	2.1
9. Mr. Chaovalit Ekabut	Male	✓	✓	✓	✓	✓	✓			✓		✓	✓	1	2
10. Mr. Narin Kalayanamit	Male	✓	✓	✓	✓		✓			✓		✓	✓	0	1.9
11. Mrs. Vilai Chattanrassamee	Female	✓		✓	✓		✓			✓		✓	✓	2	0.9
12. Mrs. Woranuch Phu-im	Female	✓		✓	✓	✓	✓			✓			✓	0	0.9
13. Mr. Chanvit Nakburee	Male	✓		✓	✓		✓			✓			✓	1	1
14. Mr. Phairoj Chotikasatien	Male	✓			✓	✓	✓		✓	✓			✓	0	0.3
15. Mr. Chaiwat Kovavisarach	Male	✓	✓	✓	✓		✓	✓	✓	✓	✓			0	11.3
<b>Total</b>	<b>Male: 12 People Female : 3 People</b>	<b>15</b>	<b>8</b>	<b>10</b>	<b>15</b>	<b>7</b>	<b>14</b>	<b>3</b>	<b>7</b>	<b>15</b>	<b>1</b>	<b>11</b>	<b>14</b>		

Note: - Data as of December 31, 2023

- Knowledge about the Company's business includes oil business, retail business, energy business, petroleum exploration and production, power plants, alternative energy, etc.

## Performance Evaluation of the Company's Board of Directors

The Company's Board of Director conducts a performance evaluation of the Board at least once a year. The Board conducts the evaluation in three forms, namely individual evaluation (self-evaluation), individual evaluation (cross-evaluation) and group evaluation, for the Board's review of performance outcomes and problems for performance development. Additionally, the Board has instituted a systematic performance standard against which its performance is periodically compared, with continuing improvement review. The Company secretary will send the evaluation form and compile a summary report to the Company's Board meeting for joint consideration of work results and future improvements. In 2023, the questions in the executive committee evaluation form were revised to cover operations in the areas of sustainability and corporate governance. The evaluation criteria are calculated as a percentage of the total score, i.e., more than 85% = excellent, more than 75% = very good, more than 65% = good, more than 50% = fair, equal to/less than 50% = needs improvement. The evaluation results are as follows:



### 1) Individual Directors:

- **Self-evaluation:** topics include responsibility according to the role of directors, training and self-development, and compliance with the policy of good corporate governance. The average score is 97.50%, which is in the excellent category.
- **Cross-evaluation: by a group (3-4 directors, who do not disclose their names, will evaluate 1 director, 3-4:1):** topics used in the evaluation include responsibility according to the role of directors, and the independence of directors. The average score is 97.10%, which is in the excellent category.



### 2) The entire Board of Directors:

Topics used in the evaluation include the Board's policy, structure, and qualifications of the Board, performance of the Board, Board meetings, and self-development of directors. The average score is 97.90%, which is in the excellent category.



### 3) Subcommittees:

Topics used in the evaluation of responsibility according to duties and meetings are as follows:

- Audit Committee has an average score of 98.60%, which is in the excellent category.
- Nomination and Remuneration Committee has an average score of 98.89%, which is in the excellent category.
- Sustainability and Corporate Governance Committee has an average score of 97.33%, which is in the excellent category.
- Enterprise-Wide Risk Management Committee has an average score of 98.06%, which is in the excellent category.

The Company has analyzed the topics of performance evaluation, evaluation results, and reviewed the work, problems, and obstacles during the past year to improve and enhance the performance of the Company's Board and various committees to be more effective.



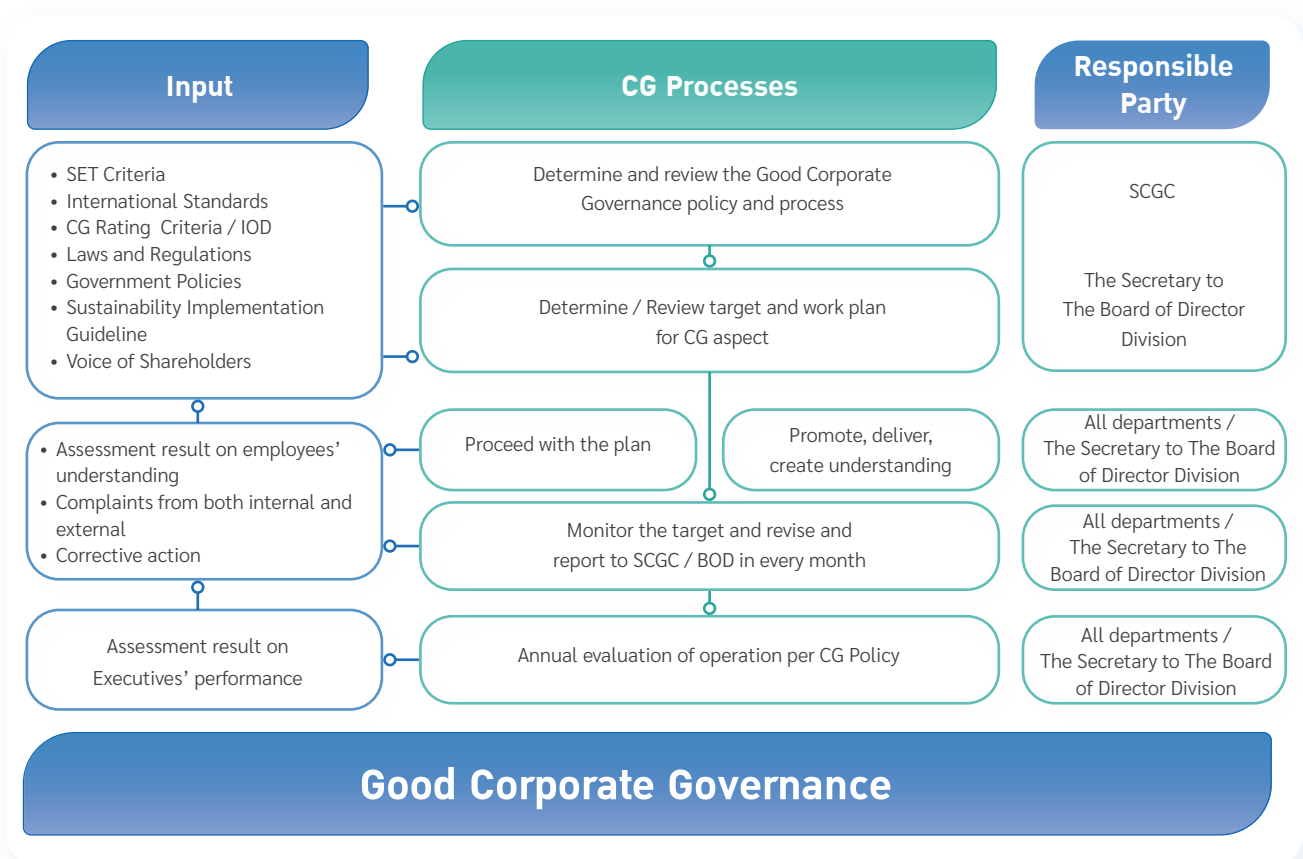
## Corporate Governance Policy Review System

The Company's Board has determined that there should be an annual review of the Company's good corporate governance policy to be in line with the criteria of the Corporate Governance Report (CGR), the Thai Private Sector Collective Action Against Corruption (CAC), the S&P Global Corporate Sustainability Assessment (S&P Global CSA), Corporate Governance Assessment Report, and ASEAN Corporate Governance Scorecard (ACGS), the ten principles determined by the United Nations Global Compact (UNGC), the United Nations Sustainable Development Goals (UNSDGs), the United Nations Guiding Principles on Business and Human Rights (UNGP), the evaluation of various organizational sustainability per the criteria of Thailand Quality Award, and the Women's Empowerment Principles (WEPs), as well as various standards according to

the ISO system such as ISO 14001: Environmental Management Standard, ISO 45001: Safety Management Standard, ISO 50001 Energy Management Standard, and PSM: Process Safety Management, etc., for the maximum benefit of shareholders and stakeholders and compliance with the principles of good corporate governance of the Securities and Exchange Commission (SEC), the Stock Exchange of Thailand (SET), the standard of good corporate governance of leading companies, and suitable for the current business model.

The Codes of Conduct: Systems/ Procedures are included:

1. Determine the policy and review the corporate governance process.
2. Determine and amend the CG objectives and action plan
3. Implement the policy and practices.
4. Promote practices to create awareness and understanding among employees.
5. Follow up on improvement targets and report to the Sustainability and Corporate Governance Committee (SCGC) / Board of Directors (BOD) every 6 months.
6. Evaluate compliance with the corporate governance policy annually.



The Company's Board has determined to set a written policy of good corporate governance of the Company since 2003, which is a guideline for directors, executives, and all employees to practice, and review regularly every year. In 2023, the Company's Board has reviewed and considered the policy, practices, and good corporate governance system of the Company, and it is of the opinion that the Company will arrange an insider list system and determine the blackout period for the securities of Company and/or subsidiaries in Bangchak Group, which are registered companies on the stock market in Thailand and abroad, and/or companies that are expected to make joint transactions (Target Company) that are registered in the stock market in Thailand and abroad. Those who know the inside information must not trade the said securities until at least 1 day after the information has been disclosed to the public. In addition, the key content of the Company's good corporate governance policy remains appropriate and consistent with the criteria of the Corporate Governance Report (CGR), the Thai Private Sector Collective Action Against Corruption (CAC), the S&P Global Corporate Sustainability Assessment (S&P Global CSA), the standard of good corporate governance of leading companies, and suitable for the current business model, so there is no amendment to the Company's good corporate governance policy in this year.

## Development of Corporate Governance System

- For executives and employees, the Company has arranged a personal information and conflict of interest report system annually through the online HR-Services channel. In addition, to prevent conflicts of interest, in the case of new employees or when there is a change in information, employees can also update their information on the system.
- The Company has developed a BCP Blackout Period Application and an insider list system (Insider List), in case there is an event involving inside information, and set a period prohibiting securities trading (Blackout Period) until at least 1 day after the information has been disclosed to the public, to comply with the code of conduct for the use of inside information, which is specified in the Company's good corporate governance policy.
- The Company arranges for employees to test the good corporate governance policy through the online knowledge management system (BCP KMS). In 2023, the Company has promoted knowledge and understanding in the field of good corporate governance, a good internal control system according to the framework of The Committee of Sponsoring Organizations of the Treadway Commission (COSO), as well as key content in the use of personal data according to the Personal Data Protection Act 2019 (B.E. 2562) and human rights.
- The Company has developed CG e-Learning about the good corporate governance policy to show related case studies in a tangible form and for all employees to study and learn by themselves. In 2023, the Company has expanded the promotion of principles and policies of good corporate governance, business ethics standards and morality to part-time and contractors through online learning channels that cover knowledge of good corporate governance policy, conflicts of interest, securities trading using inside information, anti-corruption, and complaint whistleblowing, to lead to correct practice according to ethics.
- From the improvement and development of the good corporate governance process and the disclosure of information according to the criteria of the Corporate Governance Report (CGR 2023), the Company has received an average CGR Score of 112%, which is in the Excellent level (more than 80%). The ranking is in the Excellent level or 5 symbols in the Corporate Governance Report (CGR) project for the year 2023.



# Anti-Corruption

The Company’s anti-corruption policy applies to the board of directors, executives, and all employees within the Company and its affiliated entities. This policy extends to subsidiary companies, joint ventures, or other entities over which the Company exercises control, as well as business agents representing the Company.

The Company has joined the United Nations Global Compact, a UN initiative to combat corruption. In 2013, it was one of the first 22 companies to be certified as a member of the Thai Private Sector Collective Action Against Corruption (CAC) project. As a result of its transparent business practices and its efforts to prevent

corruption at all levels, the Company was awarded a third renewal of its CAC membership in 2022, following its first renewal in 2016 and its second in 2019.

In addition, the Company has conducted a corruption risk assessment covering all of its core businesses, as well as investments in other businesses. The assessment was based on the CAC project’s assessment principles, which consider the “likelihood” of corruption occurring and its “impact”. In 2022, the Company identified six work processes as having significant risk based on the assessment and has developed plans to prevent and mitigate the impact of these risks.

## Anti-Corruption Actions Targets

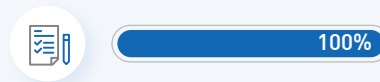
1. Communicate policy and guideline to the management and employees at all levels within Bangchak Group.

## Anti-Corruption Achievements

Acknowledgement and Compliance with the CG Policy  
(Disclosure 205-2)



Conflict of Interest Report via HR-Services system annually or in the event of any information changes  
(Disclosure 102-25)



### Corruption Complaints (Disclosure 205-3)



In 2023, there were 3 whistleblowing complaints submitted to the Internal Audit Department via [ico@bangchak.co.th](mailto:ico@bangchak.co.th) regarding corruption or unethical behavior of subsidiaries. The complaints were handled in accordance with the complaint management process, including setting the preventive measures to prevent similar incidents from happening and also report the outcome from the complaint handling to the complainants.

### Complaints in 2023



#### Ethics

Number



#### Sexual Harassment

Number



#### Corruption

Number



#### Customer Personal Data

Number



#### Bribery

Number



#### Money Laundering or Insiders' Trading

Number

The Company has used the findings of the complaint investigation to improve the relevant work processes and make them more efficient.

### Anti-Corruption Actions Targets

2. Promote business partners to comply with the policy according to the business partner's code of ethics and to join and become a certified member of the CAC.

- The Company has communicated the Code of Conduct for Business Partners through its annual business partner seminar, as well as through the registration of new business partners. All business partners (100%) have acknowledged and agreed to comply with the policy.
- The Company encourages its business partners to become certified members of the CAC. This year, the Company has publicized and communicated to its business partners to participate in CAC training every quarter. Online seminars have been organized via the WebEx system since 2013. As of now, 136 business partners have declared their commitment, and 10 companies have been certified this year, 8 of which are business partners and 2 are subsidiaries. As part of its plan to support and advise its subsidiaries to become certified member of the CAC, BCPG Public Company Limited has been re-certified for the second time, and BBGI Public Company Limited has received CAC Certification for the first time.

## Communication and Activities to Support Anti-Corruption

The Company has promoted anti-corruption as follows:

- For executives and employees, the Company has established a system for reporting personal information and potential conflicts of interest (Conflict of Interest Report System) annually through the online HR portal (HR-Services). In addition, to prevent conflicts of interest, new employees or employees who have changes in their information can report their information in this system.
- The Company has developed the BCP Blackout Period Application, a system for listing the names of insiders (Insider List), in case of an event with inside information, and a blackout period for trading securities (Blackout Period) until 1 day after the information has been fully disclosed to the public. This is to comply with the Code of Ethics on the Use of Inside Information, which is set out in the Company's Corporate Governance (CG) Policy.
- The Company requires employees to take a test on the Corporate Governance Policy through the online knowledge management system (BCP KMS). In 2023, the Company promoted knowledge and understanding of good governance, internal control systems based on the Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework, the importance of using personal data under the Personal Data Protection Act B.E. 2562, and human rights.
- The Company has developed CG e-Learning related to good corporate governance policies to demonstrate relevant case studies in a tangible manner and allow employees to self-study.
- The Company promotes trade partners to become the certified members of the Collective Action Against Corruption (CAC) project of the Thai private sector and also publicizes participation in training with the CAC every quarter. From continuous support for trade partners since 2013 to the present, there are 136 trade partners who have declared their intentions, and this year there are 10 companies that have received certification, divided into 8 trade partner companies and 2 subsidiaries. As a result of the Company's plan to support and advise its subsidiaries to receive certification as a collective action against corruption of the Thai private sector (CAC Certification), it resulted in BCPG Public Company Limited receiving the renewal of CAC certification for

the second time and BBGI Public Company Limited receiving CAC Certification for the first time.

- From the improvement and development of good corporate governance operations and disclosure of information according to the CGR 2023 survey criteria, the Company received an average CGR Score of 112 percent, at the Excellent level (more than 80 percent)
- The Company gives importance and emphasizes the policy of not accepting gifts in every festival and on any other occasion, in order to elevate good corporate governance and establish good standards in conducting business for all stakeholders in a fair and just manner.



- Communication on good corporate governance, doing good, having morality and ethics, opposing corruption, internal control, and human rights and work, including the practice of various good corporate governance policies, video clips, made into 2D Animation and disseminated on the BCP KMS system of the Company.
- Establish CG e-Learning regarding good corporate governance policies to illustrate relevant case studies in concrete ways, allowing employees to study on their own.
- Organized seminars on the topic "Fiduciary Duties and the role of directors in each important business issue at present" to establish a good foundation in conducting business with a transparent manner, good corporate governance, and opposing corruption, and through the right practice of directors and executives.

- On October 20, 2023, the Company organized the CG Day event for the year 2023 (18<sup>th</sup> year) to create awareness of the importance of compliance with good corporate governance principles. This year, the Company arranged for a lecture on the topic “Passing on the Power of Goodness, the More Sharing, the More Sustainable” lectured by Mr. Prommeth Benjarongkij, Director of the Thai Private Sector Collective Action Against Corruption (CAC), to executives and employees of the Company in the Bangchak group.
- Participated in the Anti-Corruption Day event for the year 2023, organized by the Anti-Corruption Organization (Thailand), to create awareness, stimulate people in society to see the problem of corruption occurring in Thailand, and support the public to participate in checking corruption and promoting the disclosure of information of the public and private sectors to create transparency and verifiability. The Company has shown its intention in the anti-corruption activities continuously every year.



## Anti-Corruption Policies

The Company has promoted anti-corruption as follows:

- Communicate the “No Gift Policy” during the festival and on any other occasion to employees, subsidiaries, and external stakeholders, to reinforce the Company’s commitment to establishing good standards in conducting business for all stakeholders in a fair and just manner.



- Do not accept gifts or any other items regardless of value on any occasion, and do not accept or give hospitality, and other expenses that are unnecessary and inappropriate for state officials or persons doing business with the Company. If the value received is unusually high, employees must refuse to accept and report to the supervisor for their acknowledgment.
- Donations shall be limited to those for public charity purpose only. Also, the funds supporting the Company’s business must not be used as an excuse for corruption. There must be clear and consistent evidence with the Company’s regulations.
- The Company is politically neutral and does not have a practice to provide political assistance to any political party, whether directly or indirectly. It does not accept the transfer or change of property status, or support the transfer or change of various properties related to wrongdoing, to prevent anyone from using the Company as a channel or tool for money laundering, concealment, or disguising the source of illegally obtained assets. In addition, it ensures that there is an auditing process and record transactions and financial facts or various assets carefully, correctly, and legally.
- The Company prohibits hiring state employees or state officials that may cause a conflict of interest. The Company selects personnel who used to be state employees according to the criteria set by the Company, so as not to use such actions as a return for any benefits, and discloses information for transparency and verification.

- The Company has internal control covering financial, accounting, data recording, and other internal processes of the Company related to anti-corruption measures, and evaluates the results of self-control (Control Self-Assessment) to discuss the results of internal control that personnel perform.
- The Company has risk management guideline to prevent and suppress corruption and misconduct by analyzing the risks of business operations, determining the level of importance of risk, and measures appropriate to the assessed risk, along with monitoring the progress of the risk management plan regularly.
- The Company has internal audits to ensure that the established internal control system and risk management help the Company achieve the set goals, including checking the performance of all units to comply with the regulations, rules, and help find defects, weaknesses, and provide advice in developing the operating system to be efficient and effective according to good corporate governance principles.

## Idea Sharing

The Company continuously supports trade partners in inviting and advising them in the preparation of manuals and anti-corruption policies, including various related advice as a guideline, and promote trade partners to join the collective and become the certified members of the CAC through various online channels. Since 2018, the Company has arranged for benefits for trade partners who are the certified members of the CAC as follows:



- ✓ **Receive a bonus score of 1 - 2%** for technical scores



- ✓ **In case there are several lowest prices**, partners who have received CAC certification will be selected

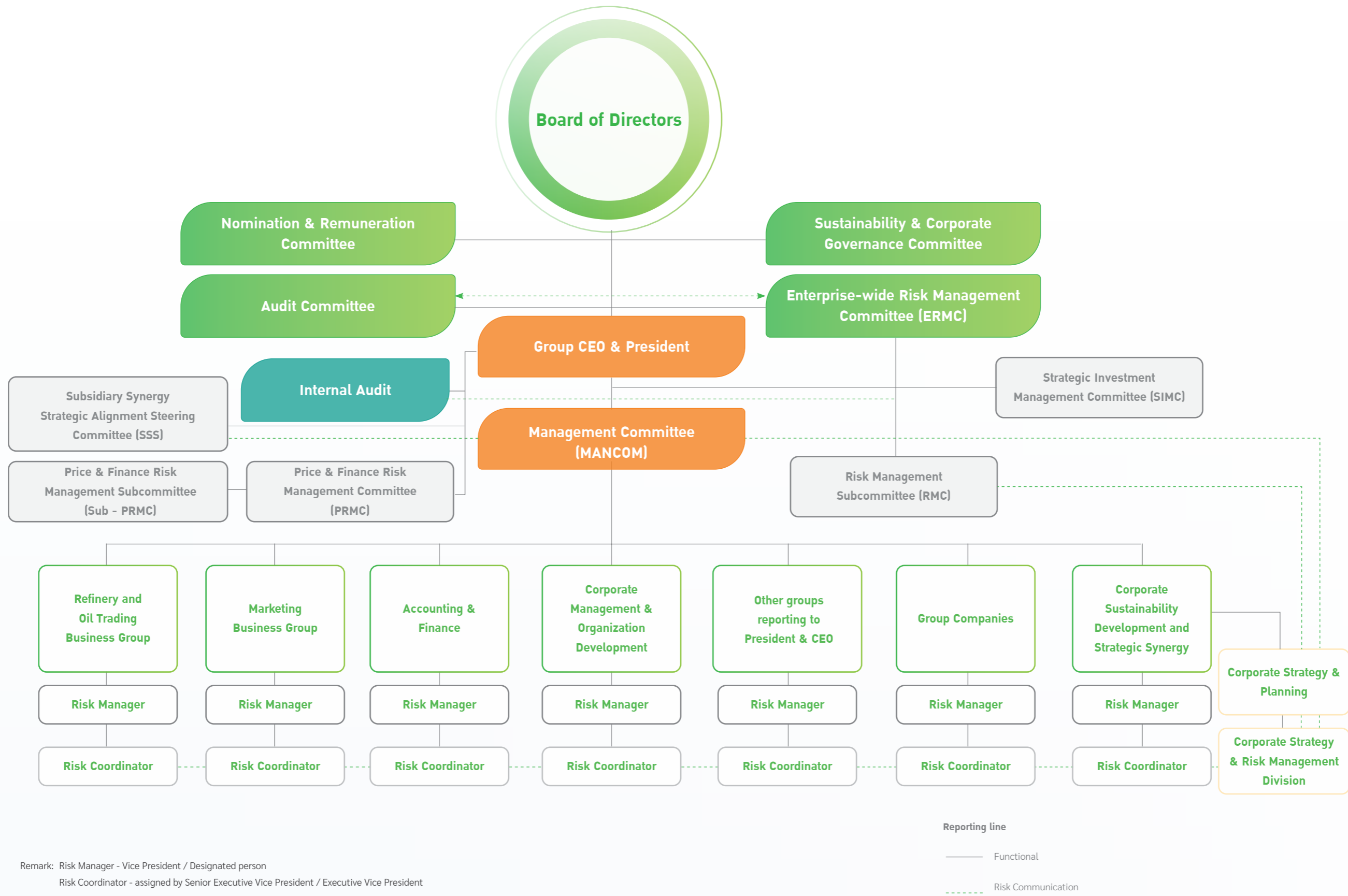
## Risk Management

### Risk Management Policy and Plan

Over the past 19 years, the Company has integrated a risk management framework into its operations, adopting international standards such as COSO ERM and ISO 31000 to outline approaches for preventing and mitigating various risks that could prevent the organization from achieving its objectives. This is to assure stakeholders that the Company can operate under the rapidly changing and volatile current environment. Management and employees at all levels within the organization, including joint venture companies, participate in operating according to these standardized

risk management systems, alongside the process of strategic planning for the organization which aligns with policies for sustainable business development that consider environmental, social, and governance (ESG) factors. The Company continuously monitors risks every quarter, overseen by a corporate risk management committee, to ensure the achievement of business objectives in accordance with the organizational risk management structure, as illustrated.





Remark: Risk Manager - Vice President / Designated person  
 Risk Coordinator - assigned by Senior Executive Vice President / Executive Vice President



The Enterprise Risk Management Committee (ERMC) is responsible for establishing policies, risk management strategies, developing the risk management system, fostering cooperation in risk management at all levels of the organization, and ensuring that the Company manages risks effectively. Additionally, there is the Risk Management Committee (RMC), tasked with developing the risk management system, setting risk management policies and objectives, preparing, reviewing risk management plans, and monitoring the progress of risk management plan implementation. This includes considering and reviewing changes in the internal and external business environment. The Corporate Strategy and Risk Management Division, along with the Corporate Strategy and Planning Department, which reports directly to the Senior Executive Vice President of the Corporate Sustainability Development and Strategic Synergy, are responsible for operating the organization's risk management system, monitoring, and promoting the implementation of organizational-level risk management.

For business group/division level risks, the Company delegates division managers to manage the risks and report to the Senior Executive Vice President of the respective business group/division. Additionally, a Risk Coordinator is appointed to ensure that operations are executed at the practical level in each division, which includes managing organizational-level risks originating from the specific business group/division. The Company has promoted all divisions within the Bangchak Corporation Group to regularly assess risks and formulate risk management plans annually. This requirement is set as a performance indicator, affecting the annual performance evaluation of employees. Clear specifications are provided that each department must develop a risk management plan and obtain approval from their superiors within the first quarter of the year. Moreover, training is organized annually to enhance knowledge in risk management and business continuity management, such as courses in Business Continuity Management and Risk Management. Additionally, the Company fosters an understanding of risk management through the BCP-KMS (internal knowledge platform).

For monitoring and auditing the effectiveness of risk management, the internal audit department is responsible for regularly inspecting the risk management processes

according to the approved schedule and reporting to the Audit Committee (AC) to ensure that the internal audits are appropriate and effective in managing and controlling risks independently. The most recent risk management audit was conducted in 2021. Additionally, coordination between the Audit Committee and the Enterprise Risk Management Committee (ERMC) includes joint meetings to foster a mutual understanding of risk issues and appropriate internal audits.

## Risk Management Results

In 2023, the global economy began to recover from the COVID-19 pandemic, but concurrently, tensions between Russia and Ukraine persist. Global geopolitical conflicts continue to impact overall economic conditions, with a gradual recovery from high inflation rates and rising interest rates. Other critical issues include climate change, security, environmental impact, societal and community welfare, legal compliance, anti-corruption efforts, vigilance against cybersecurity threats and changes in government policies. In response, the Company has been monitoring, assessing risks, tracking overall impacts, and developing risk management plans, involving joint venture companies, to ensure risk control and mitigate potential business disruptions to an acceptable level. Furthermore, the Company has developed risk management plans in parallel with operational strategies, dividing them into 2 scenario planings to accommodate anticipated situations and establishing trigger points for adjusting operational plans to align with changing circumstances.

Furthermore, to ensure continuity and sustainability in operations, the Company has incorporated anticipated trends and environmental factors expected to affect business operations, megatrends, and global risk into its mid-to-long term risk management. These factors include industry competitiveness, economic conditions, consumer behavior, environmental and climate change from global warming, energy transition, energy security, technological advancements and innovations including alternative energy technologies, energy storage, electric vehicles, biotechnology, and various governmental policies. Additionally, the Company gathers stakeholder needs and expectations to analyze impacts and trends for long-term risk management strategies, aligning with organizational strategic planning for mutual sustainability.

## Risks to the Company's Business Operations

In this regard, the Company has established a risk framework divided into: 1) Organizational Risk Management, 2) Investment Project Risk Management, and 3) Business Continuity Risk Management. This framework enables appropriate assessment and development of risk management plans, with progressive strides in operational execution as follows:

### Organizational Risk Management

This involves assessing the primary risks to the organization, stemming from both internal and external factors, including future trends that may impact the organization's objectives in the short, medium, and long terms. This encompasses strategic, operational, financial, and reputational risks in which severity and likelihood of occurrence are evaluated, and risks are prioritized using a risk matrix, categorizing them into four levels: very high, high, moderate, and low risk. Moreover, monitoring and surveillance of potential risk occurrences are conducted through key risk indicators, complemented by defining risk appetite and tolerance levels. Additionally, supplementary risk management plans are devised to mitigate potential impacts on operational objectives. An example of monitoring and vigilance over financial risks is the scenario of inventory loss due to fluctuating oil prices, impacting the Company's earnings before interest, taxes, depreciation, and amortization (EBITDA). This risk is classified as very high-risk, therefore, to track, monitor, and mitigate the impact of this risk, the Company monitors the crude oil price risk through the Brent Crude Oil price index. The risk appetite level is set at USD 80 per barrel, with a risk tolerance level of USD 70 per barrel. This information is utilized to efficiently manage raw material procurement and inventory. For the example of monitoring and vigilance over reputational risks, utilizing accident statistics as a risk metric plays a crucial role in assessing the Company's trustworthiness and addressing broad complaints. Categorized as a very high-risk area with a risk tolerance threshold for incidents of less than 1 incident, the Company implements preventive measures and risk reduction strategies. One such strategy involves establishing a Process Safety Management (PSM) system within the production processes.

The Company has conducted sensitivity analysis as part of its risk management process, particularly in financial matters. For instance, in a scenario where there is a change in Gross Refining Margin (GRM) by every 0.1 USD per barrel, it is estimated to have an impact of approximately THB 45 million on Core Profit After Tax (Core PAT). Additionally, risks stemming from non-financial changes are also considered. For example, disruptions to the refining process due to factors such as flooding exceeding 1.7 meters could lead to service interruptions at gas stations, potentially affecting the Company's business operations.

In 2023, the Company identified 7 key risk areas at the organizational level that required monitoring. These areas include fluctuations in crude oil prices, refining costs, inability to adjust retail fuel prices, potential for severe accidents, and community complaints and stakeholder concerns, necessitating ongoing monitoring and management to mitigate their impact on operations and performance.

### Strategy

#### Risk stemming from economic uncertainty and volatile energy prices

- Due to geopolitical tensions, particularly between Russia and Ukraine, there's escalated disruption in supply chains, leading to heightened energy and consumer goods prices, high inflation rates in many countries, especially in major economies. This also affects maintaining stability in domestic retail fuel prices, potentially impacting refinery margins, inventory gains/losses, and possibly the inability to adjust retail prices at service stations. The Company has risk management plans in place to address these challenges as follows:
- The refinery and oil trading business group closely monitor fluctuating oil prices and undertake measures to mitigate some price risks, including securing sufficient funds to support oil procurement for the oil trading business by BCP Trading Pte. Ltd (BCPT).
- To accommodate the uncertainty, the refinery and oil trading business group aims to develop niche refinery products by producing unconverted oil (UO) from the hydrocracking unit to be used as feedstock for basic lube base oil and paraffin wax for the candle, paper coating, and adhesive industries. There are plans to



enhance production capacity of heavy oil not converted to UO from the hydrocracking unit to 92 million liters per month, along with plans to extend the routine maintenance shutdown period from every 3 years to every 4 years (Turnaround Maintenance Cycle).

- The marketing business group has managed to maintain its market share at the second position (according to data from the Department of Energy Business) by setting targets that ensure each station has a unique design blended with the brand identity of the Bangchak brand. As of December 31, 2023, there were 2,219 oil service stations, an increase attributed to the acquisition of certain assets from Bangchak Sriracha Public Company Limited. The Company has elevated service standards to maximize customer satisfaction through customer empathy, customer relationship management, service development, and the implementation of digitalization, delivering a superior experience under the concept of “Your Greenovative Destination.” Furthermore, the focus remains on expanding non-oil businesses in continuous collaboration with partners. In the current year, the Company’s coffee shop business, Inthanin, aims for continuous expansion, both within and outside oil service stations, resulting in a total of 1,020 branches by the end of 2023.
- Under the concept of Greenovative Product, the Company’s developments and promotions have led to increased sales of high-quality products, including Bangchak HI Premium 97, the highest octane gasoline in the market, Bangchak HI Premium Diesel S, with the highest cetane number in the diesel group, and Bangchak E 20 S EVO, a high-quality E20 gasoline. Moreover, all three products also meet Euro 5 standards.



- BBGI Public Company Limited has adjusted its ethanol production capacity to align with market demand and changing raw material prices according to its sales management plan in order to mitigate the impact of continuously high raw material prices throughout the year.

## Operations

### Risk arising from digital technology changes and cyber threats

The evolution and rapid development of digital technology and cyber threats are external factors that have become increasingly complex and dynamic. Given the current competitive business landscape, which relies heavily on modern technology and interconnected data systems via the internet to enhance efficiency and customer experience, ensuring the security of the organization’s information technology systems is paramount. Therefore, the Company has undertaken preparations to adapt to the advancements and changes in digital technology, while also addressing the risks associated with technology that could potentially severely impact current business operations as follows:

- Establishing a Digital Technology Center tasked with planning, monitoring, and sourcing digital technologies to prepare for rapid technological changes. This initiative aims to align with evolving consumer behaviors, enhance competitiveness by improving operational processes, and increase service efficiency. Additionally, digital technologies are being further applied, including:
  - The Digital Payment project entails adopting Mobile Electronic Data Capture (EDC) systems to facilitate contactless payments at gas stations, thus circumventing physical contact. Customers can make payments by scanning QR codes through banking applications or PromptPay, or by using contactless credit card terminals, enabling them to simultaneously accumulate certain member points.



- Developing personalized marketing involves utilizing analytics technology to analyze the behavior of individual consumers. This enables the design of services that cater to the specific needs of each consumer, thereby enhancing satisfaction with the service experience.

- Promoting the transition of work processes into digitalization to enhance efficiency and reduce turnaround time can be achieved by leveraging various digital tools such as Robotic Process Automation (RPA), Power BI, or Power Apps.
- Establishing a cybersecurity department, tasked with planning, monitoring, vigilance, testing, and acquiring tools to mitigate cyber threats, which continuously evolve in complexity and frequency each year. The Enterprise risk management committee prioritizes vigilance and ensures risk management readiness in case of business process interruption due to cyberattacks, by procuring additional security tools for the data center, assessing system vulnerabilities promptly, and promptly closing any identified gaps, while closely monitoring and tracking risk indicators. Additionally, measures have been implemented to enhance cybersecurity readiness, including the establishment of a threat intelligence function for continuous monitoring through security system alerts. An incident response plan has been developed, along with regular drills conducted at least annually to increase preparedness. Furthermore, security measures have been intensified with multifactor authentication to prevent identity breaches, zero trust principles for constant identity verification, and data backup systems to prevent data loss and ransomware attacks. Backup centers are in place to ensure uninterrupted business operations, alongside ongoing employee training and awareness programs on cybersecurity threats. Moreover, efforts have been made to achieve ISO 27001 certification for the latest 2022 standard, with enhancements for ISO 27032 and ISO 27018 for cybersecurity data management systems and personal data security management, respectively.
- Furthermore, the Company continues to manage the Refinery Cybersecurity System project continuously to mitigate the risks of cyberattacks or interruptions that may occur, especially to the oil refining process, since 2020. The Company has also maintained ISO/IEC 27001 (Information Security Management) certification for the latest 2022 standard, covering the distributed control system of the oil refinery, ensuring confidence in the continuous operation of the Company's oil refining process without interruption from cyberattacks.

- The Company also maintains regular updates and provides internal training to its employees to raise awareness about the importance of information technology security within the organization. Additionally, regular employee awareness testing is conducted every quarter to ensure their understanding and vigilance regarding cybersecurity.

### **Risk of credibility from online social media platforms (Social Media) (Emerging Risk)**

Currently, communication channels preferred by consumers for exchanging views on products and services have shifted towards online platforms, enabling rapid responsiveness to their needs. Conversely, negative news or distortions can swiftly disseminate widely online, potentially impacting the Company's credibility. Consequently, there are dedicated units monitoring and managing online communication channels continuously to ensure effectiveness in both normal and crisis situations, minimizing risks and preparing for potential crises promptly.

## **Financials**

### **Risk of price volatility in oil and raw material prices used in production**

This impact on the uncertainty of income in the petroleum business and other business streams within the organization. Consequently, the Company has devised risk management plans to mitigate the volatility of oil and raw material prices in both the short and long term, as follows:

- Implementing mechanisms to monitor the fluctuations in oil prices, price differentials between crude oil and refined oil, and developing new risk management tools regularly with the Price and Finance Risk Management Sub-Committee and Committee overseeing and deciding on risk mitigation options, reporting directly to the Company's management committee.
- Diversifying risk stemming from agricultural commodity price volatility through investments in BBGI Company Limited's bioproducts business. This enhances competitiveness in producing and distributing biofuels, biodiesel, and ethanol, while aiming to expand the high-value bioproducts business in the future, thereby creating added value for the business.

## Social/ Environmental

### Risk from operational activities that may impact communities and society

With a steadfast commitment to conducting business in harmony with communities, society, and the environment sustainably, and recognizing the importance of risk management to mitigate impacts on both safety and the environment, the Company has continually enhanced and developed its production processes. This is aimed at ensuring safe operations with minimal impact on communities and society. Additional risk management measures have been implemented as follows:

- Continuously developing occupational health and safety systems according to international standards to elevate health and safety in the workplace and enhance processes. By adhering to standards such as ISO 45001, ISO 14001, and ISO 50001, the Company ensures a systematic approach to processes, considering risks, opportunities, and legal requirements.
- Managing workplace risks through continuous Safety Integrity Level (SIL), Reliability Centered Maintenance (RCM), and Risk-Based Inspection (RBI) systems ensures comprehensive coverage of both equipment and processes. This approach facilitates accurate advance planning for equipment maintenance, ensuring optimal effectiveness.
- Conducting a Hazard and Operability Study (HAZOP) and implementing a Process Safety Management System (PSMS) at every relevant stage of the refining process to ensure compliance with global standards and identify potential risks from operations.
- Installing online air quality monitoring devices and connecting them to automatic display screens around the Bangchak Phra Khanong Refinery and nearby areas allows the local community to access real-time air quality data. This initiative aims to provide transparency and assurance to the broader community regarding air quality standards.
- Organizing educational activities aimed at raising awareness and fostering a sense of safety within the community, particularly focusing on schools and condominiums near the refinery, involves training sessions on evacuation procedures, fire suppression, and basic first aid. Additionally, implementing a comprehensive communication and emergency alert system throughout



Furthermore, in overseeing joint venture businesses, the Company also monitors and vigilantly assesses risks that may arise and impact the communities in each area to prevent communities or societies in those areas from experiencing discomfort or adverse effects from production processes or operations. For example, monitoring risks related to wastewater management and consistently conducting Corporate Social Responsibility (CSR) activities with neighboring communities. The organization's risk management committee is responsible for tracking operational outcomes throughout the year.

### Other Risks

#### Risk of climate change, environmental alterations and greenhouse gas reduction measures

The Company managed business operations that may impact global warming, focusing on being part of energy reduction efforts, reducing the causes and quantities of carbon dioxide and greenhouse gas emissions, as follows:

- Demonstrating a commitment to low-carbon business operations, leading the energy transition and continuously increasing the proportion of green business activities to reduce carbon emissions. In the past, the Company has effectively communicated and fostered collaborative experiences through various channels, ensuring maximum value creation throughout the business value chain through the Carbon Markets Club, with 165 organizational members and 607 individuals.
- Setting the goal of achieving carbon neutrality by the year 2023 and zero greenhouse gas emissions by the year 2050 under the framework of BCP 316 NET, encompassing 4 key approaches: B = Breakthrough Performance: Emphasizing highly efficient production processes, continuous improvement, and optimization of operations to reduce carbon emissions and environmental impact. C = Conserving Nature and Society: Supporting the creation of environmental balance by promoting carbon sequestration through natural means. P = Proactive Business Growth and

Transition: Transitioning business towards clean energy through technology adoption for sustainable growth and development.

- Utilizing natural gas to produce electricity and steam in co-generation power plants, thereby using it as the primary fuel in the oil refining process to replace fuel oil which enhances energy efficiency in the refinery and reduces carbon dioxide emissions.
- Addressing the issue of pollution from smoke and PM 2.5 particles by distributing low-emission diesel oil. This is achieved through the production of diesel oil with significantly reduced sulfur content, up to 5 times lower, with sulfur content below 10 parts per million (PPM). The reduction in sulfur content helps mitigate particulate matter emissions from combustion and also reduces sulfur dioxide emissions. These low-emission diesel oils are distributed in the Bangkok metropolitan area during periods of severe pollution crisis.



- Adapting its resource utilization practices through the implementation of the 3R strategy: Reduce, Reuse, and Recycle. This strategy emphasizes the importance of conducting business in an environmentally sustainable manner. For example, the Company encourages the donation of plastic bottles at service stations, which are then recycled to produce community-oriented products. Additionally, the Company has initiated projects to recycle used engine oil containers by reprocessing them into plastic pellets, which are then reused to manufacture new oil containers. This approach aims to conserve resources, reduce waste generation, and promote the sustainable circulation of resources for the benefit of the environment, society, and communities in the long term.
- Reducing plastic usage in its non-oil business activities, which includes minimizing plastic packaging by adopting the use of lid-drinks for cold beverages to eliminate the need for straws. Additionally, consistently switching to biodegradable plastic packaging (Bio-cups) that can naturally decompose where customers are encouraged

to collect used cups and exchange them for discounts. Moreover, donating compostable cups to the Department of Forestry through the “Cups for Seedlings” project, totaling over 1 million cups.

- The “Tod Mai Ting” project by BSGF Company Limited encourages the public to avoid disposing of used cooking oil improperly and instead deliver it to designated collection points and “Tod Mai Sum” which aims to prevent environmental damage caused by improper oil disposal and to discourage the reuse of cooking oil, which can have adverse health effects due to oil degradation and the formation of harmful compounds. The used cooking oil collected is then sold to selected service stations or purchase points specified by the Company. The oil is subsequently processed into sustainable aviation fuel (SAF) to meet the demands of the BCG economic model, encompassing the Bio-Circular-Green Economy, thus completing the sustainable cycle.



- The “Mobile Waste Collection” project spearheaded by the Company underscores its commitment to environmental stewardship and sustainability in society. The Company actively promotes waste management practices aligned with the principles of the Circular Economy, aiming to reduce waste at its source to mitigate the societal impacts stemming from indiscriminate waste disposal in landfills. Through this initiative, the Company advocates for proper waste management practices and aims to reduce air pollution resulting from landfill emissions. Moreover, the Company collaborates with partners to support environmental conservation by transforming service station premises into designated waste collection points.



## Risk of flooding and water shortage (Emerging Risks)

The water crisis is emerging as a global risk in the future, exacerbated by the effects of global warming, which impacts the uncertainty of water resources. Coupled with a growing population, this leads to increased demand for water resources for consumption. Therefore, the Company recognizes the importance of managing production processes to reduce water consumption, as follows:

- Monitoring risks arising from climate change, such as drought situations which involves tracking and monitoring daily water data from the metropolitan waterworks to assess the risk of water shortage that may impact production processes. Moreover, securing emergency water sources as substitutes in production processes in the event of water shortage and establishing monitoring measures and response strategies for risks associated with decreasing water levels in the Chao Phraya River, which may affect boat navigation. Additionally, precautions are taken to minimize the impact on all stakeholders affected by drought situations. Furthermore, monitoring flood situations which includes tracking and monitoring water levels in main rivers during the rainy season and inspecting flood prevention equipment in high-risk areas as well as developing a risk management to address opportunities and severity levels, ensuring business continuity with confidence.
- Setting goals for water use and water circulation within the refinery and monitoring through the Safety, Health, Environment, and Energy Management (SHEEM) committee and the Safety, Health, Environment, and Energy Promotion (SHEEP) committee. These committees oversee the implementation of activities aimed at providing knowledge on reducing water usage both within the production process and in office usage.
- In 2023, water consumption was reduced through the implementation of the 3Rs strategy. The reduction was achieved by employing a Micro-filtration System and Reverse Osmosis System for water purification in the tap water quality improvement process. Additionally, water reuse was implemented by utilizing condensate water and stripped water back into the production process, amounting to approximately 90,000 cubic meters. Moreover, treated wastewater from the wastewater treatment unit was further purified using the Reverse Osmosis System for recycling, resulting in an additional

180,000 cubic meters of recycled water. In total, these 3Rs initiatives equated to a water usage reduction equivalent to the consumption of 3,865 households.

- Furthermore, in 2023, the Company conducted a water stress assessment using the AQUEDUCT program which revealed that certain areas around some oil refineries fell within the medium-high (20-40%) category, which, according to the definition, indicates that they have not yet reached a significant level of water stress.
- The implementation of 2 additional chillers has commenced to enhance operational efficiency and reduce water loss from the cooling system which has resulted in a reduction of water usage from the tap water supply by 5 cubic meters per hour (5%).
- Encouraging water conservation across the Company's subsidiaries starts with the bio-product manufacturing sector which have initiated the reutilization of water from production processes. Moreover, a project has been launched to excavate raw water wells to secure extra water reservoirs for factory operations.

## Risk of conducting business without considering social development

Social development is considered an integral part of the corporate governance of Bangchak. It is outlined in the organizational culture and employee culture. Moreover, in order to actively contribute to sustainable social development, active participation is encouraged.

- The Company emphasizes environmental and social care as part of its organizational culture, and has established policies on business responsibility to respect human rights as guidelines for the Company's board, executives, and employees. This commitment is upheld through adherence to global agreements such as the UN Global Compact, international standards like ISO 26000 on social responsibility, the Universal Declaration of Human Rights (UDHR), the United Nations Guiding Principles on Business and Human Rights (UNGPs), and the Women's Empowerment Principles (WEPs) which serve as a model for the Company's continuous growth and efforts to foster inclusivity and equality.
- The Company has consistently organized the "Arn Kian Rian Sanook Pun Dek Jew Pen Dek Jaew" initiative in response to the significant challenge of children's literacy and writing difficulties in the country. Recognizing the importance of addressing this issue, the project operates under the Bai Mai Pun Suk Foundation where

Kru Koi - Naiduangta Patummasoot, an educator from the Thungsak Learning Center, serves as the project's lead trainer, providing training to elementary school teachers from 38 schools nationwide. The training aims to enhance teachers' understanding of effective teaching methodologies, classroom management techniques, and methods for assessing students' Thai language proficiency. This initiative aims to improve the success of teaching and learning objectives and contributes to addressing the country's literacy challenges. Furthermore, it aligns with the United Nations Sustainable Development Goal 4, which focuses on achieving inclusive and equitable quality education for all.



- The “Seedling Cups” initiative is another activity where the Company accepts returned biodegradable beverage glasses from employees of the Company’s subsidiaries, as well as customers of various outlets nationwide, and delivers them to the Department of Forestry. These glasses are then used for seedling propagation to replace the use of black plastic bags, aiming to reduce waste and promote green spaces.

## Investment Project Risk Management

In addition to considering the alignment of organizational strategy and business returns, investment project risk management is crucial and necessary for business operations. This involves analyzing the project risks that may arise during various stages of project execution, including:

- Development Phase Risk
- Construction Phase Risk

- Operation Phase Risk encompasses various risks that may arise during the operational phase of a project, including operational, financial, tax, business, and reputation risks
- Natural Disaster Risk

The Company has mandated that significant investment projects crucial to its operations must receive approval for risk management plans from the Enterprise risk management committee to ensure appropriate risk management, community and environmental impact mitigation, and goal achievement. In 2023, the committee provided recommendations and observations on issues related to the development of risk management plans for projects, such as investments in BSGF Company Limited, projects associated with sustainable aviation fuel sourcing, natural resource ventures, and investments in companies like Esso (Thailand) Public Company Limited.

## Business Continuity Management: BCM

To ensure continuous business operations even in times of crisis, the Company has implemented a business continuity management system, focusing on readiness in strategy, processes, and resources. This effort has been certified under the ISO 22301 business continuity management standard, covering the head office, Bangchak oil refineries, Bangchak oil distribution centers, and Central Region Business Office and Bang Pa-In Terminal since 2013. This certification confirms that the Company is prepared to handle crises efficiently and manage business continuity effectively according to international standards, instilling confidence in stakeholders that the Company can sustain operations, manage crises, and deliver products consistently.

In 2023, there are still global challenges in various aspects regarding the issue of cybersecurity threats. As a response, the Company consistently enhanced its cybersecurity measures and prepared crisis management plans for information systems to address potential cyber threats. Additionally, the Company also prepared contingency plans to respond to frequent occurrences of earthquakes that occurred in the past year.

# Change Management

The Company remains steadfast in the pursuit of operational excellence in change management, aligning with the organization's vision with prioritization on effective management to ensure organizational flexibility, modernized structure, and prepare for forthcoming changes. The Company implements the core principles of Business Process Redesign (BPR), with change management division playing a pivotal role in planning, coordinating, advising, and monitoring progress. Moreover, cultivating new capabilities and knowledge to support ongoing changes, enabling the organization to achieve its predefined goals and reporting operational progress, opportunities, and challenges directly to senior management.

## 2023 Key Operating Results

The Company's business process improvement focuses on enhancing operational efficiency, reducing costs, and meeting customer needs. In the year 2023, significant strides were made in three key areas:



### 1) Oil Refinery and Trading Business Group

consistently carried out the Program Junior Columbus and The Next Creator projects to encourage employees at all levels to participate in improvement projects and extend the scope of opportunities for developing new business ventures that align with the Company's manufacturing processes and products.



### 2) Marketing Business Group

intensified the QCC for MKBG project, opening opportunities for employees at all levels to engage in promoting and advancing initiatives particularly on enhancing customer acquisition and marketing opportunities for business development. Additionally, the establishment of the MK BPR Clinic aimed to consider and recommend guidance on new initiatives, contributing to the practical and impactful development of business aspects.



### 3) Developing 10 Six Sigma Green Belt projects

by utilizing Six Sigma tools to analyze and identify improvements and process control methods for addressing complex manufacturing issues. This initiative has resulted in the creation of new projects with opportunities for value addition, operational cost reduction, and increased efficiency, contributing a value of no less than THB 1.7 billion over the 12-month project duration.

Furthermore, following the acquisition of shares in Esso (Thailand) Public Company Limited, the Company has strategically planned to leverage the **“Economy of Scale, Scope, and Expertise.”** This involves optimizing savings from size, scope, and expertise to implement shared services for affiliated companies, aligning with the 5-year strategy to drive business, human resources, and organizational culture development. The focus is on creating added value, establishing new business models, and implementing innovative strategies that prioritize customers and service quality to enhance operational efficiency.

The Company places significant emphasis on quality and standards. It participated in the assessment for the national quality award (Thailand Quality Award - TQA), using TQA criteria as a guideline for developing management practices, process improvements, and achieving results for becoming an organization with sustainable growth. The Company is the only one to receive the TQA award in 2022 from Thailand Quality Award Office, Thailand Productivity Institute (FTPI), Ministry of Industry, for excellence in management aligned with international standards in the oil refinery and trading business sector. This recognition reflects the positive development in innovation, capabilities, organizational governance, and societal responsibility. In addition, the Marketing Business Group received the Thailand Quality Class (TQC) for the second consecutive year, showcasing improved results in all aspects, including product and process quality, customer relations, human resources, and financial and marketing aspects. Furthermore, the Oil Refinery and Trading Business Group was honored with the Global Performance Excellence Award (GPEA) in 2023

at the World Class level. This prestigious global award recognizes the Company as the first and only oil refinery worldwide to achieve this highest level of acknowledgment. It reflects the Company's position as a world-class oil refinery and a role model in quality assessment standards on a global scale. This accomplishment showcases the ongoing development of management practices in all dimensions of operations, recognized by the Asia Pacific Quality Organization, Inc (APQO) in New Zealand.



## Supply Chain Management

Bangchak Corporation Public Company Limited has shown consistent growth and remains dedicated to sustainable business operations. Effective supply chain management is pivotal for the prosperity of the business. The Company emphasizes transparency, auditability in procurement procedures, and efficient relationship management with all stakeholders. This ensures seamless operations and responsiveness to consumer demands while adhering to corporate governance principles according to the supplier code of conduct for sustainable business development (BCP – Supplier Code of Conduct).

Moreover, the Company places significance on developing the capabilities of procurement personnel within the Bangchak group. This includes imparting knowledge on procurement procedures, strategic sourcing, and expanding the shared database of suppliers to augment competitiveness across the group. Intra-group training sessions encompass various topics such as spending analysis, and price and cost analyses to empower procurement personnel in planning

and strategizing for the procurement of goods and services in each business group.

In managing relationships with suppliers, the Company consistently organizes seminars to provide opportunities for suppliers to comprehend the Company's policies and procurement management guidelines, with a focus on the supplier code of conduct for sustainable business development (BCP - Supplier Code of Conduct). The Company encourages feedback and suggestions from suppliers to continually enhance future collaborations. During 2023, the Company provided knowledge on greenhouse gas accounting, attracting over 40 interested suppliers.

In 2023, the Company acquired shares of Bangchak Sriracha Public Company Limited (Previously Esso (Thailand) Public Company Limited) and registered a name change on November 15, 2023, leading to a business consolidation. In terms of procurement, a centralized approach (Shared Service) was implemented to provide procurement services



## 5-Year Goals

1

### Implementing a Shared Service

model for procurement to improve efficiency, standardize procedures, and compete effectively in the market

2

### Cultivating the Expertise

of procurement personnel in strategic sourcing for various product and service categories, including market analysis for each responsible business group

3

### Reducing Procurement Expenses

by at least 10% of annual budget through efficient cost management

4

### Consistently Promoting

environmentally friendly procurement practices (Green Procurement)

5

### Efficiently Managing

the entire supply chain, including the process of supplier selection, supplier capabilities development, and relationship management, to reduce procurement risks and costs to the Company

6

### Adopting Digital Transformation

to enhance work procedures through technology

## Strategy for 2023

### Expanding the range of products and services that can be collectively procured within the group.

This involves exchanging knowledge through the Community of Practice (CoP) for Procurement, a community that brings together procurement professionals from companies in the Bangchak group

1



### Cultivating supplier capabilities by assessing their supplier

code of conduct and sustainability risks.

This assessment will focus on suppliers classified as Significant Suppliers

2



3



### Developing strategies for procurement

to reduce costs by collaborating and co-developing with suppliers

4



### Selecting new technologies to replace outdated systems,

such as the New Sourcing Platform, emphasizing convenience, speed, and user-friendly features.

efficiently.

## Implementation in 2023

### Adjusting strategies in collaboration with companies in the Group.

Enhancing the procurement procedure within the group to strategically manage procurement through the Community of Practice for Procurement (CoP Procurement) with Spending Analysis and Category Strategy development. This can lead to the successful obtaining of high-quality products and services at reasonable prices, along with expanding shared suppliers. The processes are as follows:

#### Grouping products to improve bargaining power and developing standardized specifications

The main procurement strategy for collaborative implementation is Consolidate Volume, in which similar products and/or services are gathered for bidding processes together to enhance bargaining power, both in terms of price and other service conditions. The strategy began with common products/services such as cleaning and health checks for executives and employees. In 2023, there has been an increase in the number of product and service groups, such as in chemical and specialized inspections works.

Implementing a main procurement strategy through Consolidate Volume to gather similar products and/or services, compete for prices collectively, and enhance negotiation power. The collaborative procurement has led to the consideration of revisiting products/service

specification and scope of work to adhere to the same standard of companies in the Group.

#### Result Collaborative Procurement



Number of Projects Year 2021



Contract Value  
**45,587,450 THB**

Cost Savings  
**2,379,869 THB**



Number of Projects Year 2022



Contract Value  
**105,850,039 THB**

Cost Savings  
**8,522,212 THB**



Number of Projects Year 2023



Contract Value  
**152,838,716 THB**

Cost Savings  
**22,326,973 THB**

#### Vendor List Sharing

Within the CoP Procurement group, there has been an exchange of information on Vendor Lists to broaden the supplier database and enhance opportunities for suppliers to participate in competitive bidding.

#### Vendor Knowledge Sharing

In 2023, the Procurement Department continues its endeavors to support and provide opportunities for suppliers to exhibit new products, services, and technologies to the Company's procurement team and pertinent users. This has been achieved through Vendor Knowledge Sharing sessions, encompassing technologies such as automatic drone technology for inspecting the abnormalities of various tanks or pipes, as well as detecting gas emissions using AI technology to reduce work time, augment efficiency,

broaden inspection coverage, and allow for contractors to enhance their labor cost and workspace management.

## Annual Supplier Seminar

In 2023, the Company acquired Esso (Thailand) Public Company Limited, leading to a business consolidation. Consequently, the Procurement Department adjusted its procurement policy to a centralized Shared Service model and modified the format of the annual supplier seminar. Key suppliers within the group were invited to this event to communicate policies, directions, and the Company's operational guidelines. Great emphasis was placed on the Supplier Code of Conduct to promote sustainable development. The seminar covered the topic "Sustainability as a Key to Business Success", which fosters the awareness of environmental, social, and governance (ESG) aspects of suppliers, thus fortifying the entire supply chain and sustainable business operation.

In addition, the seminar provided additional insights into greenhouse gas management in the "Bangchak Group's Decarbonization Journey" section. It also promoted participation in the Carbon Markets Club, which is Thailand's first greenhouse gas reduction club, supporting carbon credit trading and certification for renewable energy production.

Following the acquisition and business consolidation, the Procurement Department communicated the direction and operational strategies for procurement to encourage suppliers to propose new technologies applicable to the Group's operations. This initiative aimed to streamline processes, reduce costs, and enhance efficiency.

To foster continuous development, the Procurement Department opened the floor for suppliers to inquire, express opinions, and provide recommendations on issues related to working with procurement and end-users. This proactive approach allowed suppliers to submit questions in advance, providing an additional channel for effective communication.

## Workforce Development through Digital Transformation

Based on feedback received during the 2022 Supplier

Seminar and through various channels regarding the complexity of the existing Sourcing Platform, the Company has considered implementing a new Sourcing Platform that is more user-friendly and responsive to the demand of both suppliers and end-user in 2023. This new platform has been selected and is currently under development.

### Result:



An average procurement time of

**32** days



Reduction of procurement costs of

**11.7%**

of the 2023 budget

### Result:



High levels of satisfaction among suppliers with the procurement process

93%



High levels of satisfaction among end-users with the procurement process

95%

## Environmental Promotion

The Company continues to prioritize procurement of environmental-friendly goods and services by maintaining a list of the products and services since 2016. Activities related to construction, maintenance, and cleaning, including the use of environmentally friendly products and Green Label Thailand-certified items, are actively encouraged among suppliers.

The data study revealed that from the environmental-friendly products and services of 24 groups, 20 groups are regularly used by the Company in every year.

### Result:



using **20** groups of environmental-friendly products and services from 24 groups,

which is equivalent to

83%

(target 80%)

## Promotion of Human Rights

The Company places a paramount importance on compliance with human rights within the organization and among suppliers. The Supplier Code of Conduct lucidly communicates ethical standards to suppliers and establishes a well-defined procedure, regarding the severity of

complaints, handling timeframes, mediation procedures, and the form of remedies for each level of severity. The Company also places importance on the taking care of contractor's workforce by ensuring the suppliers comply with labor laws, providing fair wages, and benefits to workers, to align with legal stipulations.

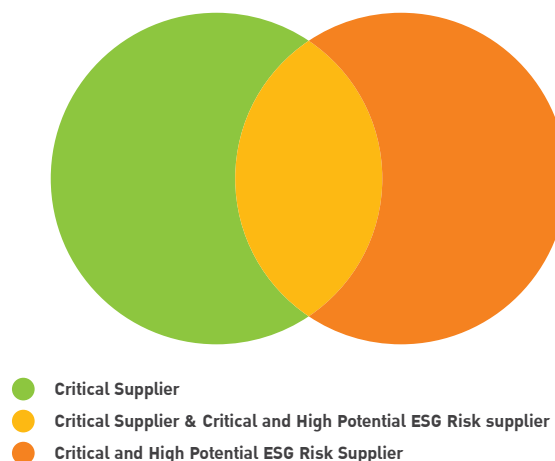
## Sustainable Supply Chain Management

Bangchak Corporation Public Company Limited has been managing its supply chain sustainability from upstream to downstream, incorporating the principles of the UN Global Compact framework to guide its operations with partners and considering sustainable business practices in terms of the Environmental, Social, and Governance (ESG) aspects. In alignment with its procurement principles of clearness, fairness, and professionalism, Bangchak has implemented a Supplier Code of Conduct (SCOC) since 2016. Every new registered supplier must adhere to the SCOC, and continuous adherence to ethical business practices is emphasized with the goal to integrate procurement processes into the Company's business strategy, aligning with international standards for sustainable procurement to mitigate business disruptions and delays caused by unforeseen circumstances. Moreover, managing resources efficiently aims to enhance competitiveness and generate long-term benefits for both Bangchak and its partners, fostering confidence among stakeholders. Additionally, Bangchak conducts sustainable supply chain management in line with Global Reporting

Initiative (GRI) standards, including GRI 308 (Supplier Environmental Assessment) and GRI 414 (Supplier Social Assessment), as well as reporting in accordance with the evaluation criteria of the Dow Jones Sustainability Indices (DJSI).

Bangchak Company has established a framework for sustainable supply chain management in evaluating suppliers to group suppliers in risk management. By evaluating suppliers that are significant to the business, using the criteria for evaluating Critical Suppliers together with the criteria for evaluating Critical and High Potential ESG Risk Suppliers which covers both suppliers that directly supply products and services to the company (Tier-1 Suppliers) and suppliers that provide their products and services through Tier-1 suppliers to the company (Non Tier-1 Suppliers) including encouraging suppliers to apply a sustainable supply chain management framework to reduce risks in their supply chain management.

### Significant Supplier



## The process of sustainable supply chain management are as follows:



The company prioritizes supply chain management, beginning with supplier screening. New suppliers are required to register and acknowledge and adhere to the Supplier Code of Conduct. This commitment serves as an indication of compliance with the Company’s Supplier Code of Ethics and meets the initial procurement criteria.

### Supplier Code of Conduct (SCOC)

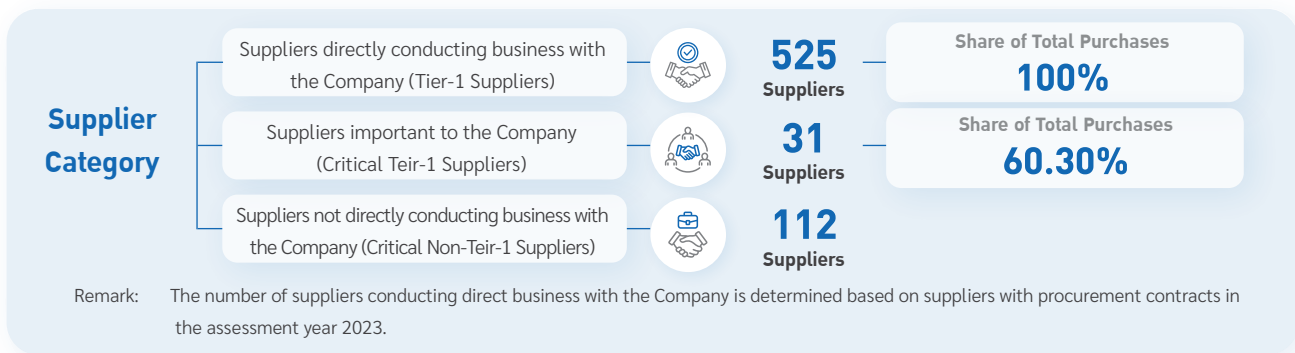
to foster sustainable business development, guided by principles of environmental, social, and governance (ESG) practices. It comprises five categories: (BCP – Supplier Code of Conduct: SCOC)

- Business Ethics
- Labor Practices and Human Rights
- Health and Safety
- Environmental Responsibility
- Community and Social Development

### Supplier Assessment

Determining and analyzing suppliers (Critical Tier-1 & Non Tier-1 Suppliers) to differentiate significant suppliers based on the following criteria:

- Suppliers with high purchase order volume suppliers (Categorized by supplier group)
- Suppliers providing key raw materials, products, and services to the Company’s business processes
- Suppliers in the market with limited players



**The Company conducts regular annual assessments of sustainability risks in supply chain management** which involves grouping suppliers in alignment with risks and importance, aiming to identify Significant Suppliers and emphasizing on assessing suppliers in environmental, social, and economic/governance aspects. If a supplier is found to pose critical or high potential ESG risks (Critical and High Potential ESG Risk Supplier), the Company would provide guidance for improvement and collaboratively develop corrective action or prevention plans, with follow-up and reporting mechanisms. Additionally, long-term development plans are established together to elevate supply chain management, expanding the role of ESG in the supply chain to support suppliers in aligning with Bangchak’s expectations, with a compliance rate of 100% (GRI 308-2, GRI 414-2) which includes:

**Environmental Risk Assessment:** Evaluating the negative impacts resulting from the business activities of suppliers, including greenhouse gas emissions, energy usage, water consumption, resource utilization, pollution emissions, waste generation, and contribution to biodiversity loss. This may entail the Company’s responsibility for environmental restoration efforts.

**Social Risk Assessment:** Evaluating the negative impacts resulting from the business activities of suppliers who fail to comply with laws and regulations, causing harm, unsafe

conditions, damage to life and property, as well as complaints due to non-compliance with human rights and labor practices such as child labor, forced labor, discrimination, and lack of freedom of association and negotiation. This may result in the Company’s responsibility for the damages incurred, including damage to reputation.

**Governance Risk Assessment:** Evaluating the negative impacts resulting from the business activities of suppliers, such as corruption, bribery, conflicts of interest, unfair competition practices, unfair pricing, poor service quality, delayed delivery of goods and services, and failure to comply with procurement contracts. These factors can lead to adverse business consequences, of which the economic value of the damage is assessed daily. The governance risk assessment process involves examining information about the policies and guidelines for preventing corruption of supplier companies, such as those that need to interact with government agencies.

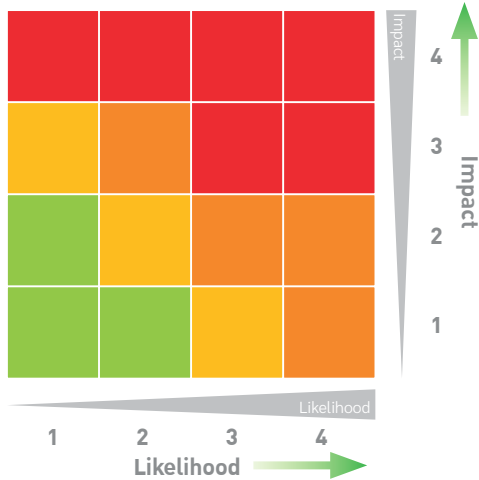
**Risk Level Assessment:** The severity of the impact of suppliers is evaluated on a scale of 5 levels, which are No Risk, Low Risk, Moderate Risk, High Risk, and Critical Risk, in conjunction with criteria related to environmental, social, and economic/governance aspects.

**Likelihood Assessment:** The likelihood of occurrence is assessed based on the frequency of purchasing goods/ services from suppliers.

### Risk Level = Impact x Likelihood

(Environment Risk, Social Risk & Business/Governance Risk)

Risk Assessment Matrix



#### Risk Level Assessment

- Critical Risk Level
- High Risk Level
- Medium Risk Level
- Low Risk Level
- \* No Risk (Impact = 0)

**Risk Level**  
Critical and High Risk

**Mitigation Method**  
Site Visit/ Audit/ Corrective Action Plan/ Performance Improvement/ etc.

In the year 2023, ESG risk assessments were conducted with Tier-1 Suppliers, totaling 525 suppliers, and Non-tier 1 Suppliers, totaling 845 suppliers. It was found that suppliers faced significant and critical risks from their suppliers in the environmental aspect, including risks related to oil spills and fires. In the social aspect, risks included complaints and in the economic/governance aspect, risks included late or non-delivery of goods, delivery of poor-quality products, leading to business disruptions. The Company collaborated with assessed suppliers to develop diverse risk mitigation measures to prevent the occurrence of impacts and risks. This collaboration achieved a 100% success rate in implementing risk mitigation measures, with no termination (0%) of business operations with the suppliers assessed with high risky (GRI 308-2, GRI 414-2) with details as follows:

ESG Risk Issue	Risk Mitigation Plan	Target	Performance
<b>Environmental Risk (GRI 308-2)</b>			
<ul style="list-style-type: none"> <li>• Oil spills/ fires</li> </ul>	<ul style="list-style-type: none"> <li>- Conduct joint emergency drills once a year.</li> <li>- Include clauses in contracts requiring suppliers to comply strictly with transportation requirements.</li> <li>- Obtain insurance coverage for damages and have a guarantee from the transport company to claim damages in case of loss.</li> </ul>	Zero Incident	Incident = 0 case
<b>Social Risk (GRI 414-2)</b>			
<ul style="list-style-type: none"> <li>• Complaints</li> </ul>	<ul style="list-style-type: none"> <li>- Plan ahead for purchasing services/products, referencing the preparation time frame according to the previous Cycle TAM, including monitoring the status of goods after receiving a Purchase Order (PO).</li> <li>- Include penalty clauses in contracts to ensure that suppliers comply strictly with transportation requirements.</li> <li>- Encourage suppliers to install TMS, GPS, CCTV systems, and hold monthly meetings to monitor the performance of the transportation company, including monitoring driver behavior and controlling vehicle speed.</li> </ul>	Zero Incident	Incident = 0 case
<b>Economic/Governance Risk</b>			
<ul style="list-style-type: none"> <li>• Late/non-delivery of goods and delivery of poor-quality products</li> </ul>	<ul style="list-style-type: none"> <li>- Hold daily meetings with subcontractors to discuss updates on plans and progress.</li> <li>- Develop Key Performance Indicators (KPIs) for shipping vessels every quarter (Loss/ schedule/ safety)/ conduct quarterly checks to assess the readiness of vessels. (Terminal feedback)</li> <li>- Encourage subcontractors to install driver fatigue prevention systems in vehicles to enhance safety during transportation.</li> </ul>	Zero Incident	Incident = 0 case

The analysis and gap closure process for environmental, social, and governance (ESG) risks of supplier groups, including raw material procurement, transportation, and products and services.

Tier-1 suppliers and Non-Tier-1 suppliers ESG risk assessment results	The number of suppliers assessed for ESG risk (Suppliers)	High level risks (Suppliers)	Critical level risks (Suppliers)	Gaps closed (Suppliers)
<b>All 525 Tier-1 Suppliers have undergone ESG risk assessments, achieving a completion rate of 100%.</b>				
Environmental Risk (GRI 308-2)	525	15 (2.9%)	9 (1.7%)	<b>24 (4.6%)</b>
Social Risk (GRI 414-2)	525	2 (0.4%)	22 (4.2%)	<b>24 (4.6%)</b>
Economic/Governance Risk	525	17 (3.2%)	13 (2.5%)	<b>30 (5.7%)</b>
<b>All 845 Non Tier-1 Suppliers have undergone ESG risk assessments, achieving a completion rate of 100%.</b>				
Environmental Risk (GRI 308-2)	845	6 (0.7%)	6 (0.7%)	<b>12 (1.4%)</b>
Social Risk (GRI 414-2)	845	13 (1.5%)	6 (0.7%)	<b>19 (2.2%)</b>
Economic/Governance Risk	845	22 (2.6%)	12 (1.4%)	<b>34 (4%)</b>

Supplier Screening Results	2023 Results
<b>Tier-1 Supplier</b>	
Number of suppliers conducting business directly with the Company (Tier-1 Suppliers)	<b>525</b>
Number of the Company's direct and critical suppliers (Critical Tier-1 Suppliers)	<b>31</b>
Number of Tier-1 Suppliers with ESG risks at critical and high levels	<b>30</b>
Number of significant suppliers conducting business directly with the Company (Significant Tier-1 Suppliers)	<b>40</b>
The percentage of purchases from Significant Tier-1 Suppliers to the total purchase volume	<b>60.3%</b>
<b>Non Tier-1 Supplier</b>	
Number of suppliers not conducting business directly with the Company (Non Tier-1 Suppliers)	<b>845</b>
Number of the Company's non-direct but critical suppliers (Critical Non Tier-1 Suppliers)	<b>112</b>
Number of Non-Tier-1 Suppliers with ESG risks at critical and high levels	<b>39</b>
Number of significant suppliers not conducting business directly with the Company (Significant Non Tier-1 Suppliers)	<b>127</b>
<b>Significant Supplier</b>	
Number of Significant Tier-1 Suppliers and Significant Non Tier-1 Suppliers	<b>167</b>

Remark: Significant Supplier refers to suppliers that are significant in terms of business impact, including Critical Suppliers, Critical and High Potential ESG Risk Suppliers, and Critical Supplier & Critical and High Potential ESG Risk Suppliers.



**After analyzing the suppliers, the Company promotes adherence to the Supplier Code of Conduct (SCOC)** and conducts self-assessments through the SCOC Online Self-Assessment system with the objective to encourage significant suppliers of the Company to participate in the SCOC Online Self-Assessment until completion. This assessment is scheduled to be conducted every three years. However, during the review cycle for updating the Supplier Code of Conduct, suppliers are required to complete the SCOC Online Self-Assessment with adjustments aligned with the latest version of the Supplier Code of Conduct. Subsequently, the Company conducts verification and gap analysis, aiming to mitigate potential risks and provides recommendations for improvements to suppliers to ensure compliance with the Supplier Code of Conduct.



**Results:** The satisfaction level of suppliers receiving the advice and support provided to improve compliance with the Supplier Code of Conduct is very high, at 75%, and high, at 25%. Additionally, the Company communicated the Supplier Code of Conduct to individuals and businesses intending to become suppliers. These individuals or businesses must acknowledge and commit to complying with the Supplier Code of Conduct before becoming suppliers, with a compliance rate of 100% (GRI 308-1, GRI 414-1).

In 2023 which was the year of reassessment for critical suppliers, with assessments scheduled annually. All of the Company's Critical Tier-1 suppliers, totaling 31, participated in and responded to the SCOC Assessment. The Sustainability Management and Procurement Departments provided training and guidance on conducting the SCOC Online Self-Assessment and assessing ESG risks to critical Tier-1 suppliers. It is expected that suppliers will use this knowledge to assess their own suppliers, thereby reducing ESG risks that may impact future business operations both directly and indirectly.

**The Company conducts supplier audits continuously, including both document auditing (Supplier desk assessment) and on-site auditing (Supplier on-site assessment),** in line with the ethical standards and ESG risk assessment criteria regarding environmental, social, and economic/governance aspects. These evaluations consider both negative and positive impacts on the environment, society, and business continuity according to international standards such as ISO9001, ISO14001, ISO45001, ISO50001, TIS/OHSAS18001, ISO/IEC17025, UDHR, UNGC, UNGP, ILO, and Green Industry Level 5: Green Network standards. This effort aims to promote and expand environmental management practices throughout the supply chain, particularly among suppliers, encouraging the development of green networks and demonstrating a commitment to environmental development as part of the corporate culture and responsible business conduct in society.

Based on the assessment, the Company provides recommendations for suppliers to align with ethical standards and sustainable business practices (ESG), as follows:

## ESG Assessment

## Recommendations for Improvement to Suppliers

**Environmental (E)****• Environment**

- Facilitating training sessions and implementing additional communication initiatives to deepen comprehension and raise awareness regarding environmental concerns pertinent to the Company's environmental initiatives and projects.
- Encouraging waste segregation practices within the workplace to foster a culture of sustainability and promote the principles of Reduce, Reuse, and Recycle (3Rs).

**Social (S)****• Labor Practices and Human Rights**

- Supporting the development of a human rights policy with clear guidelines and standards.
- Fostering effective communication of the human rights policy by considering fundamental human rights principles or internationally recognized frameworks aligned with business operations, ensuring internal stakeholders are informed and engaged.
- Encourage to proceed HRDD to prevent any practices that violate rights.

**• Safety and Occupational Health**

- Supporting employees to utilize their free annual health check-ups right for through social security.
- Encouraging appropriate workplace assessments and analysis of working conditions.
- Recommendation for regular fire drills and evacuation training.
- Encouraging the maintenance of PPE equipment records and ensuring equipment is in good working condition for employee safety.

**• Community Development**

- Supporting continuous community engagement activities, such as public property maintenance or educational funding initiatives.
- Participating in local community internship programs for the children of community members (in relevant fields).
- Supporting community projects to create jobs and income opportunities for community members.

**• Cybersecurity and Personal Data Protection**

- Encouraging the use of cloud-based operating systems and data backup systems to increase the security level.

**Economic/Governance (G)****• Business Ethics**

- Supporting the development of a corporate governance policy that exemplifies best practices.
- Fostering transparent communication of the corporate governance policy to ensure collective awareness and adherence among internal stakeholders.
- Support for inspections is provided to ensure compliance with policy guidelines.

## The Company is committed to developing and enhancing the sustainability of its suppliers

by providing continuous training to enhance knowledge and understanding, and to support the integration of ESG practices into their business operations, particularly focused on Significant Suppliers. The training covers topics such as supplier ethics, organizational sustainability risk assessment, criteria for selecting Significant Suppliers, the Company's procurement regulations and processes, and practical training on greenhouse gas (GHG) accounting with the objective to raise awareness and understanding of climate change and reduce GHG emissions throughout the supply chain. Additionally, it aims to build relationships with suppliers and collaborate to mitigate the impact of climate change, thereby reducing the Company's Scope 3 GHG emissions.



**Results:** The satisfaction level of suppliers participating in various training programs is very high, at 90% and high, at 10%. This includes promoting and providing guidance to suppliers to conduct business and develop sustainability capabilities. During the annual supplier seminar in 2023, the Company presented certificates of excellence to 7 suppliers who conducted business with good ESG principles that aligned with the Company's supplier ethics.



Results of assessment and development to enhance the Sustainability of suppliers		2023 Result	2023 Target
1. Supplier Assessment	1.1 The total number of suppliers assessed through desk assessments and on-site assessments.	40 Suppliers	40 Suppliers
	1.2 The percentage of Significant Tier-1 suppliers that have been assessed.	100	
	1.3 The number of suppliers assessed for ESG risks arising from substantial actual or potential negative impacts.	40 Suppliers	
	1.4 The percentage of suppliers at risk of ESG negative impacts that have actually occurred/may occur significantly that have implemented improvements/remediations according to jointly developed plans.	100	
	1.5 The number of suppliers at risk of ESG negative impacts that have actually occurred/may occur significantly, and the suppliers whose trading/purchase has been suspended or contracts terminated by the Company.	0	
2. Promotion and support for improving and revising operational plans	2.1 The total number of suppliers who have received promotion and support for improving and revising operational plans.	40 Suppliers	40 Suppliers
	2.2 The percentage of suppliers who have been assessed for high ESG risks from negative impacts that have actually occurred/may occur significantly, and who have received promotion and support for improving and revising operational plans.	100	
3. Capability Enhancement	3.1 The total number of suppliers who have received capacity enhancement support.	40 Suppliers	40 Suppliers
	3.2 The percentage of suppliers who have received capacity enhancement support.	100	

# Sustainable Product and Service Development

The Company is committed to developing products and services in line with sustainable and participatory business practices, aiming to improve the quality of life in Thai society. In 2023, the country returned to normalcy following the COVID-19 pandemic. This year, significant events occurred in the country, including elections leading to a new government, coupled with the global situation where oil supply remains tight due to ongoing conflicts between Russia and Ukraine, and OPEC Plus reducing oil production as per their target, which created pressure for the country to be under high oil price conditions. Additionally, the Israel-Palestine conflict continues. Another significant event within the organization was the Company's acquisition of shares in Esso (Thailand) Public Company Limited (now renamed to Bangchak Sri Racha Public Company Limited) from ExxonMobil Asia Holdings Pte. Ltd. This was done to ensure energy stability for the people in the country, necessitating various contingency plans to provide accessible services that understands customers, and to build confidence among both current Bangchak customers and a new customer base. This includes rebranding service stations, improving product/service quality, and comprehensive development of oil service stations, such as Non-oil business, creating digital experiences for customers, sharing returns to society and the environment, etc.

In 2023, the Company introduced measures to help the public in terms of price stability, through various campaigns such as "How much oil price increase, Receive back with the accumulated point" campaigns, where members get extra points when refueling at Bangchak service stations on the first day of price increase after paying the full amount of oil price at the new increased price and receive the difference in oil price increase back as extra accumulated points, as another measure to help the public, "Reduce premium grade oil price by THB 7 per liter"

campaigns to provide customers an access to high-quality products at affordable prices, as well as being responsive to various government policies in lowering cost of living, such as price fixing or oil price reduction measures, etc. In addition, the Company focuses on developing potential and expanding the Non-Oil business and accelerating the expansion of cooperation with leading restaurant brand partners, as well as presenting local shops to accommodate the new lifestyle so that customers can enjoy a variety of convenient, fast, and easy food. This led to additional network restaurants available at Bangchak service stations, coupled with various restaurants from Bangchak's cooperation with partners, such as the "Jones Salad", "Gateaux House" brands, etc.

For Bangchak members, the Company aims to expand the customer base and provide more options for members through cooperation with various partners, such as transferring Bangchak points to AIS points, exchanging for 'Bangchak PointPay' discount, using points to help pay at Tung Ngern shops, transferring Bangchak points to MAAI points, changing points to funds, etc. Moreover, the Company continues to develop Unique Design service stations that combine customer needs with the design of service stations that have their own unique characteristics in each area, to deliver new greenovation experiences to customers.

In line with the goal of being the number one service station brand in the hearts of consumers, the Company places importance on listening to the needs and expectations of stakeholders, especially customers and business partners, which include customers (end users), B2B customers (Business-to-Business), station operators (dealer), and co-op service station operators (COOP).





In 2023, the quality of products and services continues to be a key sustainability issue that the Company is committed to addressing by using innovation and technology to develop high-quality products and improve the quality of services at service stations, to create a good experience under the concept of **“Your Greenovative Destination”**. This aims to develop service stations to be a destination for everyday life of people of all ages for creativity and a sustainable lifestyle. Customer satisfaction surveys are used as a tool to monitor the results of operations, with service quality control under the Standard Service Procedure as a measure of the efficiency of delivering good quality products and services to customers and business partners. There is a process of checking service standards (Service Audits)

randomly by representatives and undisclosed (Mystery Shopper), checking from the service process, taking care of the condition of the service station, including using a mobile training to check the quality of service work, and using a mobile lab to check the quality of oil at Bangchak service stations nationwide (Mobile Training & Lab). In addition, there is the development of the Mobile Application Survey system and QR Code Survey at the end of the membership card slip, which allows members to evaluate satisfaction immediately after using the service. The Company has developed and improved questions about speed, which is one of the important factors in service work that customers give importance to, to ensure that the Company delivers quality products and services to stakeholders.



## 2030 Targets



1

Being the number one service station brand in the heart of consumers

2

Continuing to increase sales from service stations and achieving 2<sup>nd</sup> largest market share

3

Becoming a leading distributor of diesel products through service stations and promoting the sale of premium grade oil products continuously

4

Developing services, service stations, and Non-oil business through various products and services to meet the needs of consumers continuously and sustainably

5

Expanding service stations by 40-50 branches per year nationwide, with the continuing coverage expansion of Unique Design service stations from current 87 branches (as of December 2023)

6

Expanding the coffee shop business, Inthanin, more than 2,500 branches, both within Bangchak service stations and outside service stations, covering Strategic Location in all regions across Thailand and in the ASEAN country group



7

Developing and upgrade community service stations to be comparable to standard service stations

8

Developing high-quality fuel products to be compatible with automotive technology and environmentally friendly

9

Developing the brand and quality of lubricating oil products continuously

10

Delivering good service experiences through special service standards to customers



11

Develop Bangchak GreenMiles membership cards to The Best Loyalty Program that meets the needs and expectations of consumers



## Strategy

The Company focuses on developing products, services, and experiences under the concept of “Your Greenovative Destination” to be a leader in developing green innovations through various products, services, and Non-Oil business in “Bangchak” service stations,

which are aimed to be the destination of everyday life of customers, collectively aiming to achieve sustainable business development. The Company’s main competencies are 1) Responding to the needs and expectations of customers and stakeholders 2) Procuring, developing, and creating new innovations, both oil products, Non-Oil, and services to be able to respond to changes quickly, and 3) Conducting business in conjunction with caring for the environment and society sustainably, with following key strategies:



### Greenovative Products

Be a leader in presenting high-quality oil products that meet the needs of customers and are good for the environment, with the Company’s readiness in improving the quality of all types of oil products sold through Bangchak service stations according to the EURO 5 standard in early 2024.



### Network Management

Expand service station branches and develop service station formats to meet customer needs, focusing on areas where the demand for oil is continuously increasing and creating profitable operations for partners.



### Non-Oil Offerings

Answer the needs of current and future customers with Non-oil shops that develop in partnership with partners, including technology for the future (EV Charger).



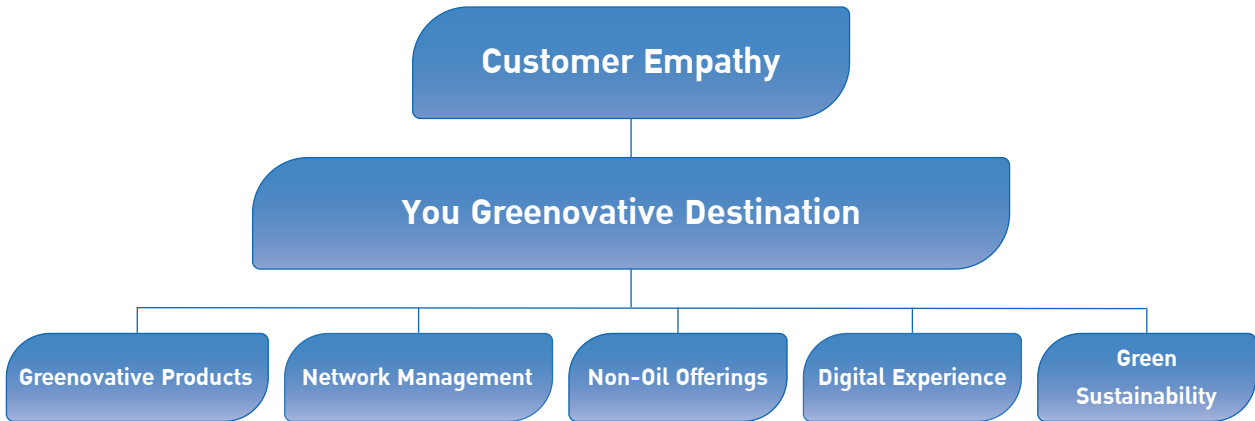
### Digital Experience

Create a close relationship with customers through digital experiences, getting to know and understand customers as close friends.



### Green Sustainability

Build a business that grows sustainably along with the society and the environment.



## Operation in 2023

### 1. Greenovative Products



Being a leader in offering high-quality oil products that meet the needs of customers and are good for the environment, through its EURO 5 standard oil products, which have a lower sulfur content than the EURO 4 standard. These products can help reduce the emission of hydrocarbon gases and nitrogen oxides, reduce the problem of small dust particles or PM 2.5, resulting in reduced impact on health and the environment. In 2023, the Company had a total of 3 types of EURO 5 standard oil products for sale, accounting for 33% of all products sold through Bangchak service stations. These include Gasohol E20 S EVO, Hi-Premium Diesel S designed for new EURO 5 standard engines, and the latest product, Hi Premium 97, which highlights the highest octane 97 for the Gasohol group (E10) in Thailand. It is the only one in the premium gasohol group that meets the Euro 5 global standard. At the end of December 2023, all types of oil sold from the Bangchak refinery have been reformulated to meet the EURO 5 standard to prepare for the government's policy to enforce the Euro 5 standard from the beginning of 2024 onwards. The Company also offers high-quality lubricating oil products. The significant operational results are as follows:

- Promoting Bangchak's premium products (Hi-Premium Diesel S and Hi Premium 97) through various campaigns, including expanding the range of service stations that sell premium grade oil, Purple Friday offering a discount on premium products by THB 7 per liter, and a campaign which gives THB 100 oil refill coupon for customers to use as a discount for their next refill after filling up Bangchak's premium oil for at least THB 2,000 increasing the opportunity for consumers to try Bangchak's high-quality products.
- Continuously promoting biofuel products that help reduce greenhouse gas emissions compared to general fuels. This is being done through the sale of Gasohol E20 S EVO oil through service stations that sell E20 fuel oil, a total of 1,024 branches, and service stations that sell E85 fuel oil, a total of 229 branches. The Company can maintain the market share of E20 and E85 products as the 2<sup>nd</sup> in the market.
- Developing lubricating oil products according to international standards, having received ISO 9001 quality management system certification and ISO/TS16949 quality management system certification for the automotive industry's global quality management system. In 2023, the Company was able to increase the market share for lubricating oil products to 10.9% from 10.1% in the previous year.

### 2. Network Management

Expanding service station branches and developing service station formats to meet customer needs, focusing on areas where the demand for oil is continuously increasing and creating profitable operations for partners.



- **Innovative Service Stations:** bringing in various technologies and innovations to develop service stations, the environment in service stations, and Non-oil business.
- Improving the image of the service station through the Unique Design Service Stations format, delivering service experiences through design, developing Non-Oil business partners. The Company has a total Unique Design service stations of 87 branches which consist of 6 formats, namely Modern, Innovation, Eastern, Western, Thai-inspired, and Fantasy.
- Collaborating with business partners in developing EV Charger in Bangchak service stations to accommodate the increasing number of electric vehicles (EV), a total of 265 charging stations with 890 charging points, which is the oil service station that provides the most EV Charger service, covering all regions across Thailand, being a companion to EV users on every route.
- Developing service stations that have standards on prime locations, main roads, while considering the needs of customers.
- Refurbishing of the old Esso service station to Bangchak (Rebranding), which has been completed a total of 273 stations.
- Supporting the improvement of standards and the image of the service station to be ready for competition in terms of both structure and service work, a total of 120 places .

### 3. Non-oil Offerings

Meet both the needs of customers at present and in the future with Non-Oil stores in collaboration with leading brands, as well as technology for the future (EV Charger).

- Expanding Non-oil business both inside and outside service stations to increase customer convenience. For example, the coffee shop business under the brand “Inthanin” has 1,020 branches; Dakasi milk tea shop, which Bangchak Retail has the right to expand the business and manage branches in Bangchak oil service stations nationwide, has 31 branches; Business partners that provide convenience store brands “Tops Daily”, “Family Mart”, “Mini Big C”, and “Lawson” have 15 branches, 15 branches, 134 branches, and 2 branches respectively .

- Managing the area in the service station to maximize benefits under the new business format to further complete the service. For example, the food business in collaboration with leading brands such as “Jones Salad” and “Gateaux House”, car care business under the brand “FURiO Care”, “Green Wash”, “Tyre Plus”, “Wizard”, “Autoclik”, etc., and expanding branches with partners such as B-Quik, as well as various Lifestyle businesses such as convenient laundry shops like “Code Clean”, goods transportation business, and automatic product vending machines, etc.

### 4. Digital Experience

Creating a close relationship with customers through digital experiences, getting to know and understand customers as close friends.

- Expanding the customer base of GreenMiles members, Fleet Card customers, and Prepaid Card to increase sales through service stations.
- Applying the Digital Payment system for payment, along with accumulating member points in the service station, every branch of Inthanin, and convenience stores in the service station. This can be done by scanning the QR Code to pay through every bank’s application, which helps reduce cash contact and maintain distance between customers and service employees to increase confidence for customers.
- Expanding service stations that support the Digital Payment system for payment, a total of 1,275 branches, along with accumulating member points in the service station, every branch of Inthanin coffee shop, and convenience stores in the service station.
- Collaborating with the Thailand Environment Institute (TEI) in developing criteria for designing service stations under the concept of Inno-Green Station that cares for the environment, uses innovation that is safe, and takes care of the quality of life of all customer groups through designing service stations according to the Universal Design concepts. In 2023, there are 58 stations that have been developed according to these criteria or a total of 258 stations currently.



- Developing the Bangchak member card system, in addition to the benefit “Payback of the Day of Gasoline Price Hike” and the system to support environmental care of members such as Your Tree, Charity Basket, where members can donate points to various charitable organizations at any time. The Company has also developed various projects to expand the customer base, such as transferring Bangchak points to AIS points, exchanging for ‘Bangchak Point Pay’ discount, using points to help pay at Thungngern shops, transferring Bangchak points to MAAI points, changing points to funds.



- Developing the BCP Link Application system that helps entrepreneurs access important information promptly, such as the Automatic Oil Ordering System (AOS), and increase work efficiency, such as the Smart P&L system (a database system for evaluating the performance of service station management).
- Developing an Online Training system for front-line service employees and entrepreneurs so that they can access important work processes anytime, anywhere.

## 5. Green Sustainability



Continuing to grow business together with social and environment. The Company still continues to drive projects to support participation in social development together with customers and stakeholders continuously, through various projects, such as:

- **To Fill Oil, Share Kindness campaign**, which has been started since 1997 and is still continuously being organized by burying agricultural products and/or innovative products from farmers and SME entrepreneurs to give to oil-refilling customers, as a support for farmers and SME entrepreneurs during the period when agricultural product prices are low by opening opportunities for the oil-refilling customers to participate.
- **Disabled and Elderly People Employment campaign** (in suitable positions) to support the value and quality of life of people in society, as well as to give importance to participation in supporting products produced by disabled groups. The Company provides employment and opportunities for the elderly and disabled groups to work in the service station, divided into 84 elderly people (aged 60 years and up) and 26 disabled people, as well as the employment under Bangchak Retail Co., Ltd., which is divided into 1 elderly person and 4 disabled people .
- **Chemical-Free Vegetable Garden in Service Station Campaign** by utilizing idle land behind the service station to create a vegetable garden to reduce the burden of food costs for service employees and extend it as a thank you gift to customers at service stations. The Company also brings and exchanges knowledge in vegetable gardening with the community and schools around Bangchak service station.
- **Inthanin Coffee Shop Business, a leader in the coffee business that is “environmentally friendly”** by using 100% Organic Arabica coffee beans to serve customers. Inthanin is a leader in campaigning to reduce plastic use through the “Customers bring their own cups” project, providing a discount on beverage purchases. Currently, Inthanin coffee shop is a leader of coffee shops that use BIO Packaging type PLA (polylactic acid) for both coffee cups and lids, made from plants, can be decomposed naturally 100%, as well as using a lid that can be lifted without using a straw to cut the circuit of plastic waste and pollution from waste disposal. This has led Inthanin to become the coffee shop that uses the most Bioplastic, ranked 1<sup>st</sup> in ASEAN. In addition, it collaborates with the Department of Forestry in the “Cup Seedling” project by returning used Inthanin beverage cups to be forwarded to the Royal Forest Department to use for tree seedlings, replacing the use of black plastic bags, to reduce waste creation and count as extending the useful life of degradable plastic. This is the initiative to allow Inthanin customers to participate in planting forests to increase green areas for our world through this project, which has been continuously carried out since 2021.

- **Use of solar-powered air conditioners in Inthanin and Dakasi Shops campaign** started with the installation in Inthanin and Dakasi shops, a total of 34 branches, with a plan to expand the installation further in the next year.
- **Promote Thai Traditions campaign**, creating experiences for customers, and for customers to see the importance of various good Thai traditions. For example, organizing sales promotion events during various important festivals, activities to give Krathongs to customers on Loy Krathong day, along with arranging a place for watering Buddha images.
- **Lost and Found at Bangchak Service Station campaign** to create an impression and trust in the service at Bangchak service station, through instilling a sense of honesty in service employees to take care of and return assets that service users forget at the service station.
- **Emergency Road Side Assistance Campaign**, instilling a culture of providing assistance to service employees at the service station, in providing assistance to general vehicle users who need basic assistance, such as changing tires and towing batteries, etc.
- **Bangchak Ruam Pan Nam Chai for Endless Giving campaign**, encouraging the participation of Bangchak members to help society by allowing customers to donate accumulated points from refueling and buying products

from Bangchak group to exchange for additional donation money together with the Company. The donation is made to various charitable organizations such as the Princess Mother’s Medical Volunteer Foundation, Ramathibodi Foundation, and Thai Red Cross Society, etc., to support social and environmental development.

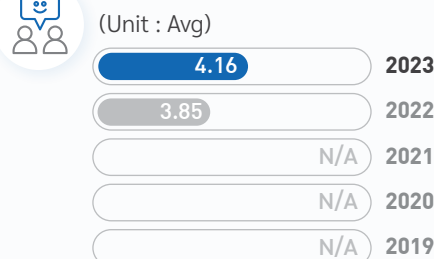
- **Fry to Fly campaign buying used vegetable oil from the public and leading brand partners for producing SAF (Sustainable Aviation Fuel)**, by setting up a buying point at Bangchak service stations nationwide. The “Fry to Fly” project will help reduce the problem of reusing frying oil, improper disposal of oil, and create added value for used cooking oil. And importantly, the “Fry to Fly” project helps to create a sustainable supply chain for used vegetable oil. The production of SAF for 1 million liters, if successful, will help reduce carbon dioxide emissions by 80,000 tons of carbon dioxide equivalent per year.



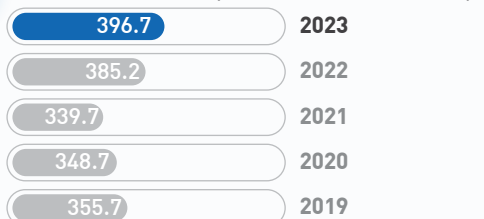
## Operation result

In 2023, the Company also utilized the Customer Satisfaction evaluation (an adjustment made to the analysis, which has commenced since 2022) to measure consumer satisfaction with various oil service station brands (data from surveying more than 1,810 oil users nationwide, surveyed by an external research company).

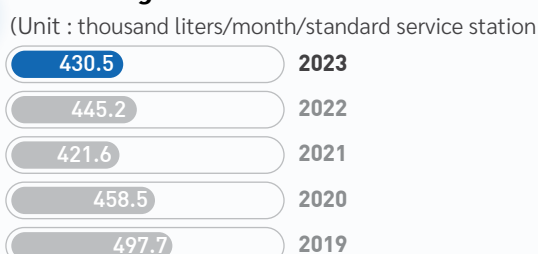
### Customer Satisfaction



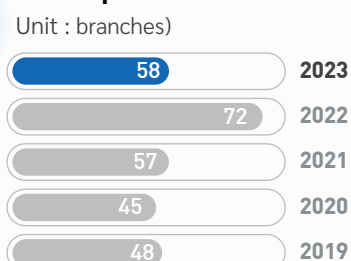
### The oil sales volume through the service station



### The average sales volume

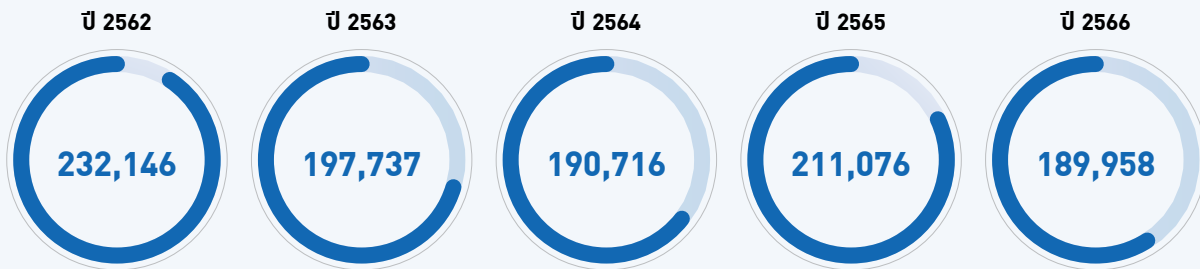


### The expansion of the station





### The amount of greenhouse gas reduction from refueling through Bangchak member cards (unit: tons of carbon dioxide equivalent)



## Relationship Management and Responsibility to Customers

The Company orchestrates customer relations in both proactive and responsive manners via its consortium of service station business operators, Bangchak Green Net Company Limited (BGN), dealers, Inthanin coffee outlets, and service stations for Cooperatives. This aligns with the Company's marketing strategy, which emphasizes the enhancement of service quality at service stations to cater to customer requirements and cultivate a positive experience under the "Your Greenovative Destination" concept.

### Key Development in 2023

#### 1. Development of Two-Way Communication Mechanism between Customers and the Company

##### 1.1 End Users (Service Station Customers)

The Company utilizes diverse channels for customer communication, including call center 1651, Facebook, Email, Website, LINE Official, Line@, live chat, and the Bangchak mobile application. These channels employ data storage and processing systems to expedite customer contact. In instances of a congested hotline or inquiries outside of business hours, customers are reconnected via the call-back system. Customer feedback is also monitored through online platforms such as Pantip website and Bangchak's Facebook page to gather information for service enhancements.

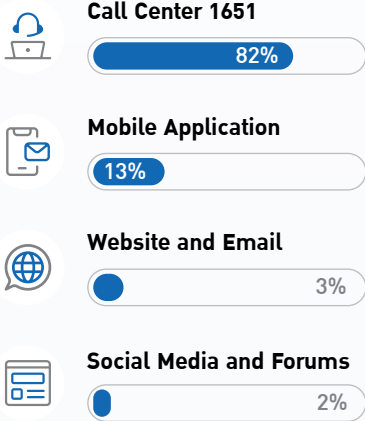
##### Customer Satisfaction Evaluation

The Company offers multiple channels for customers to evaluate their satisfaction, including telephonic surveys with an automatic post-service call transfer system. For Bangchak members, the feedback can be provided via the Mobile Survey system as well as purchase receipts. Furthermore, feedback is also accumulated from other channels, including external organization assessments, annual market research, and focus group discussions with business operators to exchange marketing information. The Company collates complaints, inquiries, compliments, sales promotions, and service recommendations for improvement and forwards them to the relevant departments. Employees who receive compliments from customers are rewarded to encourage their performance.

In 2023, the Company received a higher number of complaints and suggestions than in 2022, with online channels, such as the website, EMAIL, Facebook, and LINE@, being more favored, showing an increase to 19% in 2023 from 8% in the previous year. This increase is attributed to the expansion of channels for receiving complaints and suggestions, coupled with the addition of more service stations. Customer satisfaction with complaint and suggestion responses and the return rate were in line with the objectives that were set forth.

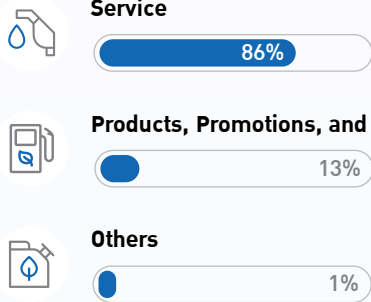
# Receiving Complaints and Suggestions

## Channels



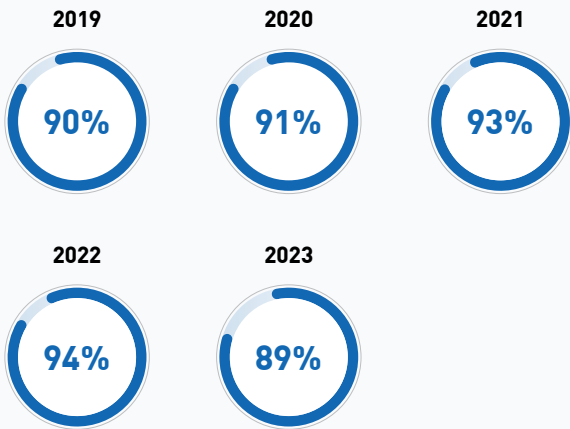
Total Issues: **4,354**

Divided into:

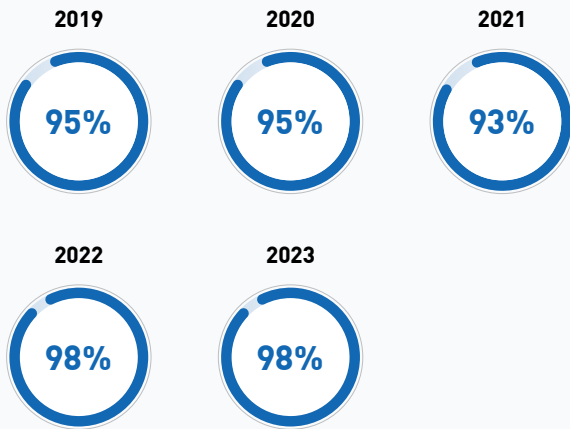


## Outcomes

Customer satisfaction towards the responses to their complaint and suggestion (target 90%)



Customer return rate (target 95%)



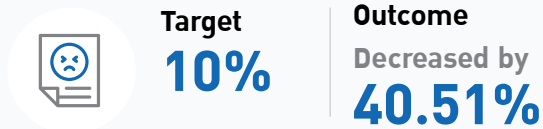
No legal violations related to marketing communication (Disclosure 2-27)

## 1.2 Industrial and Wholesale Customers

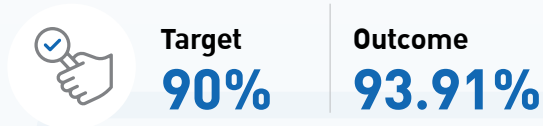
The Company prioritizes the utilization of online systems for communication and customer satisfaction evaluations with industrial customers, inclusive of technical service and transportation services. The Company also has direct communication channels, such as customer visits, to address customer complaints.

### Outcomes for 2023

#### Complaints



#### Service Satisfaction



## 2. System and Technological Development to Support Customer Relationships

### 2.1 End Users (Service Station Customers)

- The Company possesses a CRM system and exclusive privileges for each new customer group (e.g. truck customers, food riders). It scrutinizes member data, collected from fuel usage and purchase of Inthanin products, to offer benefits and stimulate repeat purchases.
- Convenient and improved safety services were implemented during the COVID-19 situation, including fuel order communications through Line Official, QR code payments, wireless credit card terminals, which allows customers to swipe cards without leaving their cars, and point collection by voicing mobile phone numbers.
- The Company adheres to personal data protection laws, procuring consent for data use from new members. Existing customers can modify or withdraw consent through the Bangchak Mobile Application, website, or Call center 1651.

### 2.2 Industrial and Wholesale Customers

- Utilized E-Tax invoice system for customer convenience in accessing the data online.
- Expanded more fuel depots to cover more area in response to customer needs and ensure rapid delivery.
- Upgraded lubricant databases for product suitability inspection, available at [www.bangchaklubricants.com](http://www.bangchaklubricants.com).

## 3. Customer Relationship Management for Customer Retention and Expansion

### 3.1 End Users (Service Station Customers)

#### Primary benefits:

- Special 100 points upon card registration of new members.
- A portion of the increased fuel price in points on the first day of price adjustment for Bangchak members.
- Double points for diesel fuel refills.
- Special benefits on birthdays, including free 100 points, fuel discounts, Inthanin beverages, or changing engine oil at Furio Care and receive special discounts at Inthanin or Furio Care service centers.

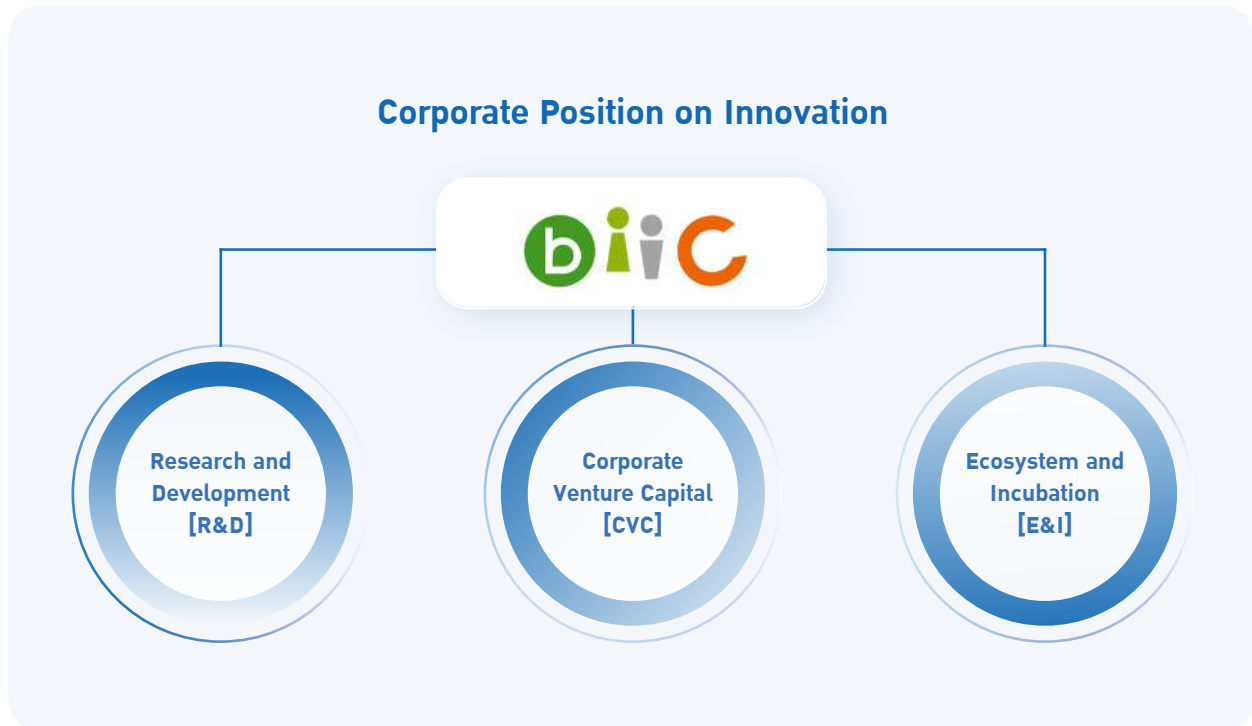
#### Additional benefits:

- Additional benefits for SCG, AIS Serenade, and The1Card members to expand customer base.
- Point transfers between Bangchak members, point transfers from the selected credit cards to Bangchak points, and point transfers with AIS Point, MAAI, POINT X, AIR ASIA, and THE 1. Moreover, Bangchak points can be used for purchasing products from participating Tung Ngerm merchants through the Bangchak Mobile Application.
- RMF and SSF fund purchases with Bangchak points.

### 3.2 Industrial and Wholesale Customers

- Providing knowledge on products, emergency response plans, post-sales support, equipment checks, and equipment maintenance.
- Providing total solutions in addition to simple product selling, additional equipment maintenance service, and quality warranty.
- Monthly meeting with large industrial customer groups to collaboratively create tools to support sales and expanding trade networks.
- Additional credit limits in addition to the credit line with credit guarantee.
- Promotion reports as discussed with customers, and quarterly and annual discounts to encourage continuous purchases and product line expansion.

# Innovation Management



The Company has recognized the importance of innovation in the organization in order to not only increase the revenue and competitiveness of the Company but also creating positive impacts to stakeholders, society, and environment by improving new skills and quality of life in health and well-being of the people, reducing the use of natural resources and reducing pollution generated from business operations.

The Company established the Bangchak Initiative and Innovation Center (BiIC) to create a green ecosystem and drive innovations related to green energy and bio-based products for the domestic and international markets from research and development, corporate venture capital, and ecosystem ad incubation based on BCP316NET plan to achieve carbon neutrality from carbon emission by the year 2030 and achieve net-zero carbon emission by the year 2050 of Bangchak Group.

From the commitment in innovation management, the Company received South East Asia MIKE Award (The Most Innovative Knowledge Enterprise) in Gold Level from creating a knowledge management and innovation

management in the organization to develop products and services for the customers continuously, along with emphasizing importance on human resource and technology development under 8 sustainability factors as follows:


1. Supporting personnel to have knowledge and skills leading to innovation creation
2. Organizational leaders, vision, and strategy
3. Responding to expectations, needs, and experiences of customers and stakeholders
4. Developing cooperation and networks, both internally and externally
5. Cultivating a culture of organizational innovation
6. Investing and delivering products, services, and solutions based on knowledge
7. Promoting the use of knowledge practices and knowledge creation systems
8. Using creative and virtual spaces to create value for stakeholders

# Key Operating Results


## 1. Research & Development (R&D)

The production of astaxanthin from a prototype plant for processing into high-value products, including developing and improving production processes, testing the efficacy and toxicity of astaxanthin produced in collaboration with the Faculty of Pharmacy, Chulalongkorn University. It was found that consuming astaxanthin helps nourish the eyes and skin without being toxic to the liver, kidneys, and no skin irritation when applied. In addition, new products have been developed for market testing, such as dietary supplements and cosmetics, as well as studying and developing nano-astaxanthin particles to increase the efficiency of the products. Moreover, the feasibility of expanding production commercially with partners was also studied.


### Expenses Related to Research and Development of the Company




**2019**  
Production of astaxanthin from algae, production of bioplastic, production of bio base oil, and wastewater treatment.  
Amount **9,200,000 THB**



**2020**  
• Establishment of a laboratory for cultivating algae, including building a prototype plant for producing astaxanthin.  
Amount **10,000,000 THB**  
• Production of bioplastics prototype, production of alternative protein products from plants, and wastewater treatment from service stations  
Amount **5,450,000 THB**



**2021**  
• Construction and commissioning of a pilot plant for producing astaxanthin, and testing the efficacy of the substance obtained.  
Amount **7,400,000 THB**  
• Production of bioplastics prototype, and production of alternative protein products from plants.  
Amount **2,650,000 THB**



**2022**  
Efficiency improvement of algae cultivation and astaxanthin production, efficacy test of the substance obtained, new products development, and preliminary market testing.  
Amount **5,800,000 THB**



**2023**  
New products, preliminary market testing, and feasibility study of the commercial production.  
Amount **1,900,000 THB**

Remarks: - In 2019, the Company received a THB 2.8 million tax privilege from National Science and Technology Development Agency (NSTDA) and a THB 2.3 million scholarship from the Thailand Research Fund (TRF).  
- In 2020, the Company received a THB 1 million tax privilege from NSTDA



## 2. Corporate Venture Capital (CVC)

CVC has adjusted the investment scope in order to be in alignment with the carbon neutrality target in 2030 and net-zero GHG emissions target in 2050 of Bangchak Group. The Company focuses on 2 main topics by adapting technology and creating green business as a new S-curve, which are Energy and Climate Technology, and Bio Based & Wellness.

CVC has invested directly in a start-up business of more than 58% of the budgeted investment capital by both follow-on investment and initial investment methods. Furthermore, CVC also conducted feasibility studies and planned to utilize the technology from start-up companies into the Company's core businesses and its invested businesses such as a development of battery standard with Winnonie, using green energy innovation from electric motorcycles to elevate the quality of service to motorcycle riders.

## 3. Ecosystem and Incubation (E&I)

Ecosystem and Incubation under BiiC unit initiated the "Wrong DI (Wrong-Deliver-Innovation)" project to stimulate the innovation ecosystem where employees exchange their knowledge within the Company and subsidiaries. The project encouraged employees to share innovative ideas online, and improve their knowledge by holding workshops to generate ideas to turn into innovative businesses with successful commercialization. The project results are as follows:

- **Smart Gas Vending Machine Station (Krating)**, started in 2021 by considering innovation, financial services, and lifestyle such as wallet top-up service in communities situated far away from the service station. As of 2023, Krating exists in more than 50 villages in 5 provinces with more than 4,000 customers totaling 110 machine stations generating the revenue of THB 1.2 and THB 1.3 million in 2022 and 2023 consecutively.
- **A research project on cultivating algae for producing high-value extracts**, in collaboration with research and development agencies in raising funds to expand production capacity to meet the domestic market demand, with the goal of being a center for cultivating and extracting essential substances with high value from algae in the Southeast Asian market. Currently, there are dietary supplements and cosmetics products under the brand Asta.A, produced from essential substances from red algae (astaxanthin), which are antioxidants with 500 times higher efficacy than vitamin C, with a plan to extend the products to human food and animal feed in the future.

The Company communicated and received feedback from related stakeholders regarding innovation through various channels such as stakeholder engagement surveys in order to improve and develop business models and future innovations.

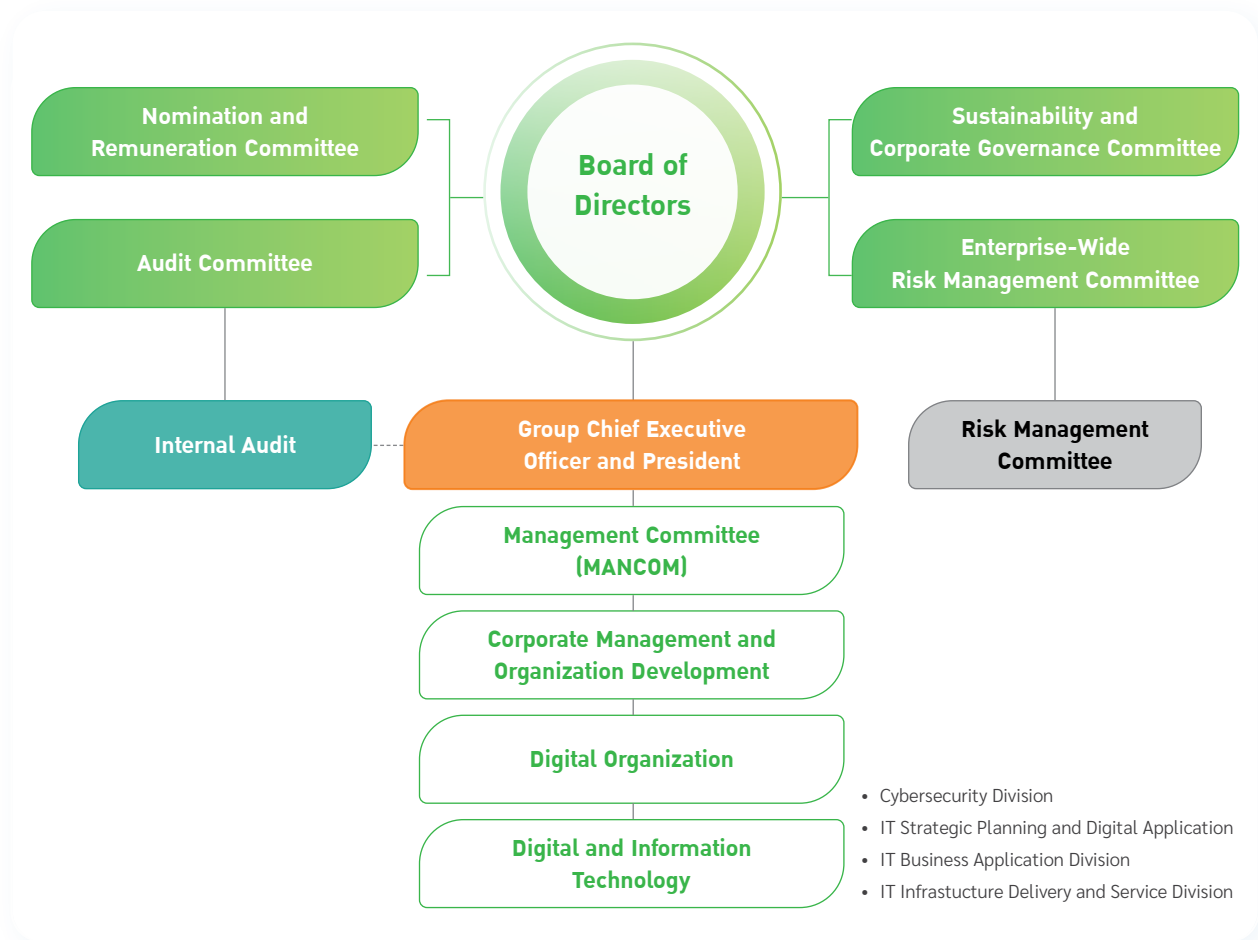
# Technology and Cybersecurity Integration and Implementation for Business Development

Cybersecurity is a crucial aspect that may impact stakeholders both internally and externally. For instance, it can affect the security of business operation, cause system failures, and even lead to the violation of personal data of employees, suppliers, and customers. Therefore, the Company has adopted information technology systems, which are essential tools to meet the expectations and needs of stakeholders. This includes having practices, tools, operational frameworks, and modern, efficient standards that manage risks and prioritize the security systems that

complies with international standards and government regulations. For example, the Computer Crime Act B.E. 2560 (2017), the Cybersecurity Act B.E. 2562 (2019), and the management of personal data in accordance with the Personal Data Protection Act B.E. 2562 (2019). These measures ensure the business expansion according to the organization's strategic plan and prevent the violation of stakeholders' rights from the misuse of personal data.

# Management Structure of Information Technology and Cybersecurity

The structure is designed to develop the organization with information technology and manage cybersecurity in accordance with international standards. The Company's management committee, working group, and internal audit committee for information security ISO 27001 report to the Executive Committee and Enterprise-Wide Risk Management Committee (ERMC). The digital organization department manages the work. The senior executive vice president of the Corporate Management and Organizational Development business unit holds the Chairman position of the committee, who acts as a senior executive in maintaining the security of the network structure and information security (Chief Information Security Officer: CISO) with knowledge and skills in Information Technology and Information Security at the management level.



Since 2018, the Company has set up Cybersecurity division to be responsible for managing cybersecurity work, with the cybersecurity management being in line with international standards, namely ISO/IEC 27001 : 2022, ISO/IEC 27032 : 2012, ISO/IEC 27018 : 2019, and NIST Cyber Security Framework .

## Administration of Information Security Management System with International Standard

- ISO/IEC 27001 : 2022; This is a global standard for Information Security Management Systems (ISMS). The Company has been continuously certified since 2012 with Version 2013, and continued to also be in line with the latest Version 2022 in 2023. The system includes risk assessment, security design, implementation, and security management, which provides flexibility in controlling or developing the Company's business.
- ISO/IEC 27032 : 2012; Since 2018, the Company has received additional certification from ISO 27001, which emphasizes Confidentiality, Integrity, and Availability in Cyberspace. This refers to the security of assets in the cyber world, such as hardware, software, data, services, as well as intangible assets (Virtual Assets) such as reputation and brand.
- ISO/IEC 27018 : 2012; Since 2021, the Company has been certified with the standard, which focuses on the management of information security for the Personal Identifiable Information in the Company's cloud system.

## Protection against Threats to Assets, Data, and Information Systems

The Company operates according to the "Information Technology Security Policy", which covers:

1. Risk assessment, selection of important information systems, and the preparation of backup systems and emergency response plans in case electronic methods cannot be implemented. Usage readiness, backup systems, and emergency response plan drills, as well as business continuity management are conducted regularly. These are regularly monitored and reported to the Corporate Strategy and Risk Management Division every quarter, which will be considered for reporting to the Company's Board of Directors overseeing risk management.
2. The management of information asset resources must have measures to control the use and maintenance of assets and equipment to be complete and ready to use, and prevent unauthorized access to assets or information.
3. Data management and confidentiality, the Company has security measures, including the control of access and use of the Company's information system according to the importance or level of confidentiality of the information, data transmission control, and arranging for a non-disclosure agreement to maintain confidentiality and not disclose the Company's information with external parties.
4. The Company has implemented Multi-Factor Authentication (MFA) and Advanced Endpoint Protection, which can detect, identify, and respond to cyber threats to the computer systems, known as Endpoint Detection and Response (EDR). The Company has a network access control system, with a rigorous security inspection design, known as Zero Trust. The Company has an advanced security information and event management system (Advance SIEM), along with a deception technology system for faster and more accurate detection. The Company has a system that collects data about Cyber Threats from various global news sources, known as "Threat Intelligence", which alerts through the threat detection system, allowing for the analysis and detection of new types of attacks, including ransomware, and prevention along with fast and accurate alerts. The Company also hires a managed security service provider to enhance

vigilance in the important system section 24 hours a day, with regular tracking of threat news and monthly reporting. The Company has a secure data backup system with ransomware protection and the ability to quickly restore the system. These operations help the information system administrators respond confidently, both from intrusions through networks and programs that intend to damage the company's data. The Company detects, prevents, and recovers, as well as creates awareness among relevant personnel while also manages technical vulnerabilities. These are carried out as follows:

- Testing procedures and processes in managing events that may impact the security of information systems at a severe level that results in the infrastructure being unable to operate at least once a year (Cyber Security Drill).
- Arrange for expert testing by hiring experts to test the penetration (Penetration Test) into important work systems to analyze risks and business impacts (Risk and Impact for Business) for at least every year or when significant changes have been made to the work system.
- Conduct a Vulnerability Assessment to check the operating system (OS), software, or Network/ Security equipment for any vulnerabilities and the severity, in order to assess the risk of them being penetrated by malicious people and correct it to close that vulnerability, both before actual use and after use.
- Evaluate external service providers that process personal data to ensure confidence in the care of data in accordance with at least the provisions of the Personal Data Protection Act B.E. 2562 (2019).

## Internal Communication to Raise Awareness and Improve the Efficiency of Using Information and Digital Technology Systems

The company places importance on employees and operators in enhancing their knowledge and skills in using information and digital systems, with the following activities:

- Training for new employees in a practical format along with performance measurement on the awareness of cyber threats and compliance with the organizational provision on information system usage and compliance with regulations, such as the Computer Crime Act B.E. 2560 (2017) and the Personal Data Protection Act B.E. 2562 (2019).
- Communicating cyber risk issues that occurred to provide knowledge and raise awareness of cyber threats (Security Awareness). Various news will be regularly notified to employees via the internal information system such as email or popup.
- The Cybersecurity Awareness Improvement Program is carried out regularly every year to provide knowledge and understand about e-mail threats, with assessment on understanding via Phishing Simulation. The simulation involves sending simulated phishing emails to internal users to measure the level of organizational risk to phishing threats and measure user awareness in distinguishing phishing emails (Security Awareness Assessment). The test results are recorded and data is analyzed for planning and training to improve knowledge and improve phishing threat prevention measures of the organization. Currently, the tests are carried out and measured 4 times a year via various simulated situations, with immediate error assessment for employees to realize and be aware of in going forward (Rapid improvement program). Through various simulations, some weaknesses have been identified and data is analyzed to close the gap by communicating with employees for them to learn, be cautious, and know how to deal with phishing mail threats better.

- Cyber Security Response is another cyber security management approach that the Company has implemented. Case studies from the cyber field are shared and provide knowledge and guidelines to employees, executives, and some group companies to be cautious and aware of business email scams (Business email compromise or BEC), such as sending fake invoices. Training is provided to the relevant departments/lines to raise awareness and caution. The following effective control guidelines (Strictly Process Confirming) are set:

1. Request: Register or change important information, especially bank account information.
2. Use a specified form to confirm the change of information. Changes in information required to be signed in a specific form by the authorized person of such suppliers.
3. Presence of documentary evidence related to the change request, considering the credibility of the document, such as documents issued by a government agency.
4. Confirm that the person requesting the change of information is the true requester by contacting via recent phone number.
5. Adding the steps above to the relevant workflow.

## Measures for Handling and Responding to Cyber Threats

The Company has evaluated the current high-risk threat patterns, prepared plans and practices in response to security incidents (Incident Response Plan), and drilled at least once a year for that plan (Cyber Security Drill) to ensure that prevention and recovery are effective and timely, allowing the Company to continue to operate with minimized impact. As an implementation tool, the Company has a supporting system for the IT Service Management System, which is the BMC Remedy system, internally known within organization as “MyIT”. The system has a procedure for managing information security system malfunctions. Employees can notify the department through 3 channels: MyIT system, email, and telephone.

### Occurrences of Data Breach, Unintentional Data Disclosure, and Data Leakage:



### Occurrences of Data Leakage or Unpermitted Disclosure/Use:





## Environmental Dimension

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# Efficiency in Resource Allocation for Optimal Utilization (Operational Eco-Efficiency)

In 2023, the Refinery and Oil Trading Business Group has a capacity of 120,110\* barrels per day (January 1 - December 31, 2023), accounting for 100.1% of the total capacity of the refinery. Nevertheless, the Company has adjusted to be a niche-product refinery to develop new products such as solvents under BCP White Spirit 3040 and Bangchak Solvent 40 (BS40). Moreover, the Company also increased an unconverted oil production capacity, along with being the only producer in Thailand.

Given the impact of climate change and the escalating scarcity of natural resources worldwide, our company places paramount importance on judiciously utilizing natural resources in our production processes. Our aim is to maximize production efficiency while minimizing waste and pollution. To achieve optimal resource utilization,

we have implemented an environmental management system aligned with ISO 14001 : 2015 standards. This system encompasses both resource usage and pollution control. It serves as a driving force for continuous development under our proactive policy, aligning with the stringent criteria of Green Industry Level 5: Green Network, the highest level of green industry standards set by the Department of Industrial Works. Our commitment extends beyond our business's environmental aspects to actively promoting environmental management practices to the stakeholders throughout the supply chain, communities, and consumers. This commitment reflects our unwavering dedication to a green network, fostering an organizational culture that conducts business with social responsibility (Disclosure 102-12).



## Eco-efficiency

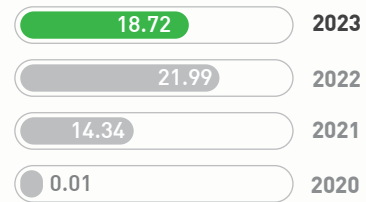
The Company aims to foster business growth while simultaneously considering the reduction of environmental impacts resulting from business operations. Specifically, our focus lies on achieving sustainable development. To this end, we employ eco-efficiency, which is the ratio of EBITDA and GHG emissions, as a metric that reflects production efficiency and environmental impacts arising from our operations. By utilizing EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) as a measure of economic growth and greenhouse gas emissions scope 1 and 2 - an essential environmental concern in the petrochemical industry - we demonstrate our commitment to high environmental performance. A high level of eco-efficiency signifies both efficient production and minimal environmental impact.

In terms of eco-efficiency for the year 2023, we observed a decline compared to 2022. This reduction was influenced by fluctuations in oil prices and gross refining margin during the second quarter of 2023. Notably, in July 2023, the Company undertook enhancements to the Diesel 2 quality improvement unit to comply with Euro 5 standards. Consequently, adjustments were made to reduce refining capacity during that period. The average refining capacity for 2023 decreased compared to the previous year. Additionally, following the quality improvement unit

modifications, there was an increased demand for hydrogen in the refining process to enhance the removal of impurities. As a result, greenhouse gas emissions in 2023 slightly exceeded those of the previous year. Despite these challenges, our unwavering commitment to continuous energy efficiency remains steadfast. We have ongoing projects aimed at reducing energy consumption and minimizing greenhouse gas emissions, particularly in 2024, during the annual turnaround. We demonstrated our dedication to business operations while mitigating environmental impacts.



### Eco-efficiency (Thousand THB/tCO<sub>2</sub>eq)



Remarks: EBITDA and green house gas emissions scope 1 and 2 (tCO<sub>2</sub>eq) of Refinery and Oil Trading Business Group and Marketing Business Group.



# Energy Consumption and Climate Change Management

## Energy Consumption

The refinery business is an energy-intensive industry that requires substantial amounts of heat, electricity, and steam. Recognizing the importance of energy efficiency and conservation, the Company has adopted the ISO 50001 standard for Energy Management Systems and has been implementing it consistently since 2014. The Company has short, medium, and long-term goals and development plans to improve the energy efficiency of the refinery. The short-term plans include setting energy consumption targets and optimizing existing systems. The medium-term plans aim to improve efficiency and effectiveness throughout the production process. Lastly, the long-term plans involve a project called the Energy Improvement Project, which seeks to achieve significant reductions in energy consumption.

## Energy Efficiency Target in 2023

The company set the energy consumption target for the refinery in 2023 at %FOEB 4.86, considering the energy consumption per unit of production equivalent to percent of Fuel of Oil Equivalent Barrel (%FOEB), which was developed from 2022 and is near the upcoming major maintenance period scheduled for 2024. The energy consumption within the production units in 2023 was 4.90%, which closely aligns with the target.

## Operating Results in 2023

The Company adopts the CCRU (Continuous Catalytic Regeneration Unit), which is a more energy-efficient unit compared to the previous one, resulting in an overall improvement in energy usage. Moreover, the Company has embraced the rapid development in technological innovations and has incorporated Artificial Intelligence (AI) systems along with workforce development to improve operational efficiency. This effort aims to advance the Company's refineries and enable them to be positioned as state-of-the-art facilities that comply with global standards.

The Company has been undertaking several refinery development projects and consistently monitoring them since 2019. These projects aim to enhance energy efficiency. Examples of projects carried out include:

- Installation project of heat-insulating surface coating materials on the furnace walls to reduce energy consumption in steam boiler unit 1
- Installation project of heat-insulating surface coating materials on the furnace walls to reduce energy consumption in steam boiler unit 2
- High-pressure steam usage reduction at CCRU (Continuous Catalytic Regeneration Unit) tower
- High-pressure steam usage reduction in the air compression unit at Light Naphtha Isomerization Unit 2
- High-pressure steam usage reduction at the Hydrodesulfurization Tower 4
- Heat exchange systems improvement to reuse residual heat at Crude Oil Distillation Unit 2
- Inlet temperature reduction at the reactor of the CCRU (Continuous Catalytic Regeneration Unit)

From the energy management initiatives and the efficiency improvement projects, the energy consumption in the production unit is equivalent to 4.90% FOEB which is closely aligned with the 4.86% target.

## Future Plan

For the energy usage reduction plan, the Company collaborated with international firms in the expert matters to exchange technology and experiences to be utilized in the future projects. These collaborations serve as an assurance that the energy consumption will be at an efficient level. Additionally, the Company has other energy usage reduction initiatives in the pipeline for the year 2024 including:

- Catalyst reforming unit shutdown at the Distillation Unit 2
- Gas engine generator installation to replace gas turbine generator

## Refinery Business Operating Results



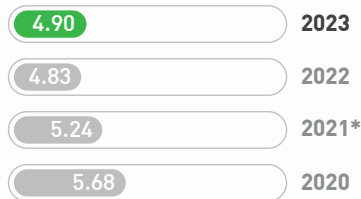
### Energy Consumption in Production Unit (% FOEB)



#### Target



#### Performance



\*Annual Turnaround

## Climate Change Management

Climate change from the greenhouse gas emission is a sustainability matter of all industries. The Company acknowledges the risks and physical impacts associated with climate change, as well as the regulatory changes related to climate transition impacting the Company and stakeholders. This commitment aligns with the Paris Agreement, which aims to limit global temperature rise to below 2 degrees Celsius, and the UN Sustainable Development Goal (SDG) 13. Bangchak group has declared a Carbon Neutrality target by the year 2030, and aims to reduce greenhouse gas emissions (Scopes 1 and 2) by 30% and ultimately achieve Net Zero GHG Emissions by 2050. The greenhouse gas emissions target is set as a corporate

key performance indicator (KPI), and as evaluation criteria for the Group's CEO, president, and the management's performance. Additionally, the Company has determined the strategies, assessed risks and opportunities related to climate change in both the short and long term, in line with the Task Force on Climate-Related Financial Disclosures (TCFD) guidelines. These assessments cover financial implications associated with physical risks and transition risks such as those risks associated with carbon pricing policy, crude oil market price, organizational reputation, and climate impact reporting requirements. Additionally, there are assessments of policies supporting the renewable energy technology and greenhouse gas reduction. Opportunities also exist in carbon capture, utilization, and storage (CCUS) technologies, as well as the market demand for renewable electricity. For more information, please see the 2024 Task Force on Climate-Related Financial Disclosures (TCFD) Report as per the QR Code.



More information available in

Task Force on  
Climate-Related Financial  
Disclosures (TCFD) 2024

The Company has a sustainability policy on the efficient management of resources and the environment, promoting awareness in the management and employee levels regarding environmental risks and impacts from business operations, covering climate change, by requiring regular audits, risk management and impact assessment that may affect the environment and climate, promoting the use of technology and innovation to develop environmental, energy, water, and waste management systems to be efficient throughout the business process and in new businesses, as well as developing cooperation with local and international organizations in the management of resources, environmental care, adaptation, and mitigation of climate change impacts to be effective and economically valuable.

## Climate Governance

The Company defined the governance structure to govern the greenhouse gas emissions reduction from the director to operator levels to ensure that the system and operation are integrated and aligned with the goals. The matter is governed by Sustainability and Corporate Governance Committee (SCGC), acting as presenting the sustainable development guidelines to the board of directors in order to govern the operations of board of directors and the management to be aligned with sustainability guidelines and to revise the sustainable development guidelines by benchmarking with the international standard and propose to the board of directors to consider the revision to be keep up with the modern world, and responding to stakeholders' requirements, along with delivering sustainable development policy to the Sustainability Policy Committee (SPC).

The Sustainability Policy Committee (SPC) has a responsibility to determine and revise the sustainable development policy, operations, and targets. Along with the guidelines on

processes related to the Company's sustainability strategy that covers the climate change management, related risks and opportunities for business sustainability development, and support the operations from Sustainability Management Committee (SMC). SMC has a responsibility to implement the policy and initiatives in place regarding climate change, to assess risks and opportunities for climate conditions, and to conduct initiatives to reduce greenhouse gas emissions. Furthermore, the Company recognizes the importance of setting up Net Zero Development Division to support the operation and steer Bangchak Group to achieve its milestones and targets.

The Company has expressed its commitment to participate in driving and supporting the achievement of carbon neutrality and net greenhouse gas emissions by the year 2050. This effort is carried out under the Thailand Carbon Neutral Network, where it serves as a "Climate Action Leading Organization" (CALO).

### 2023 Targets



Greenhouse gas emission scope 1 of the refineries amounting less than **941,640** tonnes of CO<sub>2</sub> equivalent



Greenhouse gas emission scope 2 of the refineries amounting less than **4,400** tonnes of CO<sub>2</sub> equivalent



Office buildings and regional offices to achieve **"Carbon Neutrality"** (Scope 1 and Scope 2)

However, while the world prioritizes investment in clean energy, which is growing rapidly, the transition to energy alternatives takes time. Coupled with critical risk factors such as energy crises, which are expected to impact Bangchak Group's countries of operations, it remains crucial to maintain a stance in business operations that emphasize balancing the energy trilemma. This trilemma consists of three key aspects: Energy Security: being accessible to public; Energy Affordability; finding opportunities to increase energy stability while being affordable and sustainable in resources and environment; and Environmental Sustainability; balancing the use of global energy sources while considering environmental impact to release carbon dioxide emissions to maintain a sustainable world.

## Climate Change Strategy and Action Plan

To achieve the goal of carbon neutrality by the year 2030 and the target of net zero greenhouse gas emissions by 2050, the Company has developed the BCP 316 NET strategy, which encompasses four key directions. These directions emphasize processes that are tangible and can yield long-term results:



### B: Breakthrough Performance

The goal is to reduce the greenhouse gas emissions by 30% from the baseline year (2019) by enhancing energy efficiency through high-performance production processes, minimizing carbon emissions, and environmentally-friendly clean energy and fuel use in the production process. The details are as follows:

- Energy management in the refinery business, with projects implemented to enhance energy efficiency, aiming to reduce greenhouse gas emissions. Examples include installing heat-insulating surface coating materials on the furnace wall to prevent heat loss, upgrading heat exchangers, and reducing high-pressure steam usage. Additionally, the Company studied and assessed carbon dioxide (CO<sub>2</sub>) emissions through Life Cycle Assessment (LCA) of the products.
- The marketing business focuses on using electricity from solar energy sources. This includes using solar-powered air conditioning systems in Inthanin and Dakasi stores, and installing solar rooftops at the service stations. The goal is to achieve Net Zero Service Stations. Furthermore, in collaboration with business partners, EV chargers are being installed at selected service stations along major routes to support the increasing adoption of electric vehicles (EVs) across all regions of Thailand. In 2023, 37 service stations were under the process of applying for licenses to install solar energy production units expected to total 1 MW, with an estimated reduction of over 600 tonnes of CO<sub>2</sub> equivalent emissions per year.



### C: Conserving Nature and Society

The greenhouse gas emission reduction target of 10% from the baseline year (2019). Bangchak Group has studied the feasibility and related risks on the activities to develop carbon capture and storage from the land and sea ecosystem last year. Bangchak Group has worked with multiple partnerships to exchange knowledge from experiences and ways to compensate the domestic and international carbon credit standard certification to further the green and blue carbon initiatives.

More information available in



Participation in Social Care Page 214



### P: Proactive Business Growth and Transition

The greenhouse gas emissions reduction target of 60% from the baseline year (2019) supported by the energy transition in order to achieve net zero greenhouse gas emissions from green energy technologies and achieve sustainable growth, which are also expected to be a New S-Curve business for Bangchak Group by focusing on green energy and energy transition technologies.



## NET: Net Zero Ecosystem

The Bangchak Group of Companies realizes the need to prepare Thai society for the goal of Carbon Neutrality by 2050 and Net Zero by 2065. Therefore, it drives collaboration with partners to prepare stakeholders both inside and outside the organization to have knowledge, understanding, experience, and awareness of the country's greenhouse gas management, carbon mechanisms, including trading systems, tax systems, and carbon credits, which are considered new issues for Thai society at the individual, community, SMEs, and business organization levels. In the past year, Bangchak Group communicated and created experiences together in various channels throughout the business value chain to achieve the most as follows:

- **Establishment of Winnonie E-Bike Rental Service Platform** Electric Motorbike hire-purchase service and focuses on Battery as a Service (BaaS) platform. Currently, it accumulates to 1,050 rental customers and 120 battery swapping stations, reducing gasoline consumption and spending to the customers of more than THB 41 million per year while reducing accumulated 2,100 tonnes CO<sub>2</sub> equivalent (when compared to motorbike fueled by gasoline).
  - **Fuel pipeline Transportation Business by BFPL and LNG Procurement and Distribution Business by BTSG** to support the business of providing and distributing low-carbon alternative fuels. In 2023, the volume of oil transportation through pipelines exceeded 4,416 million liters, which can reduce greenhouse gas emissions compared to road transportation by more than 22,084 tonnes of CO<sub>2</sub> equivalent per year.
  - **Partnership with Thanachok Oil Light Company Limited and BBGI Public Company Limited to establish BSGF Company Limited** to operate the business of producing and distributing sustainable alternative fuel (SAF) from used cooking oil at SAF production unit, Bangchak Phra Khanong Refinery. In addition, "Tod Mai Ting", also known as "Fry to Fly" Project, was established with partners inside and outside the value chain to collect used cooking oil through Bangchak service stations/food industry/restaurants/households. SAF is a fuel that the aviation sector around the world can use as a substitute immediately without affecting the engine, and help reduce carbon dioxide emissions by up to 82,000 tonnes of CO<sub>2</sub> equivalent per year. It also supports the business of producing and distributing SAF fuel from used cooking oil to return to the production process as much as possible.
- **Carbon Offset Scope 1 and 2 at the Office Building and Regional Offices** that released in 2023 by buying carbon credits from BCPG Public Company Limited headquarters office and was awarded carbon emission reduction from Low Emission Support Scheme: LESS by reducing energy consumption, electricity, and waste separation for recycling.
  - **Increase in Carbon Markets Club Network** As of December 31,2023, there are entities and individual members totaling 772 members (165 entities and 607 individuals). In the past year, the Carbon Markets Club has had many actions as follows:
    - **Support and Share Carbon Credits Transaction** via Carbon Markets Place with voluntary transactions. In December 2023 TVER and RECs carbon credit trading totaling 164,160,507 trees planted equivalent. Moreover, the members also broadcast the buy-sell posts on the Carbon Markets Club website.
    - **Communication to Raise Awareness** disseminate information and knowledge about global warming, carbon credit trading, and reducing greenhouse gas emissions through various activities and operations.
    - **System Development and Launch to demo the Carbon Footprint Tracking for Organization (CFO)** free of charge as a tool that develops a calculation system adhering from ISO14064 standard to help members identify the causes of significant greenhouse gas emissions and find ways to reduce them.

More information available in

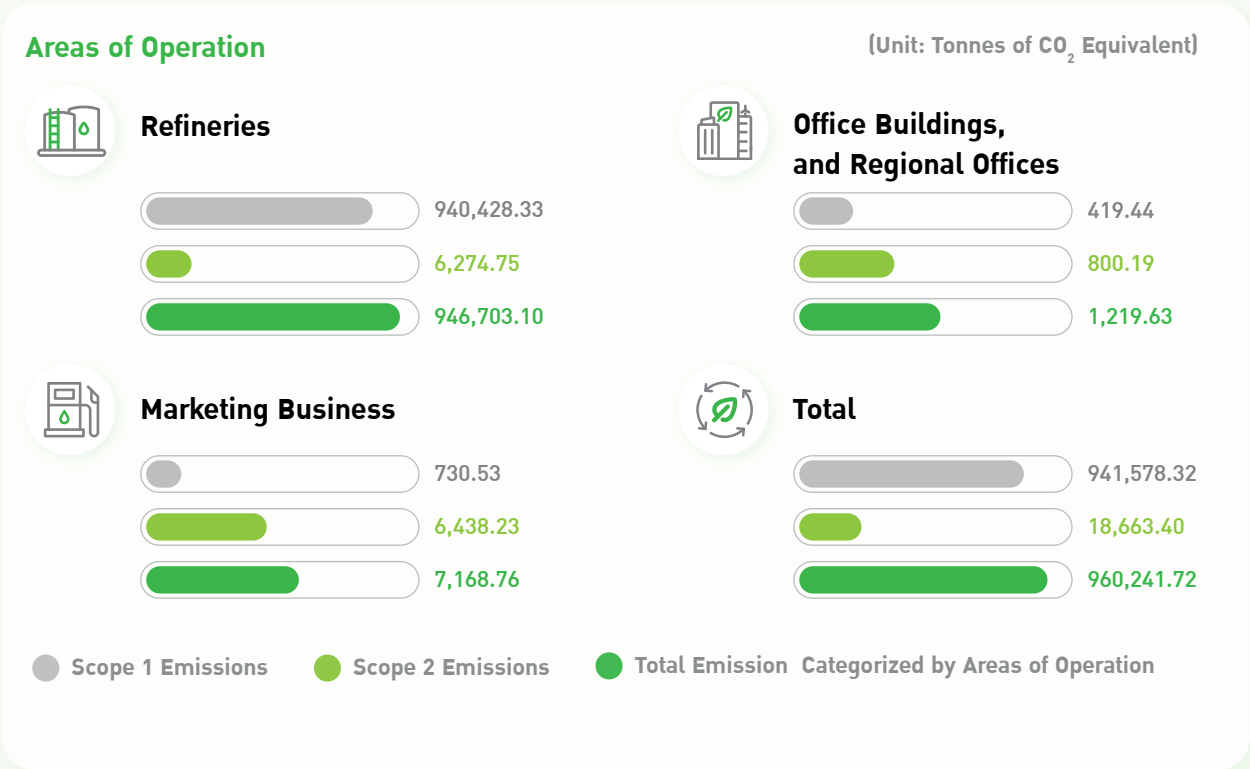


[www.carbonmarketsclub.com](http://www.carbonmarketsclub.com)

- **Climate Action for Employees** The KPIs are set in place for the second year to focus on the greenhouse gas emissions reduction behaviors to reduce the single-use plastic waste separation, use of public transportation, and reduce household electricity consumption by tracking in climate actions throughout the year. There are more than 500 employees in the process and can reduce greenhouse gas emissions by 90 tonnes of CO<sub>2</sub> equivalent, 28% higher than last year.

# Operating Results in 2023

In 2023, Bangchak group has released greenhouse gas with a total of **960,241.72** ton of CO<sub>2</sub> equivalent, and can be categorized as follows:



# Water Management

Water is a critical resource for businesses, industries, and various human activities. However, the risks and impacts of water-related problems, such as water scarcity and quality, have become increasingly severe in Thailand. Therefore, water management is essential to ensure the most efficient use of water and achieve sustainable water usage without harming the environment.

The Company, as an energy industry player that utilizes water in key production processes, such as steam generation for crude oil distillation and cooling, the Company recognizes the importance of water resources. The Company also acknowledges the risks and impacts of using water from sources in the operations and production processes, as well as the potential effects of wastewater discharge on the environment, external communities, and the company itself. Thus, the Company has conducted an enterprise-wide water risk assessment in terms of water quantity and quality, regulatory changes and pricing structure, and stakeholder conflict over water resources. Additionally, the Company analyzed water stress in the Chao Phraya River at the refinery and Samlae Raw Water Pumping Station in Pathum Thani Province, which are the sources of raw water that the Company receives from the Metropolitan Waterworks Authority for use in its production process. The Aqueduct Water Risk Atlas from the World Resources Institute and the ThinkHazard tool

from the Global Facility for Disaster Reduction and Recovery (GFDRR) were used to manage water appropriately in areas with water stress. These assessments indicated that the refinery and Samlae Raw Water Pumping Station are not in water-stressed areas.

The Company continuously manages water use risks through the Water Footprint of Product process for six product types to reduce tap water use in production, monitoring drought, flood, and water level changes in the Chao Phraya River, and managing the refinery's water management with the 3Rs principle (Reduce, Reuse & Recycle) to minimize tap water use. The results of water management are collected and presented for consideration and improvement through working groups at all levels, from operational to management levels. Further details can be found in the Bangchak and Sustainability section. Additionally, the Company actively listens to the opinions of all stakeholders, especially communities surrounding the refinery and government agencies that prioritize this issue, through various channels such as feedback during community activities and meetings with relevant government agencies. More detailed information can be found in Bangchak and Stakeholders section.

Tap Water Usage Reduction Project in 2023 is as follows:

- Installation of the new cooling tower for plant no. 3

## 2023 Targets



Use water efficiently to control the new water in the production process of

no more than **0.053** cu.m. per barrel of crude oil processed.



Reduce tap water and groundwater by

**40%** comparing to the water requirement in proportion to the crude oil quantity in the base year 2019.

## Strategy



Adopt 3Rs principle (Reduce, Reuse & Recycle) to increase efficiency of water usage.



Manage water with tools/modern technology.





## Operating Results in 2023

The Company used 2.61 million cu.m. of tap water from the Metropolitan Waterworks Authority and a small portion of groundwater according to the water management plan, which is one of the measures to reduce tap water usage during the drought crisis and maintain the groundwater wells at 0.02 million cu.m. In 2023, the Company received water from various sources totaling 2.64 million cu.m., including water separated from crude oil, and 2.63 million cu.m. excluding water separated from crude oil. This is equivalent to 0.060 cu.m. per barrel of oil equivalent. The Company discharged 0.945 million cu.m. of water into natural surface water sources. The amount of water used for the production process was 1.94 million cu.m., or 0.04 cu.m. per barrel of production capacity.

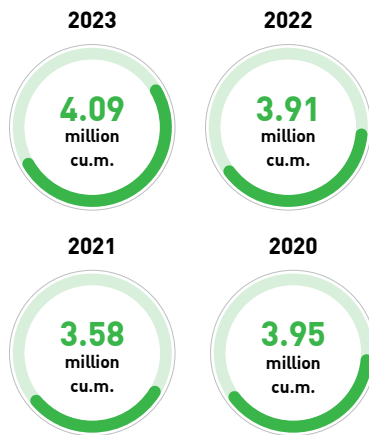


Order	2023 Plan	Operating Results
<b>Water Reduction</b>		
1	Improve water quality with Micro-filtration System and Reverse Osmosis System, along with the Electro De-Ionization System to treat raw water with Demineralization System in the power plant.	<b>Reduce water consumption 0.16 million cu.m. per year<sup>1</sup></b> (0.06% of tap water demand excluding water extracted from crude oil and equal to 3,704 cu.m. per million barrels of oil equivalent)
<b>Water Reuse</b>		
2	Condensate high quality water from the production process to be reused in the steamers.	<b>Reduce water consumption 0.59 million cu.m. per year</b> (0.23% of tap water demand excluding water extracted from crude oil 13,498 cu.m. per million barrels of oil equivalent)
3	Reuse stripped water from the sour water stripping unit and wastewater from stripping steam process of the distillation unit no. 3 to use instead of tap water in the desalter unit.	<b>Reduce water consumption 0.09 million cu.m. per year</b> (0.04% of tap water demand excluding water extracted from crude oil 2,123 cu.m. per million barrels of oil equivalent)
<b>Water Recycle</b>		
4	Recycle condensate water from the distillation unit 4 (plant 4) to treat and use in the boiler feed water.	<b>Reduce water consumption 0.45 million cu.m. per year</b> (0.17% of tap water demand excluding water extracted from crude oil 10,308 cu.m. per million barrels of oil equivalent)
5	Recycle the wastewater by treating with Micro-filtration System and Reverse Osmosis System to use in the cooling process.	<b>Reduce water consumption 0.18 million cu.m.per year</b> (0.07% of tap water demand excluding water extracted from crude oil 4,130 cu.m. per million barrels of oil equivalent)

## Success Metrics

In 2023	Control water consumption per production unit	Percentage of New Tap Water Usage Reduction in the Production Process for the Year (Percentage and Amount of Water Usage Reduction)	Water saving in household equivalent
Reduce tap water and groundwater use by 40% (Compared to the baseline year 2019) <sup>1</sup>	(Target: less than 53 cu.m. / thousand barrel of oil equivalent) 60 cu.m. / thousand barrel of oil equivalent	 <b>35.8%</b> 2023 Reduce New Water Usage by <b>1.48</b> million cu.m.	<b>3,900 households<sup>2,3</sup></b>
		 <b>40.04%</b> 2022 Reduce New Water Usage by <b>1.56</b> million cu.m.	
		 <b>41.13%</b> 2021 Reduce New Water Usage by <b>1.47</b> million cu.m.	
		 <b>36.60%</b> 2020 Reduce New Water Usage by <b>1.45</b> million cu.m.	

### Water Demand Requirement



Remark: <sup>1</sup> Not including water usage to Commissioning New Cooling Tower P#3  
<sup>2</sup> Compared to the baseline year of 2015, this includes a combination of reused water from good quality condensate water used in the boiler and within the 4<sup>th</sup> distillation unit, alongside water from the oily wastewater treatment unit further improved by the reverse osmosis system, and the water that has been treated from the wastewater treatment unit further improved by the reverse osmosis system and used in the cooling tower.  
<sup>3</sup> Water usage in Bangkok region, In Phra Khanong district where the refinery is situated, there is a member of 1.85 person per household, with the water consumption rate of 0.56 cu.m./person/day or 1.04 cu.m./household/day (source: MWA 2015)

# Water Management in Collaboration with External Organizations/Entities and Stakeholders

The Company engages in various environmental conservation activities, especially in water resources management through projects in collaboration with external organizations, agencies, and stakeholders. These activities include:

- **River Cleanup and Tree Planting:** Bangchak organizes river cleanup and tree planting activities along the Chao Phraya River in collaboration with local communities.
- **Oil Spill Response Vessel:** Bangchak has partnered with the Marine Department to procure the Sri Thararak 8, an oil spill response vessel, to help maintain the cleanliness from garbage and oil spill in the Chao Phraya River.
- **Used Cooking Oil Collection Project:** Bangchak collects used cooking oil from households and markets around the refinery and Bang Nam Phueng Floating Market to prevent oil from being discharged into the Chao Phraya River and public water sources.
- **ECO School Project:** Bangchak collaborates with the Department of Environmental Quality Promotion, Phra Khanong District Office, and Bang Na District Office to promote environmental education in 11 schools around the refinery. The project focuses on training school administrators, science teachers, and environmental teachers on integrating environmental education into the curriculum. This year, Banpithwitthaya School has implemented a project on “Wastewater Management in the Cafeteria” to reduce or eliminate wastewater from the school’s cafeteria from entering public water canals near the school, which eventually flow into the Chao Phraya River.
- **Project Citizen:** Bangchak collaborates with the King Prajadhikok’s Institute to enable students to propose public policies related to water, including preventing water pollution in schools and communities.
- **Canal Clean-up Awareness:** Bangchak partners with The Krung Thep Thanakom Company Limited to raise awareness among youth about the impact of canal waste on the environment and communities.
- **Fry to Fly Project:** Bangchak promotes and collects used cooking oil from households and food businesses to prevent oil from being discharged into public water sources.
- **The Beautiful Khlong, Clear Waters Project:** Bangchak collaborates with Phra Khanong District Office, Bangkok Metropolitan Administration, and Chulalongkorn University to improve the landscape of Bang O canal and the water quality in the canal to make it a clean and beautiful water source. This will have a positive impact on the ecosystem and biodiversity.

## Water Pollution Management

Water is a vital factor for the livelihood of living organisms, serving as the habitat for a diverse range of aquatic animals and plants. Additionally, water has benefits in agriculture, household use, and industry. The distillery business of the Company also relies on water for production processes. Therefore, reducing water pollution is crucial, and the Company must take responsibility to minimize its impact on natural water sources.

The Company manages water pollution through an efficient wastewater treatment system, resulting in treated water quality that exceeds legal standards. Moreover, the Company reduces wastewater volume through the principles of 3Rs (Reduce, Reuse, Recycle). Treated water is recycled back into the production process to reduce natural resource consumption and minimize environmental and community

impacts around the distillery. The wastewater treatment process of the distillery is divided into three parts.



### Physicochemical Treatment Process:

Reducing the contamination of oil and heavy metals in water



### Biological Treatment Process:

Reducing the contamination of water-soluble organic substances




### Tertiary Treatment Process:

Filtering out small solid particles and absorbing water-soluble organic substances remaining to ensure that the water meets appropriate quality standards before entering the recycling system.

The Company conducts internal controls to regulate the quality of wastewater treatment units according to the Company’s control standards. Regular analysis of water quality after treatment is performed at the Company’s laboratory, including pH and dissolved oxygen measurements, to ensure the wastewater treatment system remains efficient. Additionally, an online COD monitoring system has been installed to measure COD levels in real-time and provide results to nearby government agencies and communities surrounding the refinery area.


In addition to controlling the quality of wastewater from the Bangchak refinery, the Company also pays attention to the environment and the surrounding community. In 2013, the Company initiated the “Khlong Suay Nam Sai” project in collaboration with the Phra Khanong District Office, Bangna District Office, Phra Khanong Police Station, and Chulalongkorn University. This initiative aimed to conduct research on the water quality of Bang Aor Canal, which would serve as a prototype canal for development and rehabilitation of public water sources from the origin. The Company’s focus on initiatives like “Fry to Fly (Todd Mai Ting)” emphasizes reducing household oil waste into public water sources.






**Goal for water recycling in 2023**

= **170,000** cubic meters  
(only includes RO recycle units from the wastewater treatment system).




**The RO recycle units from the wastewater treatment system can recycle water for reuse**

= **181,093** cubic meters.



**Total water reused and recycled in the production process**

in 2023 = **1,318,052** cubic meters  
(including all units in the process).



**The amount of wastewater discharged from the production process into external water sources**

in 2023 = **944,862.49** cubic meters  
(combined from settling ponds 1 and 3).



# Air Quality Management

Throughout the past, Bangchak has developed its business in parallel with controlling air pollution. In addition to strictly complying with the law, Bangchak also considers its employees, contractors working in the refinery area, and the community and environment around the refinery continuously. It gives importance to controlling the emission of pollutants into the atmosphere from the source by continuously using all natural gas fuels, which are all clean fuels, in the production process. Moreover, Bangchak has installed globally standardized technology and operates the Sulphur Recovery Unit (SRU) at all time to achieve the highest sulfur removal efficiency and convert sulfur gas back into liquid sulfur products that can be beneficial in other industries while also reducing environmental pollution. It also installed burner technology as a Low NOx burner for all burners to efficiently reduce the release of nitrogen oxides from combustion. In 2023, Bangchak used the full-scale Enclosed Ground Flare, resulting in the gas sent to the waste incinerator being completely burned, reducing air pollution, noise, and light that occurred from the process, allowing Bangchak to run the business in parallel with caring for the surrounding community. The Company follows the direction of the international standard ISO 14001, which the Company has been continuously certified for 26 years. In addition, it has adjusted the target for emission reduction from the chimney to be more challenging, according to the proactive environmental management policy, by adding a continuous emission and transfer reporting system, monitoring and measuring air quality continuously through online measuring equipment at the chimney, work area, and atmosphere around the refinery, measuring air quality periodically by an external agency (Third Party), and arranging for the measurement of organic vapor leakage from equipment daily. In addition, Bangchak has also conducted a survey of volatile organic compounds (VOCs) leakage and prevention to continuously improve all control equipment of raw material storage tanks and products, such as:

**Waste incinerator (Flare) and fuel combustion:** Pollution reduction from the source according to the direction of Pollution Control by using natural gas fuels in all processes, resulting in low pollution from the source, along with

controlling combustion to be as efficient as possible, coupled with the addition of waste incinerator technology.

**Storage tank and product transportation (Loading):**

Selection of the type of storage tank that is appropriate for the stored oil and improve the control equipment and reduce the leakage on the tank roof continuously, such as improving the efficiency of the Secondary Rim Seal on all storage tanks. In the part of product transportation, it has installed Vapor Recovery Unit (VRU) technology with high efficiency of up to 99% to reduce the leakage of volatile organic compounds along with a monitor system to control all the time.

**Wastewater Treatment Plant:**

Measurement and monitor of volatile organic compounds from the wastewater treatment system regularly, as well as placement of activated carbon to help absorb vapors from volatile organic compounds.

**Leakage from production process (Fugitive):**

Control, measurement, and monitoring of evaporation along with improvement on the standard of equipment to be imported to be efficient, reduce leakage to the maximum.

Moreover, in 2023, it is determined to conduct business in parallel with the environment and sustainability. The Bangchak oil refinery has registered the Carbon Footprint of Product by the Greenhouse Gas Management Organization for 5 products, namely 1. Liquefied petroleum gas 2. Basic gasoline 3. Kerosene 4. High-speed diesel oil 5. Stove oil. The emission of greenhouse gasses from all 5 products is lower than the average of the country and is considered a low carbon product.

In addition, there is a cooperation agreement with the Asian Institute of Technology (AIT) and C-Quester Co., Ltd. from the United States to develop carbon capture technology, extend the capability, and create business opportunities to achieve carbon neutrality within 2030 and release zero greenhouse gasses within 2050 according to the BCP316NET plan.

## Strategy



### Environmental Management System

- ISO 14001



### Reduction in Air Pollution

- Use of clean fuel
- Reduction of the target for pollution emission from chimneys
- Selection of technologies to reduce air pollution emission



### Digitize Measurement and Transparent Communication

- Online monitoring of air quality from chimneys, work areas, and surrounding area of refineries
- Online communication of the environment quality to public in transparent and auditable manners

## 2021 - 2023 Target



- Zero air pollution complaints
- Pollution emission from chimneys in line with the target

## Operation Results in 2023

In 2023, the Company received no complaints from the community. However, the Company continues to care for and control the quality of air released into the environment as follows:

### ISCC EU Scope Storage and Trader

The Bangchak Oil Refinery has been certified for carbon and sustainable development internationally for the UCOME product, which is a global certification for sustainability and carbon reduction.

### Eco Factory Award

The Bangchak Refinery is managed under the industrial eco-factory standards that give importance to the development of the industrial sector in all 5 dimensions: physical, economic, social, environmental, and management. There is a specific requirement assessment in 14 topics, including eco-efficiency. The performance of the Environmental Management System of the Company's activities throughout the life cycle (Life Cycle Perspective) has been evaluated.

## Environmental Management System

Received international standard ISO 14001 certification continuously for 26 years.

## Digitize Measurement and Transparent Communication

There are 7 continuous emission monitoring systems (CEMs), sending real-time signals to the Department of Industrial Works, and Bangchak, which allow for continuous checking of the quality and also report the quality results through a continuous display screen.

## Reduction in Air Pollution

1. Use natural gas fuel for continuous combustion
2. Reduce the target for emission pollution from the chimney to be more challenging
3. Construct a new incinerator, Enclosed Ground Flare type, to work with the current Elevated Flare incinerator, which can accommodate the excess gas volume that is released from the production process as the refinery starts (Startup), stops (Shutdown), and in case of abnormal events (Emergency). It is an important project that helps enhance proactive measures to prevent impacts on the community in terms of noise, light, and environment.

# Operating Plan in 2023


## Reduction in Air Pollution

Prepare an integrated air quality management plan for volatile organic compounds (VOCs).

### Result



**1** Received **ISO 14001** certification continuously for 25 years.



More information available in **ISO 14001:2015**



**2** **Complaints about air pollution (target = 0 cases)**

cases	0	2023
cases	0	2022

**3** **Air quality measured by Third Party is within the standard 100%**

**4** **Control the release of Fugitive VOCs Every measurement point does not exceed 200 ppm (151 tonnes)** (the law stipulates not more than 500 ppm)

tonnes	2.75	2023
tonnes	2.99	2022




**5** **Install the second new incinerator, Enclosed Ground Flare type, currently under construction** (1 unit currently in use)




# Waste and Scraps Management

Waste Management is a critical focus area for the Company, and we diligently manage it in accordance with legal requirements and authorized regulatory bodies. Our approach aligns with the fundamental principles of the 3Rs: Reduce, Reuse, and Recycle. These practices are consistently applied both domestically and internationally to mitigate environmental impacts stemming from waste disposal. Our ultimate goal is to transition waste from production processes to a continuous cycle of responsible disposal, minimizing adverse effects.


The Company meticulously segregate waste management methods based on their origin—whether from production processes or maintenance activities. Each category is documented and quantified through our Waste Management Application. This system allows us to monitor waste generation within the Company and track waste disposal through the Controlled Waste Transportation Document (commonly known as the Manifest or Form KOR.2). Our primary focus remains on minimizing waste generation, striving for the least possible disposal. As part of our ongoing efforts, we have evolved from the foundational 3Rs to embrace the 5Rs and 7Rs in our waste management practices as follows:

- 


**Reject**

Reject usage of chemicals or materials that are harmful to the environment
- 

**Recovery**

Recovery of the valuable resources from waste to utilize, such as extracting and recovering metals from spent catalysts totaling 49.08 tonnes, regenerating from spent activated carbon totaling 15.34 tonnes, and treating spent caustic by neutralizing acid/base totaling 1,019.85 tonnes.
- 

**Rethink**

Rethink of overall utilization of wastes before disposal, such as oil quality inspection for lubricants that can be treated to improve quality instead of disposal totaling 20.30 tonnes.
- 

**Repurpose**

Repurpose used materials by utilizing in other purposes, such as using wood pellets in gardening within the projects.

Moreover, the Company has an excellent raw material procurements, resulting in minimum wastes since the beginning to the end of the supply chain since sourcing authorized waste disposal entities that is compliant with the laws and regulations with the commitment to advance the Circular Economy as our primary objective. Moreover, we conduct annual site inspections of our waste management partners to verify adherence to established standards.





In 2023, one of our oil refineries achieved certification under the Standard for Zero Waste to Landfill, as endorsed by the Department of Industrial Works since 2021. This ongoing commitment extends beyond industrial waste management to encompass waste handling within our offices. We are actively transitioning these office spaces toward zero-waste practices, guided by the principles of the 3Rs with activities such as

- **Making awareness in good waste management practices**, publish and motivate the waste categorization in waste bins, stop using styrofoam boxes, reduce single-use plastic, and reduce paper usage, etc.
- **“Cups for Saplings” Project** of Inthanin coffee shops, a brand from Bangchak, is motivating the zero waste practice such as reducing beverage price for employees who bring their own cups, the project was initiated in 2019 by giving discounts for those who bring back Inthanin cup at the stores, encouraging the responsibility on waste management instead of it going to landfills. The returned cups are, then, given to the Royal Forest Department for planting saplings.
- **Clothes Swap Project** for the employees to exchange used clothes and bags for donation to underprivileged groups, with incentives to motivate and invite employees to participate in.
- **Green Shelter Project** by collecting UHT beverage boxes to recycle as roofing, eco-brick, and building materials to help the victims. Bangchak established this project in 2019, and it is still ongoing until today with the total amount of 1 ton of UHT boxes.
- **Khaya Kampra Project**, where Bangchak partnered with N15 technology to buy non-recyclable waste materials such as plastic food containers, snack wrappers to utilize as an alternative fuel instead of coal in cement kilns. The project includes waste collection points and bins specifically for this washing and disposal. N15 Technology weekly collects wastes from not only the Bangchak refineries and headquarters office buildings, but also expanded to four service stations in Bangkok and its vicinity. In 2023, Bangchak contributed 6,207 kilograms of waste to the project.

- **The Office Paper Waste Management Project** commenced in 2020 through the collaboration with Thailand Responsible Business Network (TRBN). As part of this initiative, we segregate paper waste from our offices and exchange it for new A4 paper. From 2020 - 2023, we successfully collected 6,890 kilograms of unused paper from the Bangchak refinery offices, resulting in over 100 reams of fresh new paper.

In 2023, Bangchak further promoted office waste management, achieving a landfill diversion rate of 46%. Our commitment to continuous improvement drives us toward the ultimate goal of Zero Waste to Landfill across all sectors by efficient management according to the 3Rs principle of the refinery.



## Strategy



Waste management under 3Rs principle



Compliance with related laws and regulations

## 2023 Target

- Zero wastes to landfills

- Control and maintain waste management practices under 3Rs principle continuously

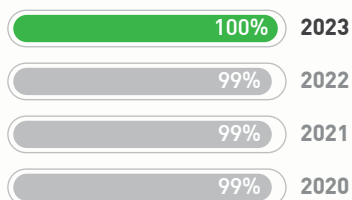
## Operating Results in 2023

### Waste Quantity from the Production Process in 2023

- Hazardous Waste : **3,435.37** tonnes or **27%**
- Non-Hazardous Waste : **9,288.39** tonnes or **73%**

The Company manages wastes under 3Rs principle, 100% of total wastes can be further utilized.

### Waste Management in the Production Process under 3Rs Principle (Percentage)



Zero Waste incineration without energy recovery (not including recycle or reuse, or incineration with energy recovery) totally 0.00 tonnes (incineration and landfills)

## 2025 Target

- **Zero** wastes to landfills (production process)
- Waste incineration without energy recovery (not including recycle or reuse, or incineration with energy recovery) totaling **0** tonne (production process)
- Control waste generation intensity of waste generated per production unit, reduce by **3%** from a normal business operation in 2025, comparing with the baseline year.

## Circularity

The Company has adopted the BCG Economy Model, which consists of three main economies: Bioeconomy focuses on the efficient use of biological resources, relying on technology and innovation to transform agricultural output into high-value biological products, Circular Economy focuses on the efficient use of resources, raw materials, and products, and Green Economy focuses on solving environmental problems and reducing impact sustainably. The Company incorporate this concept into our business operations to create value and sustainability for the Company and all our stakeholders. The following are our guidelines for implementation:

1. Increase the efficiency of resource use, reducing the risk of future natural resource shortages.
2. Minimize environmental impact to the greatest extent possible, aligning with the goals of sustainable production and consumption.

## Company's Target

1. Apply Circular Economy principles to innovate resource utilization for sustainable consumption.
2. Support the reuse of single-use plastics to create new value by sending seedlings via Inthanin's biodegradable cups, returning them to the soil.

## Operating Results in 2023

Bangchak Group has taken a major step forward in its commitment to sustainability with the first Sustainable Aviation Fuel (SAF) business in Thailand and the signing of a construction contract for a new SAF production unit on June 28, 2023. The unit, which will be located at Bangchak's refinery in Bangkok, will have a production capacity of 1 million liters per day. The ceremony for the Construction Agreement of Sustainable Aviation Fuel Production Unit was signed between BSGF Company Limited (a joint venture between Bangchak Corporation Public Company Limited, BBGI Public Company Limited, and Thanachok Oil Light Company Limited) and TTCL Public Company Limited. TTCL is a Japanese engineering and construction company with over 20 years of experience collaborating with Bangchak. This project directly supports the reduction of carbon dioxide emissions in the aviation industry, aligning perfectly with all three dimensions of the BCG Economy Model.

The SAF production unit at Bangchak's refinery will utilize pre-treatment technology from Desmet (Malaysia) to process used cooking oil collected from households and businesses through the "Tod Mai Ting" or "Fry to Fly" project and other channels. Additionally, the unit will employ UOP Ecofining Technology from Honeywell UOP (USA), a highly effective solution for sustainable aviation fuel production. This technology involves deoxygenation, restructuring, and hydrogen molecule cracking to convert the used cooking oil into a suitable fuel for jet engines. The production of sustainable aviation fuel is expected to commence in quarter 4 of 2024. Additionally, the public can sell their used cooking oil at Bangchak service stations and collection points under the "Tod Mai Ting" project. This used cooking oil will be used to produce SAF, which promotes health, protects the environment, and generates additional income.

## 2025 Target

SAF can reduce carbon dioxide emissions by up to 80% over the lifecycle of the fuel compared to fossil-based jet fuel. This aligns with Bangchak Group's BCP 316 NET plan to achieve net-zero greenhouse gas emissions by 2050 and support Thailand's goal of net-zero emissions by 2065. The project also builds on the success of Bangchak's "Tod Mai Ting" project, which collects used cooking oil from households and businesses for recycling.



# Product Transportation

The Company emphasizes the development and improvement of the product transportation process to be efficient, accurate, timely, and safe. The goal is to reduce the impact on the community and the environment resulting from contamination in the event of a product leak. The following are the guidelines:

- Increase transport efficiency in terms of cost, time, safety and environmental care by reducing greenhouse gas emissions.
- Maintain partners and drivers, who are responsible for the delivery of finished oil products from the refineries to the service stations, adhering to the appointed schedule.

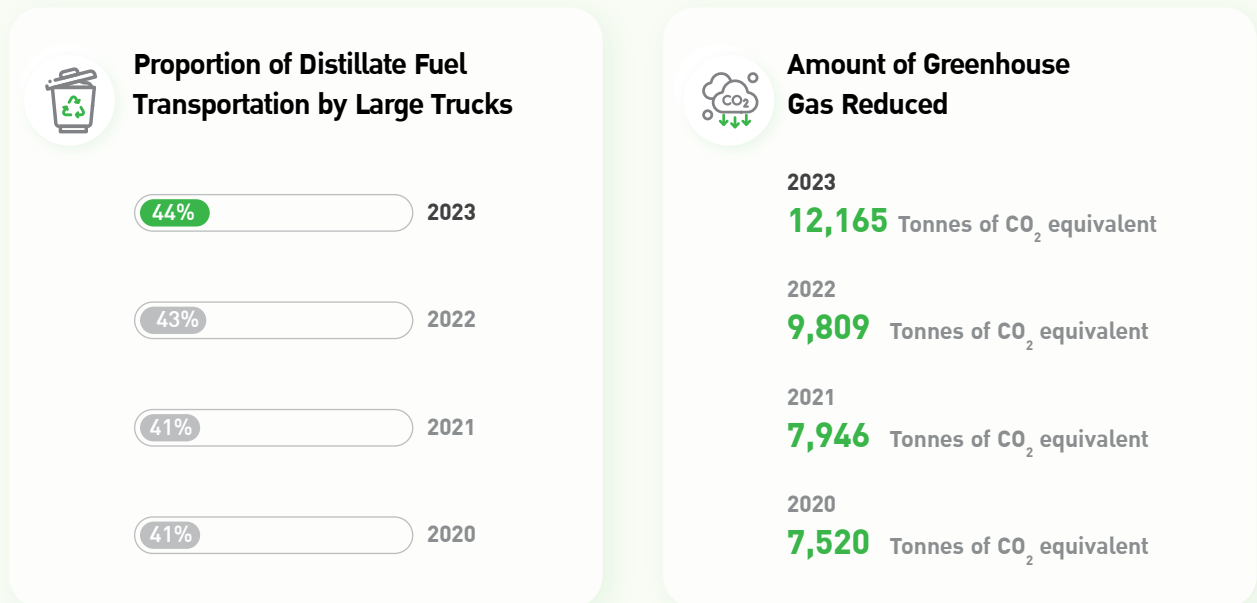
## Product Transportation Efficiency Improvement

### 2019–2024 Targets

- 45% of all deliveries are made using large (semi-trailer) trucks.
- Deliveries meeting future delivery demands based on its sales plan (calculated from 330 new Bangchak service stations between 2019 and 2024 and the conversion of over 800 Esso stations to the Bangchak brand).
- Increase delivery efficiency is expected through system integration with Esso, additional oil terminals, and pipelines in the North and Northeast regions.
- Zero accidents (defined as incidents with vehicle damage exceeding THB 1 million).
- Transportation-related complaints are targeted to be no more than 3.5 complaints per 1,000 trips.

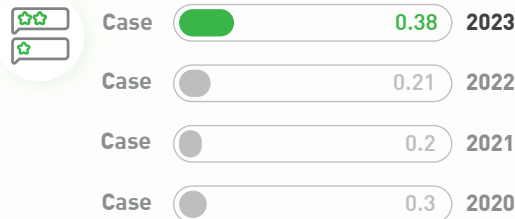
### Operating Results

#### Proportion of Distillate Fuel Transportation by Large Trucks (Semi-Trailers) and Amount of Greenhouse Gas Reduced (tCO<sub>2</sub>e)



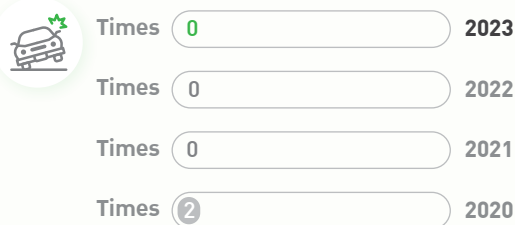
## Transportation-Related Complaints (Complaints per 1,000 trips)

(Target: ≤ 3.5 complaints per 1,000 trips)



## No. of Accidents from Transportation\*

(Target: Zero Accident)



\* (Incidents with vehicle damage exceeding THB 1 million)

## Strategy

- 45% of all deliveries are made using large (semi-trailer) trucks.
- Rezone the transportation area to reduce incidents and traffics in the warehouse.
- Deliver oil based on the future sales plan to the customers (calculated from 330 new Bangchak service stations between 2018 and 2023 and the conversion of over 800 Esso stations to the Bangchak brand).
- Zero Accident (defined as incidents with vehicle damage exceeding THB 1 million). Less than 3.5 complaints per 1,000 trips.

## Key Operating Activities

The Company increases the delivery proportion of large trucks (semi-trailer) and adopt related technologies to increase the efficiency of the logistics system as follows:

- **Increasing the Proportion of Large Truck (Semi-Trailer) Transportation:**

In 2023, the proportion of large truck transportation was increased to 44% by providing discounts to service station operators when transporting with large trucks and by preparing space to accommodate large trucks in the construction of new service stations. This transportation method helps reduce greenhouse gas emissions by 12,165 tonnes of CO<sub>2</sub> equivalent compared to using two single trucks per trip.

- **Development of Transportation Technology:**

An automatic oil ordering system (Auto Ordering System: AOS) has been implemented within the service stations under Bangchak Green Net Company Limited to manage reserve oil volume and plan orders efficiently.

Moreover, the Company also improved the Transportation Management System (TMS) to be able to:

- Match oil orders from service stations along suitable routes to increase the use of large trucks (multi-drop) instead of manual arrangements.
- Match trips to reduce empty return trips and allow for products to be delivered both outbound and inbound (Backhaul).
- Track oil transportation in each round, including driver behavior such as transportation speed and drowsiness, to prevent accidents and increase transparency in transportation.

- **Complaint Management:**

The E-Complaint system is in place to manage complaints by providing a channel for inquiry with a proper monitoring system connected to the SAP system to collect fines data to transportation service providers automatically to motivate the service standards.

- **Rezone** the transportation system to be aligned with the increase of oil terminals and deliveries through the fuel pipeline to the Bang Pa In depot. This includes shifting the delivery zones for service stations in Pathum Thani and Nonthaburi provinces away from the Bang Pa-in depot, as well as adjusting delivery zones for service stations in Chonburi away from the Bangkok refinery in favor of the Bangchak Sriracha depot. These changes aim to reduce the distances traveled by road transport, which will decrease costs, save time, and improve safety.

## Partners and Drivers Care

Partners and drivers who transport products are essential to the efficiency of oil delivery to service stations. In order to ensure that the partners and drivers are well-cared for, the Company has implemented a number of targets and initiatives as follows:

### Targets

- Support good relationships between customers and transportation service providers.
- Save cost responsibility to transportation service providers.
- Fair and efficient jobs provided to transportation service providers.

### Key Operating Activities

The Company implemented caring practices to the partners and drivers after the COVID-19 pandemic as follows:

- Conduct online and offline monthly meetings to set objectives and KPIs.
- Improve the planning automation instead of manual arrangements for efficient and fair business processes and practices to the service providers.

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## Future Plan

- Increase the efficiency of transportation from system integration with Esso and increase the oil terminals and pipelines in the North and Northeast regions.
- Implement Artificial Intelligence technology to support the analysis and transport process improvement such as delivery point, routing, increase efficiency by reducing empty return trips, and increase customer satisfaction.
- Expand semi-trailers trucks delivery proportion to 45%.



# Biodiversity Management

The rapid economic growth and human activities in present days have led to an increased use of natural resources and disturbances to various natural ecosystems. This impacts the environment, all species of living things, including humans, which are affected in terms of quality of life, such as a reduction in food sources, and economic activities, such as reduced productivity from areas that lose plant and animal species. The Company is aware of the positive and negative impacts on biodiversity from the Company's operations, so it has developed "Policy on Biodiversity Management and Anti-Deforestation with a commitment to biodiversity and non-destruction of forests throughout the business value chain, covering key stakeholders, namely suppliers and partners, by setting goals and guidelines for practice as follows:

## Goals for Biodiversity Management and Anti-Deforestation

1. Avoid conducting business in areas that are crucial for biodiversity, namely the World Heritage areas according to UNESCO criteria, wetlands under the Ramsar Convention, and conservation areas designated by the International Union for Conservation of Nature (IUCN).
2. Avoid creating negative impacts on the environment and biodiversity from business operations.
3. Avoid creating impacts on forest areas, and if there are impacts on forest areas caused by business operations, restoration or afforestation must be carried out to compensate for forest loss (No Net Deforestation).
4. Operate in accordance with the framework of achieving the goal of zero greenhouse gas emissions in 2050 (Net Zero GHG Emission in 2050) of the Company.




# Practice Guidelines

The Company manages biodiversity through a 5-step process as follows:

## 5-Step Process

### for Biodiversity Management






**1. Policy Establish**  
Biodiversity management and Anti-Deforestation Dimension





**2. Risk Assessment**

Evaluate impacts at every step of business operations through the business value chain in:

**Location**

 International Union for the Conservation of Nature: IUCN  
 UNESCO World Heritage Sites  
 Ramsar Site

**Impacts**

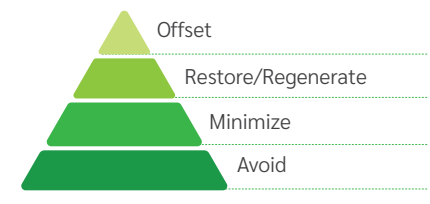
 Air  
 Water  
 Soil  
 Waste

**Dependency**

- Direct Physical Input
- Protection from Disruption

### 3. Determine measures / remedial mechanisms

Apply the “Mitigation Hierarchy” guidelines



### 4. Monitoring

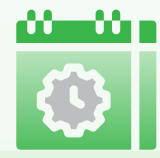
Measure and monitor on the development of policies continuously.



### 5. Report / Communication

Create participation of the community and key stakeholders, including trade partners and alliances, together with a collaboration with external agencies in tracking, reporting, and disseminating performance information.

1. Establish a policy on biodiversity management and Anti-Deforestation.
2. Assess the risks to biodiversity in 2 aspects, including the impact on biodiversity from business operations and the dependencies on nature in business operations, in the main operating area (Own Operation) and downstream activities, covering the areas of business operation as shown in the table. There will be an expansion of the risk assessment scope to upstream activities, including business partners with the Company (Tier-1 supplier) in the future.





Business Operation Area	Location	Number of Areas	Area Size (Hectares)
Bangchak Phra Khanong Refinery	Phra Khanong District, Bangkok	1	76.80
Bang Pa-In Oil Storage	Bang Pa-In District, Ayutthaya	1	24.96
Service Stations*	Central Region - Bangkok, Nonthaburi, Samutprakarn, Samut Sakhon, Nakhon Pathom, Ayutthaya, Sing Buri, Pathum Thani, Saraburi, Lopburi, Uthai Thani, Nakhon Sawan, Kamphaeng Phet, Phitsanulok Northern Region - Phetchabun, Tak, Uttaradit, Chiang Mai, Chiang Rai Northeastern Region - Khon Kaen, Chaiyaphum, Maha Sarakham, Nakhon Ratchasima, Udon Thani, Surin, Roi Et, Buriram Eastern Region - Chachoengsao, Chonburi, Chanthaburi, Rayong Western Region - Phetchaburi, Kanchanaburi, Prachuap Khiri Khan Southern Region - Surat Thani, Songkhla, Nakhon Si Thammarat, Trang, Phuket, Krabi, Chumphon	276	216.73
<b>Total</b>		<b>278</b>	<b>318.49</b>

Remark: \* Covers service stations of the type where the Company owns and operates (COCO) and the type where the Company is the investor and owner of the station with experienced operators managing and operating the station and leases (Company Owned Dealer Operation, CODO).

## 2.1 Assessment of the impact on biodiversity from business operations

The Company assesses the biodiversity impact in the dimension of the location of business operation area together with the environmental dimension by considering the distance of the business operation area from areas of high biodiversity value namely UNESCO World Heritage sites, Ramsar Convention wetlands, and conservation areas designated by the International Union for Conservation of Nature (IUCN) within a radius of 5 kilometers, using the geographic information system (GIS) program to

screen for business operation areas located within a radius of less than 5 kilometers from areas of high biodiversity value. Then, the environmental impact for air, water, soil, and waste, will be assessed, considering compliance with legal requirements in operations. Subsequently, measures are devised to mitigate these impacts in line with the identified risk levels (details are shown in the work diagram). The company mandates the installation of Vapor Recovery Systems at all service stations located within a radius of less than 5 kilometers from areas of high biodiversity value.

### 2.2 Assessment of dependencies on nature in business operations

The Company considers its dependencies and use of ecosystems in business activities, including physical aspects such as the use of groundwater or surface water, control and prevention aspects such as climate control, climate change, flood and storm prevention, prevention of soil degradation, etc. The assessment is done using the Exploring Natural Capital Opportunities, Risks and Exposure (Encore) tool.

- 3. Establish policies by applying the “Mitigation Hierarchy” approach, which includes avoiding severe impacts (Avoid), minimizing impacts by improvements in operation (Minimize), restoring (Restore), and offsetting losses that occur (Offset).
- 4. Monitor and report the results of operations, and identify opportunities for continuous improvement and development.
- 5. Enhance the participation of communities and key stakeholders, including trade partners and business partners, as well as working with external partners (External Partners) to promote the value of biodiversity.



#### Assess the distance between business location and the areas of high biodiversity value.

The business location is within a distance of < 5 kilometers.

#### Assess the environmental impact

The operations are compliance with legal requirements



Medium Risk



Increasing measures to control pollution emissions



Low Risk

The operations are not compliance with legal requirements



High Risk



Establish plan / measure to mitigate the impact immediately

## Operating Results in 2023

1. Announcement on the use of the biodiversity management and non-destruction of forest areas, which has been approved by the Sustainability and Corporate Governance Committee (SCGC), which has been assigned by the Company's Board of Directors to set policies and guidelines for corporate governance and sustainable development.



More information available in



Biodiversity Management  
and Anti-Deforestation Policy

2. The assessment results of the distance between business operation areas with areas of high biodiversity value found that 22 service stations are within less than 5 kilometers radius from areas of high biodiversity value. This includes service stations in Central region comprising 3 service stations in Saraburi and Samut Sakhon provinces with 1.82 hectares total area, Eastern region comprising 8 service stations in Chonburi province with 4.74 hectares total area, Western region comprising 1 service station in Prachuap Khiri Khan province with 0.97 hectares total area, Northern region comprising 4 service stations in Chiang Mai province with 0.99 hectares total area, Southern region comprising 6 service stations in Surat Thani, Krabi, and Phuket provinces with 3.55 hectares total area as shown on the map. With subsequent environmental impact assessment for the area, it was found that all the 22 service stations have a low risk of creating severe impacts on biodiversity; hence, further monitoring and surveillance will continue to be carried on.

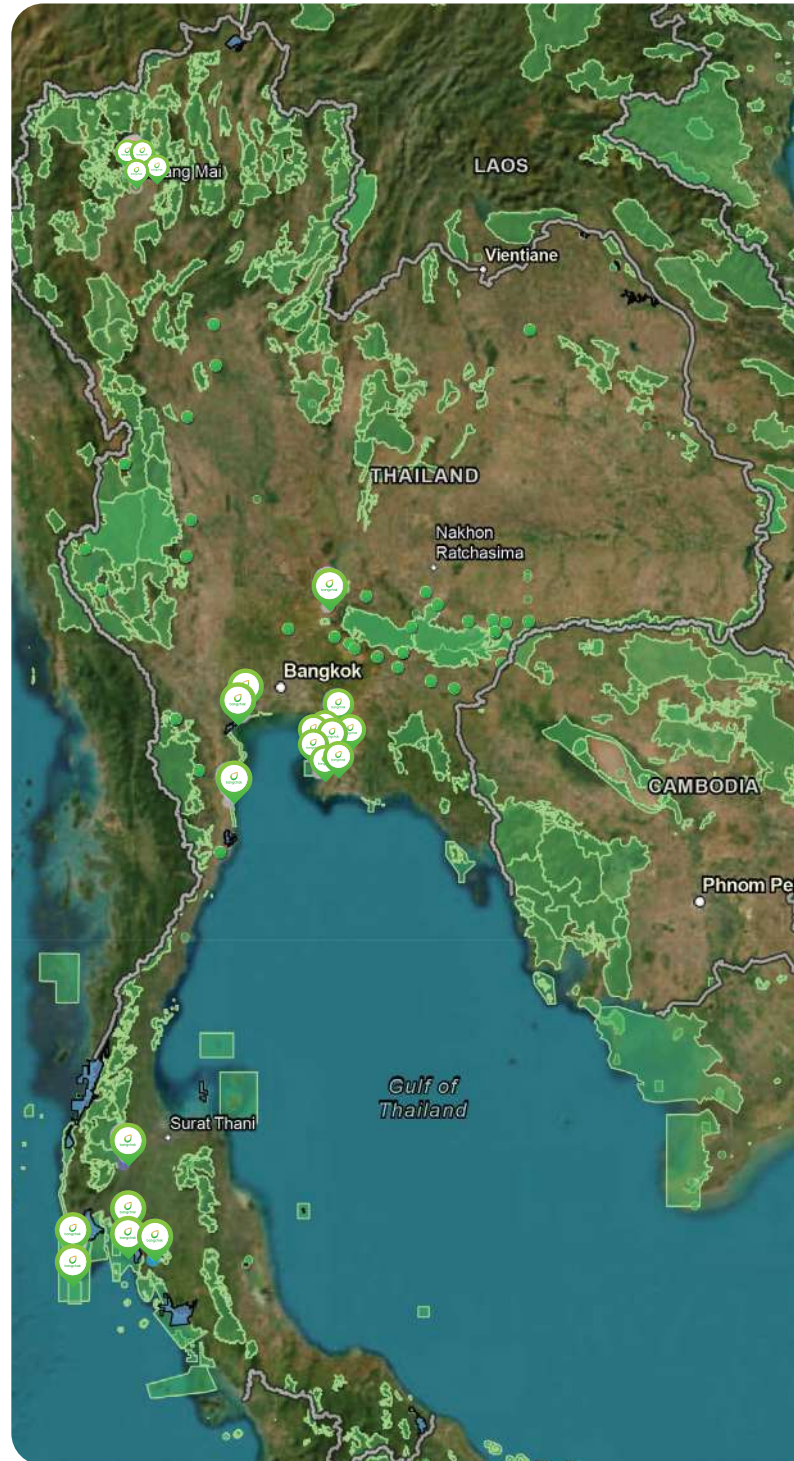
The assessment results of the dependencies on nature in business operations found that the business operations rely on nature to protect against floods and storms. The Company prepares a crisis management plan for the case of acute flooding and closely monitors the flood situation and water levels in the operating area.



More information available in

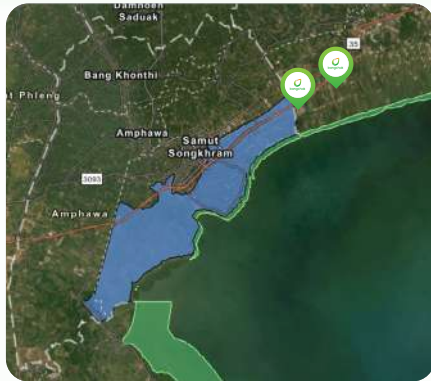


biodiversity management



3. The Company prioritizes environmental conservation, restoration, and the utilization of biodiversity by participating as a supporter and working group in organizing the international academic conference on biodiversity "International Conference on Biodiversity (IBD2023)" and has implemented projects to enhance the participation of communities and stakeholders in conservation, restoration (Restore), increase new green areas (Regenerate), and increase areas with biodiversity value continuously as follows:

## Central Region



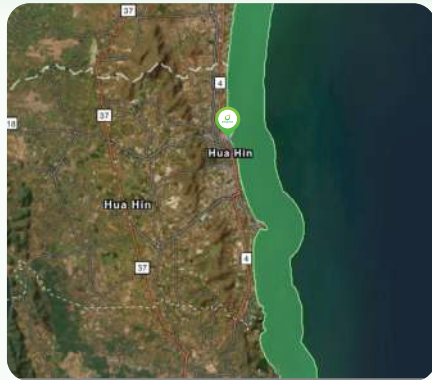
3 service stations in Saraburi and Samut Sakhon provinces with 1.82 hectares

## Eastern Region



comprising 8 service stations in Chonburi province with 4.74 hectares

## Western Region



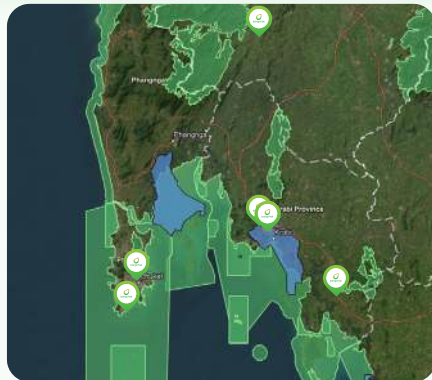
comprising 1 service station in Prachuap Khiri Khan province with 0.97 hectares

## Northern Region



comprising 4 service stations in Chiang Mai province with 0.99 hectares

## Southern Region



comprising 6 service stations in Surat Thani, Krabi, and Phuket provinces with 3.55 hectares



Business Operation Area <5 km radius



UNESCO World Heritage



Ramsar Convention



IUCN Protected Area

# Biodiversity Promotion Project

## Sen Thang Hing Hoi, The Path of Conservation Project

### Overview of Operating Activities / Management

The Project has been carried out in the community area of Khung Bang Kachao, Phra Pradaeng District, Samutprakan province, comprising 6 sub-districts, namely Bang Nam Phueng, Bang Kachao, Bang Krasop, Bang Yo, Bang Kobua, and Song Khanong, from 2013 to present. The area is a green area that is fertile, has high biodiversity, and is a close neighbor. The focus is on restoring the ecosystem, taking care of the fireflies living in the area to sustainably exist in nature.

Target	Strategy	Operating Result
<ol style="list-style-type: none"> <li>1. Conservation of areas and the number of fireflies in the 6 Sub-districts of Khung Bang Kachao</li> <li>2. Restoration of the ecosystem in the Khung Bang Kachao area to be a firefly conservation area</li> <li>3. Creating correct knowledge and understanding about firefly conservation</li> <li>4. Creating a network of groups working in the area for firefly conservation</li> <li>5. Promoting employees to benefit the community in terms of the environment</li> </ol>	<ol style="list-style-type: none"> <li>1. Establish a committee to drive conservation work and plan with the Company from all 6 sub-districts</li> <li>2. Develop community leaders/ youth, create participation, and consciousness in participating in environmental care in the residential area, both in terms of development operations and research support</li> <li>3. Organize projects/activities to restore the environment, improve the landscape, and other appropriate and continuous activities</li> <li>4. Support academic research for conservation and breeding of fireflies</li> </ol>	<ol style="list-style-type: none"> <li>1. Established a committee of 25 people from all 6 sub-districts to drive the project and meet about operations according to the agenda</li> <li>2. Established a survey/count team of 60 people from all 6 sub-districts to create participation, cultivate consciousness in participating in environmental care in the residential area, and be data for use in related research. This led to the overall result up to the present year 2023 where fireflies continue to exist in the area with the increases / decreases in number depending on the environmental conditions during that period</li> <li>3. Organize projects activities: <ul style="list-style-type: none"> <li>• Approximately 78 youth participating in various projects / activities</li> <li>• Support for continuous landscape improvement</li> <li>• Training in conservation knowledge, junior guides</li> <li>• Lamphu forest planting activities; creating walkways, bridges, embankments</li> <li>• Media and public announcement for World Firefly Day; academic seminar “A Gathering of Firefly Lovers”</li> </ul> </li> <li>4. Support researchers both in the area and outside the area to conduct academic research for conservation and breeding of fireflies for 2 research; part of the research found that the Company’s operations do not affect fireflies and the environment in the area, both in terms of quantity and quality</li> </ol>



## Supporting Project for the Bang Nam Phueng Large Farm Stingless Beekeeper Group

### Overview of Operating Activities / Management

Support/promote/develop/care for stingless bee farming on the basis of environmental conservation, biodiversity, linked with promoting the economy with the community in a close and participatory manner, to ensure that the environment and various lives can exist according to nature/environment continuously and sustainably.

Target	Strategy	Operating Result
<ol style="list-style-type: none"> <li>1. Stingless bee farming operations in the Bang Nam Phueng sub-district area that is systematic, standardized, and widely acceptable</li> <li>2. Knowledge in stingless bee farming and other related areas that are standard and suitable for the local area</li> <li>3. Community network and group of people working in stingless bee farming in the area</li> <li>4. Stingless bee, their honey products, and others from stingless bee farming that are of high quality and standard in line with market needs</li> <li>5. Elevate to be a community enterprise of stingless bee farming, Bang Nam Phueng Subdistrict</li> <li>6. Stable, sustainable, and continuous income for the group, members, and community</li> <li>7. Sustainability in stingless bee farming operations in the area</li> </ol>	<ol style="list-style-type: none"> <li>1. Support the establishment of large farm stingless beekeeper group</li> <li>2. Establish a committee in the area to drive work</li> <li>3. Develop community leaders</li> <li>4. Organize projects/activities/training, and others</li> <li>5. Expand and increase the number of farmers who cultivate and raise</li> <li>6. Expand and increase the number of stingless bees and hives</li> <li>7. Support education and expand the planting of tree species and flowers that are food for stingless bees, conform/support the ecosystem, and biodiversity of the area</li> <li>8. Create and support participation and cooperation by the community/public/ various agencies in the area, such as the Phra Pradaeng District Agriculture Office, the Department of Agricultural Promotion, the Bang Nam Phueng Subdistrict Administrative Organization, the District Livestock Office, and the Provincial Livestock Office, the Department of Livestock, Ministry of Agriculture and Cooperatives, etc., to achieve sustainability in operations</li> <li>9. Support operations, studies, and research with related external networks</li> </ol>	<ol style="list-style-type: none"> <li>1. The estimated population of stingless bees in the area; in nature: <math>\geq 1,000</math> bees from beekeeping: <math>\geq 350,000</math> individuals for cultivated populations</li> <li>2. Number of flowers and fruit that serve as food sources for the bees <math>\geq 12</math> types, such as coconut, xanthostemon chrysanthus, banana, mango, lime, langsat, orange, etc. (research from samples of stingless bee honey by King Mongkut's University of Technology North Bangkok, Rayong Campus) The productivity has improved, and some areas have trees/plants that have never fruited before, such as kaffir lime, bilimbi, etc</li> <li>3. The large-scale farmer group of stingless beekeepers in Bang Nam Phueng Sub-district has a committee/ working group of 10 people and 100 group members/ stingless beekeepers/individuals/household</li> <li>4. 600 bee hives being cultivated</li> <li>5. Projects and activities such as knowledge providing on stingless bees and their cultivation, supplementary food for stingless bees, support for expanding the number of members/hives/bees, World Bee Day activities, study visits, etc</li> <li>6. Products from stingless bee honey and others, totaling 8 types: 1. Honey 2. Soap (bar) 3. Premium soap (bar) 4. Shower cream 5. Shampoo 6. Lotion 7. Balm 8. Mosquito spray (herbal)</li> <li>7. Support for external cooperation in both development and research, such as joining the Big Brothers network of stingless bees with the National Research Council of Thailand (NRCT), Department of Industrial Promotion, Ministry of Industry, and network partners, etc</li> </ol>



# The project for conservation/restoration of green areas

## Punsook Urban Greenery Project

### Overview of Operating Activities / Management

The Company operates the Punsook Urban Greenery Project to create, enhance, and increase green areas, which is one of the important parts in leading to biodiversity. In 2023, continuous work was carried out at the community level through the planting of supplementary trees in the vicinity of the Bangchak oil refinery, Phra Khanong District, Bang Na District, in cooperation with Bangkok Metropolitan Administration, Phra Khanong District Office, Bang Na District Office, Expressway Authority of Thailand, community and schools in each area and the area of Khung Bang Kachao, Bang Nam Phueng Sub-district, Phra Pradaeng District, Samut Prakan Province, in cooperation with the Bang Nam Phueng Sub-district Administrative Organization, Bang Nam Phueng Sub-district community leaders, the Royal Forest Department, Green Area Management Center, Nakhon Khuean Khan, supplemented with work through the Our Khung Bangkachao project.

Target	Strategy	Operating Result
<ol style="list-style-type: none"> <li>Green areas in the operating area that are fertile in consistent with its conditions and environment, promoting biodiversity</li> <li>A cooperation network to increase green areas at the community level</li> <li>Sustainability in the operation of green areas to support biodiversity in the area</li> </ol>	<ol style="list-style-type: none"> <li>Develop, enhance, and expand green areas to support biodiversity through the planting of trees in the vicinity of the Company's operating area, the Company's community relations operating area, and outside areas</li> <li>Promote and select tree species to be planted and carried out in the project, focusing on suitability, benefits, and compatibility with the area in a sustainable manner</li> <li>Create cooperation and participation with network partners both in the area and outside the operating area, such as the Phra Khanong District Office, Bang Na District Office, Bang Nam Phueng Sub-district Administrative Organization, the Royal Forest Department, Expressway Authority of Thailand, schools in the area, etc</li> </ol>	<ol style="list-style-type: none"> <li>Enhance green areas through the planting of trees in the vicinity of the Company's operating area, Bangchak oil refinery, Phra Khanong District, and Bang Na District, totaling 15,550 trees. The tree species planted were selected for their suitability, in cooperation with the Phra Khanong District Office and Bang Na District Office. Example species include Ratchaphruek, Champi, Rong Phung, Thong Urai, Cha Hok Kian, Kem, etc</li> <li>Enhance green areas through the planting of trees in the Company's community relations operating area, Khung Bang Kachao area, Bang Nam Phueng Sub-district, Phra Pradaeng District, Samut Prakan Province, totaling 900 trees. The tree species planted were native species mixed with other species suitable for planting in the area, such as Pilangkasat, Kamphu, Yang Na, etc</li> </ol>



## Our Khung BangKachao Project

### Overview of Operating Activities / Management

The Company has joined as a network partner to support the OUR Khung BangKachao project of the Chai Pattana Foundation, along with more than 34 other public and private agencies, to jointly drive the development of the Khung BangKachao area, following the royal initiatives and royal aspirations of His Majesty King Bhumibol Adulyadej and Her Royal Highness Princess Maha Chakri Sirindhorn, and the operational guidelines of the Chai Pattana Foundation in conserving and developing Khung BangKachao to be a rich green area, as well as improving the lifestyle and economic growth of the local people under a total of 7 joint goals. The Company participates as a working group and supports the operation of 3 joint areas/goals, including the development / expansion of green areas, sustainable tourism, and the development of youth, education, and culture.

Target	Strategy	Operating Result
<p>Promote and develop green areas/increase green areas within the Khung BangKachao area towards environmentally friendly (Green Growth) sustainable growth</p>	<ol style="list-style-type: none"> <li>1. Increase green areas through joint development of royal property areas under the care of the Royal Forest Department, an area of 400 rai, 95 plots (including the project for phase 1 operations); specific area for Bangchak: 19.71 rai, 11 plots</li> <li>2. Select tree species to be planted based on suitability, benefits, and compatibility with the area</li> <li>3. Create cooperation and participation with network partners both inside and outside the area, such as the Bang Nam Phueng Sub-district Administrative Organization, Chai Pattana Foundation, Sri Nakhon Khuean Khan Park, the Royal Forest Department, etc</li> <li>4. Encourage customers and employees to participate in the project/community in planting forests/trees through the Company's channels, such as Bangchak card members, bicycle club, and the Company's CSR activities, etc</li> </ol>	<ol style="list-style-type: none"> <li>1. Plant forests/trees for a total of 1,570 trees in an area of 19.71 rai, 11 plots (100%), by planting native tree species mixed with other suitable species, such as Lamphu, Kong Kang, Kluk, Ruang Phung, Takhian, Payom, Thong Lang, Makhamong, etc</li> <li>2. Organize activities for executives and employees to plant trees for 4 times, with 435 participating executives and employees</li> <li>3. Support the improvement and development of learning points and various signs under the project's operations for the responsible area, such as Rong Khwai Forest Park and other related forest parks/gardens/plots</li> <li>4. Support the improvement, development, and care of the responsible forest parks/gardens/plots by hiring local personnel, creating jobs which generate them over THB 200,000 of income</li> </ol>





# Environmental Cost Accounting

The environmental cost in 2023 has decreased by THB 33,456.71 million from 2022 or 17.71%. This was mainly from the decrease in crude oil price from the previous year by 15%, reflecting the reduction in material costs of product outputs by THB 33,437.69 million. In 2023, the Company has run the refinery unit totaling 119.11 thousand barrels per day, decreasing from the previous year in 2022. This caused a reduction in material costs of non-product outputs by THB 24.60 million, relating to the reduction of excessive chemical costs by THB 18.91 million. Moreover, the Company has a lower prevention and other environmental management costs by

THB 1.93 million and reduction of costs in monitoring and measurements by THB 0.77 million. Nonetheless, the Company spent THB 7.52 million more in pollution control equipment due to an increase in waste management fee of THB 6.35 million as the conditions in the production process changed and the JET oil production increase, generating more waste.

The benefit from by-product and waste recycling decreased by THB 23.93 million or 73.94% as a result of less ability to sell liquid sulfur by THB 30.50 million and The THB 1.87 million increase from selling iron and aluminum scraps.

(Unit: Million THB)

Environmental Cost Accounting (EN 31)	2021	2022	2023
<b>Material costs of product outputs</b>			
Crude Feed	81,445.69	169,495.13	<b>138,435.05</b>
Ethanol	5,980.37	7,263.95	<b>6,213.60</b>
Bio-Diesel (B100)	0.00	0.00	<b>0.00</b>
Bio-Diesel (B100)-Premium	0.00	0.00	<b>0.00</b>
Bio-Diesel (B100) HI PURE TYPE2	8,371.91	8,049.93	<b>7,347.12</b>
Used cooking oil	0.01	31.18	<b>101.25</b>
Chemicals	160.35	173.75	<b>180.50</b>
Process water	27.65	24.24	<b>28.34</b>
Process energy	1,618.08	3,062.46	<b>2,357.10</b>

<b>Environmental Cost Accounting (EN 31)</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>Material costs of non-product outputs</b>			
SLOP OIL	58.07	27.30	<b>21.51</b>
Effluent	11.61	12.24	<b>12.34</b>
Excess chemicals from neutralizing pond	0.20	20.68	<b>1.77</b>
<b>Waste and emission control costs</b>			
Environmental equipment maintenance	23.03	0.93	<b>1.48</b>
Depreciation of pollution control equipment	500.07	686.69	<b>686.47</b>
Effluent treatment	6.12	5.69	<b>6.52</b>
Waste disposal	5.46	4.95	<b>11.30</b>
<b>Prevention and other environmental management costs</b>			
Monitoring and measurement	7.70	9.32	<b>8.56</b>
Depreciation of waste storage area	0.05	0.02	<b>0.02</b>
Management system operation	1.58	1.39	<b>0.22</b>
Environmental equipment maintenance	-	-	<b>-</b>
<b>Benefits of by-products and recycling</b>			
Liquid sulfur	(17.16)	(30.50)	<b>(5.14)</b>
Iron and aluminum scrap	(3.12)	(1.87)	<b>(3.29)</b>



## Social Dimension

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# Occupational Health and Safety



Safety, security, and occupational health are critical issues in the petroleum industry due to the potential for accidents in operations, production processes, transportation, and distribution, which can have diverse impacts on stakeholders. These include injuries, fatalities, and property loss for workers and surrounding communities, business disruptions from production halts to address incidents and aid affected parties, and environmental impacts such as pollution leaks. Therefore, the Company has established policies regarding safety, security, and occupational health to ensure that employees and contractors have duties and responsibilities for their own safety and that of their colleagues, in compliance with local laws and international standards such as ISO 45001. The Company has operated in line with Process Safety Management (PSM) under the Safety, Security, Health, Environment, and Energy (SHEE) management structure to formulate policy, review, recommend, support on resources, and appoint committees to promote continuous and sustainable improvement in SHEE management systems (Disclosure 403-1). The safety management system includes identifying work-related hazards, assessing risks, and investigating and improving incidents with potential risks. The Company mandates internal audits, such as safety inspections and meetings to

report audit findings and monitor corrective actions by the Safety Committee at least once a month as required by law. External audits, such as ISO 45001 standard assessments, are conducted to ensure comprehensive coverage of safety management systems and monitoring results for all employees and contractors (100%) working at Bangchak Refinery and Oil Depot at Sukhumvit 64 and the head office.

## Targets

- Overall illness and injury frequency rate (OIFR) from work-related injuries equals zero.
- Lost time injury frequency rate (LTIFR) from work-related injuries equals zero.
- Fatality rates from work-related injuries are all zero.
- There are no significant oil or chemical spills into the environment.
- Tier-1 incidents involving the release of flammable or hazardous substances from primary containers or production processes, as per API 754 requirements, equals zero.

## Guidelines for Managing Safety and Occupational Health

The Company is dedicated to continuously improving and enhancing the Safety, Health, Environment, and Energy (SHEE) management system in accordance with ISO 45001 standards, including Process Safety Management (PSM). This ensures that safety operations align with objectives and promotes safety activities both during and outside of working hours (“Safety 24/7”) to instill safety consciousness, knowledge, understanding, and safe practices among employees at all levels and contractors.

Activities to promote safety culture in operations include the following:

- Promoting safety culture transformation initiatives, such as management line walks in work areas, prioritizing safety and demonstrating concern for employee work, along with conducting Field Risk Assessments (FRA) to enable employees to proactively identify hazards and risks for prevention.
- Conducting monthly meetings with the safety officers of contracted companies, and performing joint workplace inspections with contractors on a weekly basis.
- Presenting the Contractor Safety Management Recognition award to contractors who adhere correctly to procedures and serve as exemplary models to their colleagues.
- Setting safety goals and plans collaboratively between the Company and contracted companies through Contractor Safety Management Workshops.
- Celebrating achieving safety hours without any accidents resulting in work stoppages for both employees and contractors.
- Safety promotion activities facilitated by the Safety Committee, involving meetings and idea exchanges between management and employees.

Activities to promote safety outside the work area include the following:

- Advocating for safe driving practices, employees are encouraged to wear safety helmets every time they ride motorcycles and fasten seat belts before embarking on a journey.

Through continuous safety operations and activities, the Company achieved a total of 8,000,000 safe work hours by its employees without any work stoppages due to accidents or medical treatment incidents. Additionally, the Company successfully reached its target of 750,000 contractor-safe work hours without work stoppages due to accidents. Moreover, in 2023, the Company was honored with the prestigious Outstanding Model Business Establishment Award for Safety, Occupational Health, and Environmental Conditions in the Workplace at the national level for the 7<sup>th</sup> consecutive year from the Ministry of Labor.

### Work-related Hazards Identification, Risk Assessment, and Incident Investigation [Disclosure 403-2]

The Company has procedures for identifying hazards, assessing risks, and implementing corrective actions, utilizing methods such as “What if” and HAZOP. These procedures cover the activities of both employees and contractors and include the following key processes:

1. Hazard identification, risk assessment, and corrective action procedures are implemented to reduce and control risks to an acceptable level, with a review conducted at least once a year or when there are changes in work procedures.
2. Job Safety Analysis (JSA) processes are in place for non-routine tasks to identify hazards, assess risks, and provide control measures, integrated with the Online Work Permit system.
3. Safety communication is conducted through safety talks before commencing work, and safety compliance is verified against work permit requirements.
4. Risk assessments are conducted by trained engineers or supervisors who have undergone risk assessment training and assessment reports and control measures are then submitted for review and approval by management.

The results of the risk assessment review in 2023 revealed that word-related hazards posing a high risk of causing high consequence injuries include fire hazards, chemical spills, and falling or impact hazards. Therefore, appropriate hazard prevention and control measures based on the hierarchy of

controls was implemented, such as safe process design, periodic risk assessment reviews, safety management system audits, and provision of personal protective equipment for employees and contractors.

The Company encourages employees to report unsafe acts and conditions through safety observation reports, aiming to prevent incidents before they occur. Therefore, employees and contractors are encouraged to observe and report any unsafe work practices or conditions that may pose risks to themselves or others. Moreover, workers have the authority to cease work and report to their supervisors and area owners if they identify unsafe conditions.

In addition, key performance indicators (KPIs) have been established with incentives provided to reporters based on the number of safety observation reports submitted. This is considered beneficial in preventing incidents and managing risks, thereby reducing the likelihood of accidents. Furthermore, there are procedures in place to inspect and rectify safety issues before authorizing work or conducting activities. Moreover, employees are encouraged to identify hazards and risks in the workplace through various reporting channels, such as the Field Risk Assessment (FRA), Safe Work Practice (SWP), Contractor Safety Management, Operation Audit Team (OAT), PSM Daily Audit, and SHEE Committee which plans are devised for collaborative inspections and providing guidance to workers to enhance their awareness and understanding of potential hazards, leading to proactive prevention measures. Furthermore, the Company has procured personal protective equipment that meets standards, allowing employees easy and rapid access through the warehouse system and automated dispensers.

## Work-related risk and incident investigation process (Disclosure 403-2)

The reporting and investigation of incidents with associated risks and accidents are central to the Company's safety management system in identifying the true causes and establishing controls and preventive measures to prevent recurrence. Incident reporting and abnormal event recording are systematically carried out, covering incidents occurring

in the production process and near-miss events. When such events occur, individuals involved or those who witness them must report to the area owner and relevant personnel within 24 hours. Subsequently, an incident investigation team is appointed to determine the root causes through tools such as Why Tree Analysis and establish measures to prevent recurrence, including recommendations for improvement (Opportunity for Improvement - OFI). The progress of corrective actions is monitored, adjusted based on investigation results, and lessons learned are compiled into learning materials and disseminated to employees and contractors through various Company channels.

## Work-related health services (Disclosure 403-3)

The Company employs a proactive approach to occupational health by conducting Health Risk Assessments (HRAs) covering all areas of the refinery which is aimed at identifying health risks and implementing control measures. Regular monitoring and environmental assessments are conducted in the workplace, including measurements for light, noise, heat, and chemical substances, to ensure the safety of workers' health. Any necessary adjustments to work areas and/or procedures are made, and follow-up actions are taken if safety standards are exceeded during assessments. For office spaces, air quality is monitored in accordance with the recommendations of Singapore Standard 554 : 2016 in which parameters measured include temperature, relative humidity, wind speed, carbon dioxide (CO<sub>2</sub>) levels, carbon monoxide (CO) levels, particulate matter smaller than 10 micrometers, particulate matter smaller than 2.5 micrometers (PM 2.5), total volatile organic compounds (VOCs), and formaldehyde. Additionally, airborne total bacteria count and total fungi count are also monitored. Results from the monitoring activities have consistently met standards from 2018 to 2023.

Furthermore, the Company provides specialized occupational health and medical personnel who are responsible for controlling and advising employees and contractors on occupational health issues. They monitor the health of employees and contractors, including:

- Health examinations are conducted for employees when they begin work, during their work, and upon leaving.
- Employees undergo annual health check-ups, including

general health assessments and assessments for occupational health risk factors, conducted by Company occupational physicians and health professionals. The health check-up protocols are tailored to assess specific occupational risk factors and the results of these health assessments are analyzed internally and externally. If an employee's health check-up reveals abnormalities, they are required to consult with a physician for continuous health monitoring and care. Additionally, there are additional health check-ups based on age-related risks, including screenings for testicular cancer, liver cancer, and gastrointestinal cancers. These health assessments cover lifestyle-related diseases, and employees are encouraged to continuously monitor their health.

- The Company conducts medical emergency response drills with its in-house emergency response team and hospital emergency response teams under contract which aim to foster agility in coordinating efforts and enhance the efficiency of emergency assistance.
- The Company has hired a specialist occupational health physician to assess and improve both the general health screening program and the risk factor-based health assessments. Additionally, the Company has prioritized employee health by establishing an audiometric testing room for annual health check-ups.
- The Company mandates that the contracted Company conducts health screenings for all contracted employees, including monitoring and tracking the results of the health assessments. If any abnormalities are detected during the health screenings, the Company ensures that the employees receive counseling from a physician. Additionally, the results of the health assessments are provided to relevant supervisors and safety representatives.

The Company considers the health data of employees and contractors as personal data under the Personal Data Protection Act. The Company's objective in using this data is solely to promote health and prevent workplace hazards when the health of employees and contractors is deemed unfit for work. Employees and contractors have the right to lodge complaints if their health data is inaccurately used through various channels such as labor unions, the Company's whistleblower channel, and the hotline 1651.

## Participation, Consultation, and Communication with Employees on Occupational Health and Safety (Disclosure 403-4)

The Company appoints a Safety, Health, and Environment Committee in accordance with the law to ensure compliance with safety, health, and environmental principles in the workplace and to continuously improve. The committee comprises operational-level representatives elected separately by job categories, constituting no less than 50% of the total committee members. Regular meetings are held at least once a month to disseminate information, track progress, and discuss future plans. Additionally, high-level management conducts periodic reviews of safety performance.

The Company facilitates communication and encourages employee and contractor involvement in occupational health and safety matters through various activities, including SHEE Excellence Day, communication through outlook, bulletin boards, and a safety radio channel broadcasting news, knowledge, warnings, and Life-Saving Rules Promotion activities. Moreover, the Company simplifies communication by using easily understandable formats for conveying IOGP's life-saving rules.

## Occupational Health and Safety Training (Disclosure 403-5)

The Company conducts safety, health, and emergency response training for all employees and contractors before they begin their duties, tailored to their job positions or the risks associated with their work. Training plans are developed, sessions are organized, outcomes are assessed, and records of training are maintained to enhance knowledge, skills, and understanding of potential hazards, accident prevention methods, and hazard control measures while performing tasks safely.

The Company conducts training and issues electronic contractor cards (Express Safety Pass) by recording contractor data for site access and submitting documents through an electronic system. Additionally, contractors can access safety videos online for convenience and to reduce the time required for training.

## Employee and Contractor Health Promotion (Disclosure 403-6)

The Company promotes employee and contractor health beyond work-related issues through various means such as:

- The Company provides daily nursing and medical services at its onsite medical facility, services include basic healthcare and emergency treatment at no cost to employees and contractors.
- The Company offers annual health check-ups and provides vaccinations for influenza and COVID-19 to its employees.
- The Company has a health promotion program aimed at preventing non-communicable diseases (NCDs), including monthly physical activity initiatives such as step-counting challenges, running events, and simple cardio exercises. Additionally, there are e-Sport competitions like dancing and boxing, nutritional activities are also organized to promote vitamin-rich diets, such as campaigns advocating for sufficient vitamin intake and encouraging the consumption of vegetables to reduce sugar intake.
- The Company organizes hearing conservation activities to promote awareness among employees about the importance of hearing health and prevention measures both in the workplace and in daily life.

### Performance

In managing both employee and contractor safety, the Company tracks and measures performance through key indicators including the Lost Time Injury Frequency Rate (LTIFR), Total Recordable Injury Rate (TRIR), and the rate of high-consequence work-related injuries among both employees and contractors. Operational findings are as follows:

Total Injury Rate of Employees	2021		2022		2023	
	Male	Female	Male	Female	Male	Female
Lost Time Injury Frequency Rate (LTIFR) Employees	0	0	0	0	0	0
Total Recordable Injury Rate (TRIR) Employees	0	0	1.38	0	0	0
High-consequence work-related injuries rate* Employees	0	0	0	0	0	0

\* Injuries resulting in an inability to fully recover within a period of 6 months due to work-related activities.

The Company has implemented a Contractor Safety Management system to ensure that contractors adhere strictly and consistently to safety regulations, including conducting incident investigations. The primary nature of work-related injuries in 2023 mainly stemmed from impact materials and pinch tools. Lessons learned have been incorporated into work practices, with controls put in place to prevent recurrence. Moreover, short-term and long-term improvement plans have been devised, with progress monitored and communicated to stakeholders. This is complemented by activities promoting personal safety to foster a sustainable safety culture. Additionally, the Company has implemented safety measures and initiatives in collaboration with contractors, resulting in zero work stoppages due to accidents (LTIFR = 0) this year.



Total Injury Rate of Contractors	2021		2022		2023	
	Male	Female	Male	Female	Male	Female
Lost Time Injury Frequency Rate (LTIFR) Contractors	0.45	0	1.43	0	0	0
Total Recordable Injuries Rate (TRIR) Contractors	1.79	0	1.43	0	2.08	0
High-consequence work-related injuries case* Contractors	0	0	1	0	0	0

\* Injuries resulting in an inability to fully recover within a period of 6 months due to work-related activities.

## Process Safety Management

Bangchak operated safety management in accordance with the Process Safety Management (PSM) system in its manufacturing processes, established a PSM Governance Committee (PSM GC) since 2015 and set safety values, commonly referred to as the “3Es” which stand for:

- Everyone goes home safely every day
- Environment and Asset are protected
- Efficient and Reliable Operation

### Continuous projects include:

- The Felt Leadership (FL) initiative focuses on demonstrating and embodying leadership in safety.
- The Field Risk Assessment (FRA) initiative aims to enhance workers’ awareness and understanding of potential hazards, leading to proactive prevention measures.
- The establishment of safety standards for work procedures includes the Lock Out Tag Out (LOTO), Line Break (LB), and Hot Work (HW) standards. Additionally, standards for confined space work and additional drilling procedures were developed in 2022.
- Process Safety Information (PSI) involves gathering fundamental knowledge about the manufacturing processes to identify and understand associated hazards.
- Process Hazard Analysis (PHA) is a tool used to analyze hazards within manufacturing processes and identify appropriate prevention methods.
- Incident Investigation (II) involves analyzing the root causes of incidents to determine systemic prevention measures.
- The Management of Change Technology-Facilities (MOC-T,F) process involves managing changes in technology and facilities within manufacturing processes

to ensure safety through an efficient management system. This includes assessment and review of risks by relevant experts, as well as effective communication with workers to mitigate risks associated with changes.

- The Pre-Startup Safety Review (PSSR) involves inspecting equipment and related operations associated with manufacturing processes after shutdowns or major maintenance to ensure safety before resuming production.
- Emergency Planning & Response (EPR) involves training and developing skills in preparedness and response to emergencies, as well as regularly conducting emergency drills at various levels. In 2023, surprise drills were organized to practice emergency response plans at all levels.
- Management of Change Personnel (MOC-P)
- Training and Performance (T&P) includes developing a qualified person to authorize high-risk work tasks.
- Contractor Safety Management (CSM) involves selecting contracting companies, controlling work through site audits, and conducting assessments upon contract completion.
- Mechanical Integrity (MI) involves inspecting the effectiveness and controlling the risks of equipment throughout its service life, including maintenance and upkeep of equipment and tools.
- Quality Assurance (QA) involves verifying that equipment and machinery in the manufacturing process are installed according to design specifications and are ready for use.
- The integration of digital systems into manufacturing process safety management involves the establishment of data centers, which enhances operational efficiency, and facilitates data analysis to develop safety planning strategies.

## 2023 Performance

In 2023, the Company successfully achieved its safety objectives within the manufacturing process as outlined, with no incidents of significant leaks of hazardous substances from primary containment vessels or manufacturing processes resulting in severe consequences (Tier1 and 2) as per API 754 requirements.

## Oil Spill Management and Prevention

The Company acknowledges the impact of leaks of raw materials and products in the petroleum refining industry, which can have economic, social, and environmental implications. These include the financial cost of damage to raw materials and products, the impact on the health and safety of employees and the surrounding community, as well as the contamination of soil and water sources in the affected area. Therefore, the Company is committed to reducing the risk of leaks and implementing effective emergency response measures covering the entire value chain of the Company, from the transportation of crude oil, refining, and transportation of petroleum products to storage in oil depots and gas stations as follows:

- Selecting oil transportation vessels that have inspection and assessment systems meeting the requirements and standards equivalent to those of the oil industry.
- Implementing safety measures for maritime transportation begin with the vessel receiving process where tug boats are utilized to tow ships in and out of the dock in line with the dock, mooring lines are secured to the vessel according to standards before oil transfer operations and boom barriers surround the vessel to prevent oil spills into the water, containing the oil within a limited area for rapid containment and recovery. Moreover, hoses are securely connected to the vessel, and constant vigilance is maintained during pumping operations.
- The Company has a comprehensive plan for preventing and mitigating oil spills, including regular emergency response drills conducted annually. Additionally, opportunities are provided for the community to participate in observation activities. This year,

the Company supported the Department of Port Authority, Ministry of Transport, in organizing the 12<sup>th</sup> annual training exercise for oil and chemical spill response. This exercise involved collaboration among multiple agencies with roles in spill response planning, operations, data support, and providing training facilities. The Company also contributed the “Sritarak 8” vessel stationed at Bangchak Pier along the Chao Phraya River for this exercise.

- Emergency response equipment and training in oil spill removal are provided, along with opportunities for the community to participate in observation activities.
- The Company has developed the capabilities of its employees to respond to incidents by participating in training and practical exercises alongside relevant government agencies and companies within the oil industry on a continuous basis.
- The Company has continuously developed and improved safety technology for equipment, systems, and tools in line with the guidelines set by the Oil Company International Marine Forum (OCIMF) which includes upgrading fire suppression systems at the docks to modern standards and installing additional closed-circuit camera systems.
- The Company has designed oil tanks and pipelines and installed equipment according to international standards, including Automatic Tank Gauge (ATG) systems and overflow alarm systems to measure oil levels and prevent tank overflows. Additionally, areas are designed for oil containment in the event of spills, such as containment dikes and gas detector systems are also installed for hazardous gas monitoring. Furthermore, preventive measures and monitoring are implemented to guard against emergencies during operations. These include Closed-Circuit Television (CCTV) surveillance, shift area patrols, and monitoring of oil transportation and storage through stock and oil transfer monitoring systems.
- Operational procedures and training programs are provided for relevant personnel involved in the process.
- Systems, plans, and equipment inspections (PM) are conducted at appropriate intervals.
- Risk assessments and evaluations are conducted to identify potential points of leakage (LOPC) in each area, along with control and prevention measures and continuous monitoring of the effectiveness of these

measures is performed. Moreover, safety checks in the manufacturing process are conducted, and analysis is carried out to propose corrective and preventive measures to prevent recurrence.

- The vessel “Sritarak 8” stationed at the Bangchak refinery is equipped to store up to 10,000 liters of oil residue collected from the side collecting boom system alongside the vessel, complemented by a belt skimmer kit onboard. It is equipped with fire suppression systems to enhance safety during emergency situations and features an onboard meeting room for facilitating operational planning by employees. In addition to managing oil spill incidents within the Chao Phraya River area, which falls under the refinery’s jurisdiction, it also supports oil residue collection efforts for government agencies and environmental conservation associations such as the Oil Industry Environmental Safety Group Association (IESG), of which Bangchak is a member. Furthermore, it extends support for disaster relief efforts or other requests for assistance. In 2023, it participated

in oil spill mitigation missions in the offshore single point mooring (SPM) area in Rayong province, where personnel and cleanup operators collaborated in executing the tasks.

- The Company has conducted EMS Hazmat training in collaboration with the Thailand Rescue group for external individuals such as medical personnel in the EMS1669 system, rescue teams, and emergency response teams (ERT) in industries interested in the course. The Company regularly reports the results of its operations to the task force monitoring and continuously evaluates risks to report to the organizational risk management committee every month which ensures confidence that the Company is committed to quality and safety management. Through the Company’s efforts in preventing and managing oil and chemical spills in operational areas, there have been no significant oil or chemical leaks, fostering community trust in safety and environmental quality near the refinery and port facilities.

<b>Oil and Chemical Leakages</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
- Number of significant oil and chemical spills exceeding 100 barrels per time (Case)	0	0	0	0	0
- Amount of oil and chemical spills exceeding 100 barrels per time (Barrels)	0	0	0	0	0
- Number of significant oil and chemical spills exceeding 1 barrels per time (Case)	2	3	0	0	0
- Total amount of oil and chemical spills exceeding 1 barrel per time (Barrels)	4	11	0	0	0
- Data coverage (as percentage of: Annual Production (MMBOE))	100	100	100	100	100

# Human Rights

## Human Rights Performance

Bangchak recognizes the importance of systematic human rights and environmental management in its business operations. The company conducts its business on the basis of respect for the rights of stakeholders, including LGBTIQ+ groups, and acknowledges differences in thought and other social equalities, such as religion, skin color, and ethnicity. The Company also respects vulnerable groups, such as people with disabilities, children, and indigenous people, and the environment. These principles are applied to all business operations, with a strong commitment to preventing risks and impacts that may arise from human rights and environmental violations of stakeholders. To ensure business operations that respect human rights

and the environment, the Company has a policy on business responsibility for respecting human rights and the environment, while strictly adheres to international human rights organizations, including the United Nations Global Compact (UNGC), the Universal Declaration of Human Rights (UDHR), the United Nations Guiding Principles on Business and Human Rights (UNGPR), and the Women's Empowerment Principles (WEPs). These principles serve as a framework for the Board of Directors, executives, and employees at all levels to follow.

### Awards

#### Award for organization that promotes human rights in 2023.

The Company received one award which is: The Outstanding Role Model Organization Human Rights Awards 2023 (the highest level) in the large-scale business organization category from the Minister of Justice.



More information available in



Award for organization that promotes human rights in 2023



## Procedure Process

### Policy Commitment

- Develop a policy on business responsibility for respecting human rights and the environment throughout the supply chain to guide the board of directors and employees.
- Policy Announcement through: BCP Website, Developed in accordance with
  - UNGC
  - UDHR
  - WEPs
  - ISO 26000
  - UNGP
  - Reviewed annually

### Human Rights Impact Self Assessment

- Conduct an impact assessment at every stage of the business operation that affects human rights.
- Review the process to improve and minimize the chances of violations.

Remark: Review annually

### Access to Remedy

- Establish a grievance mechanism for when negative human rights impacts occur.
- Use a participatory process with stakeholders in cases where remediation is required.

Remark: Assess annually

### Human Rights Due Diligence

- Check and assess human rights in all aspects

Announce through: BCP Website

### Performance Tracking & Reporting

- Monitor operating performance
- Report management and disclose to the stakeholders

Announce through: BCP Website



More information available in



Business Responsibilities  
on Human Rights Policy



More information available in



Human Rights Assessment  
Checklist

## 2023 Key Operation

- 1) Bangchak conducted a comprehensive annual human rights assessment following the guidelines of the Human Rights Commission. The assessment covers eight risk areas: Construction and expansion of facilities, employees, contractors, communities and society, environment around the operating areas, customers and consumers, business relationships with other organizations, migrant labor, LGBTIQ+ employees and temporary workers covering all targets in risks (children, women, locals, and disabled persons) within the organization covering Refinery and Oil Trading Business Group, Marketing Business Group, and business partners along the supply chain with the report of human rights activities in the Sustainability Report.
- 2) The Company assessed the supplier code of conduct regarding human rights, labor practices, safety, occupational health, and environment. It was promoted by establishing a Supplier Code of Conduct and by supporting the practices to solve potential issues generated from human rights violation from the business partners, announced on [www.bangchak.co.th/storage/document/sustainability/2023/bcp-supplier-code-conduct-en.pdf](http://www.bangchak.co.th/storage/document/sustainability/2023/bcp-supplier-code-conduct-en.pdf)
- 3) The Company raised awareness and fostered responsibilities regarding human rights by holding a seminar within and outside the organization, with activities as follows:
  - Communicating human rights policy of the organization to all the security personnel (100%).
  - Communicating and raising awareness regarding the sexual assault and harassment to employees of Bangchak group at all levels via Intranet, BCP- KMS system and to general interested persons via Social Dimension | Bangchak Corporation.
  - Participating in human rights seminar held by Stock Exchange of Thailand, UNGC, and UN Women.
- 4) Shared perspectives on driving organizations with the power of equality in International Women's Day #EmbraceEquity held by Citi Thailand Women's Network (Citibank)
- 5) The Company has developed a Human Rights Due Diligence (HRDD) Manual to define operational guidelines and prevent/mitigate human rights violations - including impacts on the environment and communities - that occur within the Company's activities and supply chain by assigning direct responsibility to specific departments, establishing a remediation mechanism in line with Company policy, and allocating an appropriate budget and measures for compensation in the event of human rights violations.
- 6) The Company adhered to the National Action Plan on Business and Human Rights (NAP Implementation), which includes initiatives such as:
  - Supporting the improved quality of life for people with disabilities, creating job security, reducing social inequality, and allowing underprivileged individuals to demonstrate their potential and abilities effectively by providing opportunities for people with disabilities to become permanent employees.
  - Implementing labor projects such as the "Breastfeeding Promotion Project," which provides dedicated lactation rooms to ensure appropriate facilities for the ongoing wellbeing of mothers in the workplace.
- 7) Reviewing processes and impact mitigation measures.
- 8) Reviewing grievance management and whistleblowing measures.



## Risk Topics



### Employees

1. Equality in the recruitment process, employment, compensation, and career advancement opportunities.
2. Equality in treatment in the workplace (e.g., words, actions) towards all genders, ages, religions, and educational backgrounds, etc.
3. Equality in employee rights and basic benefits.
4. Equality in access to skills training, including safety knowledge and understanding.
5. Freedom of collective action and negotiate related to work conditions.
6. Sexual violence, harassment, and inappropriate touching.
7. A safe and healthy workplace and working environment.
8. Whistleblower protection and confidentiality of victims.



### Contractors (Partners who provide Services/Labor Providers)

1. Equality in the recruitment process, temporary contractors, migrant workers, employment conditions, wages, and benefits not lower than the legal requirements.
2. Equality in treatment in the workplace (e.g., words, actions) towards all genders, ages, religions, and educational backgrounds, etc.
3. Equality in access to safety training and understanding.
4. Freedom of collective action and negotiations related to work conditions. And equal opportunities to provide inputs to improve collaboration.
5. Sexual violence and harassment, covering work on and off-site as assigned.
6. A safe and healthy workplace and working environment.
7. Whistleblower protection and confidentiality of victims.



### Suppliers (Raw Materials/Product Suppliers)

1. The production process of the product uses hazardous materials or production factors from areas with severe rights violations or is considered unsustainable.
2. The use of child labor, forced female labor, or illegal labor in the production of goods.
3. Employees, contractors, and migrant workers of partners are not treated in accordance with labor, safety, and environmental laws.
4. Equality of partner employees in receiving safety training and understanding (including receiving appropriate PPE according to the nature of the work).
5. A safe and healthy workplace and working environment.
6. Whistleblower protection and confidentiality of victims.
7. Non-discrimination against organizations with business relationships.





## Communities

1. The acquisition and management of land for existing businesses and future investments take into account:
  - Community rights to access natural resources and water sources.
  - Community cultural impacts.
2. The process of surveying the needs/expectations of the community and society around the operating area and a process for continuously listening to the voices of the community.
3. Community/community care activities are comprehensive and equitable, especially for women, people with disabilities, and other disadvantaged groups in the community.
4. Management throughout the supply chain to ensure no impact on the community in terms of environment, society, and economy.
5. Ensure systematic communication channel with communities, including during emergency situations.
6. Ensure channels for receiving community complaints and protection of the confidentiality of whistleblowers.



## Customers

1. Establish criteria for treating customers equally, such as verbal and nonverbal communication, and avoiding physical contact or other methods.
2. Stablish process to prevent the following issues:
  - Sexual harassment or other serious incidents where customers are harassed.
  - Protection of customer personal data (including collection, access, and use).
  - Prevention of violation of children's and women's rights through public relations advertisements and media or activities.

### Human Rights Risk Assessment

	Employees	Partners (Contractors & Tier 1 Suppliers)	Subsidiaries
Percentage of Risk Assessed from the Recent 3 Years	100	100	100
Percentage of Risks Identified	0	0	0
Percentage of Identified Risk with Mitigation Measures	0	0	0



## Review of the Process and Mitigation Measures (Remedy)



### Risk Issue: Safety management that affects both rail and road transportation.

#### Details:

- Possibility of community impact from accidents/oil spills during both rail and road transportation.

#### Mitigation Measures:

- Monitor the delivery plan, receiving equipment, and PM equipment maintenance plan.
- Review the contractor's work procedures, review the monthly transportation plan and performance together (Monthly KPI meeting).
- Review the readiness of the emergency response team and inspect the readiness of emergency response equipment and rehearse emergency plans for various situations between the transportation contractors and the Company.
- Manage and control the number of vehicles in accordance with the contract.
- Survey the expectations of oil supplier partners.

#### Receive complaints through:

- Hotline: 1651
- Website: [www.bangchak.co.th/th/cg/whistleblowing-form](http://www.bangchak.co.th/th/cg/whistleblowing-form)
- Social: [web.facebook.com/Bangchak/](https://web.facebook.com/Bangchak/)



### Risk Issue: Personal data of the community is disclosed to the public through various channels or media from complaints filed with the Company.

#### Details:

- Possibility that the complaint process/channels from the community, are not complete, resulting in the leakage of data from complainants from the community.

#### Mitigation Measures:

- Follow the complaint process in case that there is an impact to the community.
- Develop a community relations manual that includes teaching, work transfer (On The Job Training), community relations work, and complaint handling of the Company to ensure that the work is efficient and effective in all aspects, including confidentiality and personal data.
- Follow the Company's internal data management and control manual (by the Company's internal data management working group), especially in terms of preventing data and personal data from leaking or being violated and disseminated. It must be clear, up-to-date, consistent with changes in the environment and technology, and in line with the Personal Data Protection Act B.E. 2562: PDPA.
- Design technology to be used in the Company's complaint process by designing a clear, tight, efficient, and effective process, hierarchy, and data confidentiality.
- Develop a system and database for storing complaint data, complainants, and other related information that is efficient, effective, safe, fast, easy to use, and certified and accepted according to international standards.
- Receive complaints, suggestions, and establish a grievance mechanism in case the community is affected by the Company's operations. Protect complainants and keep their data confidential.

#### Receive complaints through:

- Hotline: 1651
- Social: [web.facebook.com/Bangchak/](https://web.facebook.com/Bangchak/)
- Telephone No: 0 2335 4102-5 during 08:00-17:00
- Telephone No: 0 2355 4051 during 17:01-07:59



## Risk Issue: Customer service and safety at the service stations.

### Details:

- Possibility that customers will leave cigarette butts at service stations, which could lead to negative safety impacts.

### Mitigation Measures:

- Put up signs and raise awareness of safety at service stations.
- Implement measures to inspect critical areas and equipment and increase the installation of security systems to cover the entire service station area.
- Conduct basic fire drills for frontline service personnel and related personnel at least once a year.
- Specify a gathering point for customers to be aware of and to facilitate the disabled for safety.
- Have a process for screening business partners and allies according to legal requirements.
- Guarantee damage from the Company's operations to customers when proven.
- Personal data protection according to international standards for cyber security management ISO/IES 27001 : 2013 ISO/IES 27032 : 2012 and NIST Cyber Security Framework.

### Receive customer complaints and investigate, correct, and follow up on complaints through:

- Hotline: 1651
- Social: [web.facebook.com/Bangchak/](https://www.facebook.com/Bangchak/), [www.facebook.com/bangchakmemberclub](https://www.facebook.com/bangchakmemberclub)
- Telephone No.: 0 2335 4410



## Risk Issue: Land acquisition and land management do not violate the law and do not affect the community's way of life, both in terms of resources and culture.

### Details:

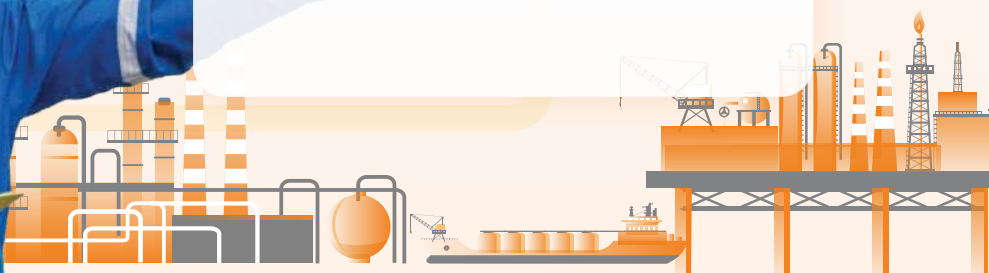
- Possibility of a lack of measures to select areas for the development of service stations.

### Mitigation Measures:

- Comply with all relevant laws that cover the practices of company-owned, company-operated service stations (CO-CO) in Thailand, such as
  - Building Control Act, Town Planning Act, Highways Act
  - Ministerial Regulations, Announcements, and Local Ordinances
  - Ministerial Regulations on The Fuel Station
- Survey the expectations of people and communities around the project.
- Communicate the guidelines to employees via Outlook and inform them of the channels for accessing the guidelines and monitoring through the "Human Rights Monitoring and Inspection Checklist" in the Land Management topic, which found that the operation is in line with the guidelines.
- Organize training on the guidelines for selecting areas for the development of service stations for employees.
- Report to the management through monthly meetings.
- Personal data protection according to international standards for cyber security management ISO/IES 27001 : 2013 ISO/IES 27032 : 2012 and NIST Cyber Security Framework.

### Receive customer complaints and investigate, correct, and follow up on complaints through:

- Hotline: 1651
- Social: [web.facebook.com/Bangchak/](https://www.facebook.com/Bangchak/), [www.facebook.com/bangchakmemberclub](https://www.facebook.com/bangchakmemberclub)
- Telephone No: 0 2335 4410





### Risk Issue: Employees, contractors, and migrant workers of partners are not treated in accordance with the requirements of labor, safety, and environmental laws.

#### Details:

- Possibility that partner companies do not comply with safety and occupational health laws, including the management of wages, compensation, overtime pay, benefits, and welfare for employees, contractors, and migrant workers in accordance with labor laws.

#### Mitigation Measures:

- Require partners to comply with safety and occupational health laws, including the management of wages, compensation, overtime pay, benefits, and welfare for employees, contractors, and migrant workers in accordance with labor laws. This covers the following issues:
- There should be safety measures in place, including the management of wages, compensation, overtime pay, benefits, and welfare for employees, contractors, and migrant workers in accordance with labor laws or the certification of Thai labor standards, social responsibility of Thai businesses, TLS 8001.
- Communicate to partners at the operational level the results that the Company expects in order to comply with the Company's standards.
- Establish a mediation/dispute resolution process and identify the responsible person.
- Communicate to partners and business partners to understand the potential human rights impacts of their operations through the annual partner meeting.

#### Receive complaints through:

- Website: [www.bangchak.co.th/th/cg/whistleblowing-form](http://www.bangchak.co.th/th/cg/whistleblowing-form)
- Social: [web.facebook.com/Bangchak/](https://web.facebook.com/Bangchak/)
- Suggestion Box: CEO BOX
- E-mail: [ico@bangchak.co.th](mailto:ico@bangchak.co.th) / Telephone No: 0 2335 8510
- Complaint Letter: [newintranet/uploads/form\\_download\\_45.doc](http://newintranet/uploads/form_download_45.doc)



### Risk Issue: The Company's new business projects have an impact on the environment, health, and safety of people in the communities surrounding the project area.

#### Details:

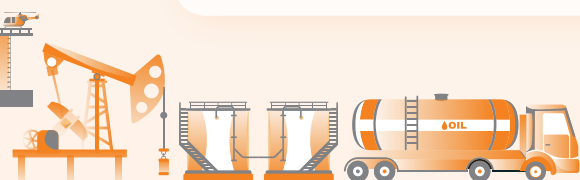
- Possibility that the environmental, health, and safety impacts of people in the communities surrounding the project area will be overlooked, resulting in no measures to manage these impacts.

#### Mitigation Measures:

- The new business project has been assessed for environmental impact (EIA: Environmental Impact Assessment), which includes a study covering four environmental systems: 1) Physical resources: This is a study of the impacts on soil, water, air, and noise. 2) Biological resources: This is a study of the changes in various aspects of the ecosystem, such as forests and wildlife. 3) Human use value: This is a study of the changes in land use, water use, and water sources. 4) Value on the quality of life of the community: This is a study of the changes in economic and social conditions.
- A community development fund has been established with a committee of community representatives to consider the allocation of budget expenses for the benefit of the community in terms of environment, health, and quality of life development. Examples of activities include health check-ups, vocational development projects, youth camps, and education.

#### Complaints can be submitted through the following channels:

- Hotline: 1651
- Website: [www.bangchak.co.th/th/cg/whistleblowing-form](http://www.bangchak.co.th/th/cg/whistleblowing-form)
- Social: [web.facebook.com/Bangchak/](https://web.facebook.com/Bangchak/)



## Grievances and Whistleblowing Mechanisms

The Company has established channels for reporting human rights concerns and legal and ethical violations. These channels are available to both employees and other stakeholders. The Company has also implemented a mechanism to protect employees and whistleblowers by establishing a confidential database accessible only to relevant personnel. An investigation committee composed of representatives from departments not involved in the complaint is also established to review, investigate, and take action in accordance with the regulations. The committee will inform the informant of the results within a reasonable timeframe, depending on the severity of the complaint. The following are the channels for submitting complaints and reporting information:

- Report information through the company's labor union or employee committee.
- Hotline 1651
- Email to the Internal Audit Department

## Collective Bargaining

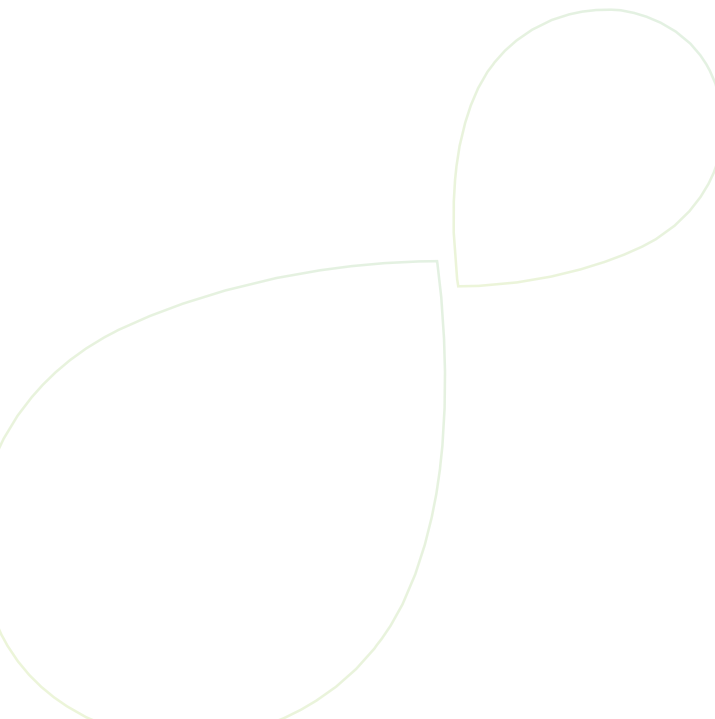
The Company provides employees with the opportunity to have a representative to communicate with the Company's management through the Bangchak Corporation Public Company Limited Employees' Union. The union is a separate legal entity registered in accordance with the law. The Company grants the union the authority to operate independently and supports its activities in accordance

with the law. This includes facilitating the union's annual meeting and publicizing its activities through the Company's communication channels. Currently, the union has 442 members, representing 41% of the workforce. All employees are covered by the collective bargaining agreement, and regular meetings are held with management. The union has the right to appoint a committee of employee representatives (currently 13 members) to develop employee benefits and rights together with management representatives. This ensures that employees receive benefits that meet their needs and expectations. Meetings are held every quarter as required by law. In 2023, some of the outcomes of the joint meetings included:

- Improving the policy on marketing representative vehicles to make them more suitable for use.
- Improving benefits by providing additional souvenirs to employees who have worked for 30 years.
- Facilitating communication between employees and the employee committee through email.

## Disputes and Grievances

As a result of the above human rights strategies and operations, the Company has not received any human rights complaints related to its own operations or those of its partners in the past year. These complaints could be related to the non-use of forced labor, the absence of labor disputes, the freedom of negotiation, the non-discrimination, the non-violation of the rights of vulnerable groups (persons with disabilities, children, indigenous peoples), and no significant violations of social laws or regulations.



# Human Resource Management (HM)

## Employee Care

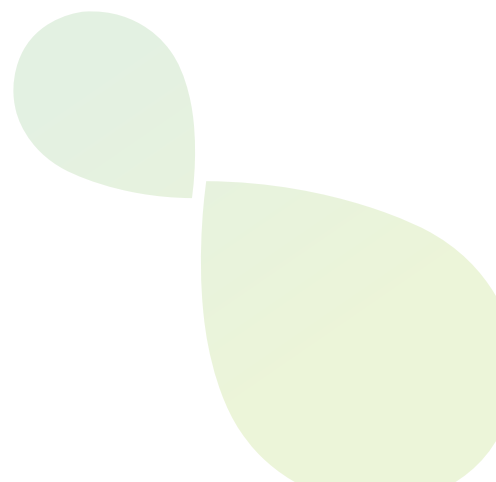
The Company prioritizes employee care under the 100XHappiness strategy, promoting work practices aligned with the organizational values of “i am bcp” Additionally, the Company emphasizes talent attraction and retention, as well as career development and advancement, to align with business objectives and ensure that every employee experiences happiness. This aims to enhance employee’s happiness by 100 times as well as to steer towards the 100 year sustainable growth goal, also known as Bangchak100X with frameworks, objectives, and continuous operational efforts as follows:



### Employee Care Goals for 2023-2026

- The Company adheres to the concept of employee care through 100XHappiness and promotes a work behavior model known as “i am bcp” This is implemented in line with “The BEST Employer” guidelines, while also supporting alignment with sustainable development goals.

Agility	Engaging Leadership	Talent Focus	Employee Engagement
<ul style="list-style-type: none"> <li>• Having adaptability, flexibility, and high capability to adjust.</li> <li>• Emphasizing teamwork, respecting differences, and effectively harmonizing diversity.</li> <li>• Fostering innovation to support and adapt to changes.</li> <li>• Being responsive to evolving customer needs.</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership development.</li> <li>• Maintaining relationships, fostering engagement, and connecting with employees by communicating a clear vision and demonstrating core values to create inclusivity.</li> </ul>	<ul style="list-style-type: none"> <li>• Creating a positive work environment and providing motivation to employees.</li> <li>• Developing employee skills and promoting employee growth.</li> <li>• Compensation management and employee retention.</li> </ul>	<ul style="list-style-type: none"> <li>• Fostering positive emotions among employees, cultivating long-term commitment to the organization, and demonstrating intrinsic motivation in fulfilling job responsibilities to the fullest.</li> </ul>



## Employee Care Activities

The Company has developed a strategic plan for the care and development of its employees through the Management Development Committee (MDC) and has established Management Development Sub Committees (Sub MDC) for each business group. These committees aim to closely monitor compliance with employee care and development policies according to the strategic plan, enhancing effectiveness significantly.

The Company has gathered employee feedback through an employee engagement survey, along with a data analytics system and an employee engagement dashboard displayed for managers and above. This is utilized to promptly align employee care with the situations within the organization and direction. Regarding the employee care process, it is divided into 1) Workforce Planning and Recruitment 2) Employee Development 3) Employee Engagement Management and 4) Employee Retention.

## 1. Workforce Planning and Recruitment

In preparation to continuously support the Company's growth, workforce planning and recruitment are pivotal actions that must be appropriately executed to achieve the Company's vision and goals. The Company adheres to a modern and inclusive recruitment policy, adapting to societal changes and catering to diverse age groups while still prioritizing the promotion of equality in all dimensions, including gender, age, ethnicity, religion, and educational background. The Company maintains a policy of hiring employees with disabilities based on knowledge, skills, potential, and values that align with the organizational culture. Additionally, all positions within the organization are filled on a full-time basis. For further details on employee benefits, please refer to the "Employee Engagement Management" section in this report (GRI 401-2).

### Employee Recruitment Goals

Key Performance Indicator	2023	2024 – 2025	2026 (Long Term)
• Job Succession Rate	100%	95%	95%
• Employment Rate of People with Disabilities (accounting for 1% of total employees)	12 People	13 People	14 People
• New Generation Workforce Survey	Ranked within the top 12	Ranked within the top 9	Ranked within the top 6
• Average Duration of Employee Recruitment (Days)	40 Days	40 Days	40 Days

### Work Strategy for 2023

### Major Achievements in 2023

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Planning human resources and capabilities in alignment with the Company’s strategic plan over 3-year period</li> </ul>   | <ul style="list-style-type: none"> <li>• The Company developed a proactive recruitment plan by conducting roadshows and participating in job fairs at universities. Additionally, the recruitment method transitioned to online platforms, including organizing online career roadshow sessions for target universities which aimed to align with the Company’s strategy of building employer branding.</li> <li>• Moreover, the Company offered scholarships for master’s degree programs in specific fields to the general public, in line with the Company’s future business growth. This initiative provided an opportunity for individuals to advance themselves, while also enabling the Company to cultivate potential talents for sustainable business operations in the future.</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Hiring with value and equality, providing opportunities for employment of people with disabilities to foster sustainable societal development</li> </ul>   | <ul style="list-style-type: none"> <li>• The Company hired 12 qualified individuals with disabilities in suitable positions, fulfilling the 1% quota of the total workforce, as mandated by Section 33 of the Disabled Persons’ Quality of Life Promotion Act B.E. 2007. This action is also aligned with Sustainable Development Goal (SDG) Target 8.</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Creating a positive organizational image through various online media platforms to attract and engage with new generations, encouraging them to become familiar with and aspire to work with the organization</li> </ul> | <ul style="list-style-type: none"> <li>• The Bangchak Talent Internship Program 2023, aimed at nurturing future talents, attracted students from various institutions, both domestic and international, to intern with Bangchak. A total of 142 interns participated in the program, which included both seasonal internships and cooperative education programs.</li> <li>• The interns gained valuable experience in green innovation and contributed innovative solutions to real business challenges through the Bangchak Hackathon Program under the “Bangchak Young Greenovator” project. To enhance its employer branding, the Company continued to promote its career opportunities through various online channels.</li> <li>• The Bangchak Career Facebook Page garnered over 270,000 views and had more than 30,000 followers. The Company also revamped the News and Events section on its website, <a href="http://career.bangchak.co.th">career.bangchak.co.th</a>, to provide more comprehensive information about its work environment and benefits, which can be broken down into 10 topics: 1) Career Development, 2) Lifestyle &amp; Facilities, 3) New normal, 4) FAQs, 5) Greenovative Experience, 6) Bangchak Career Podcast, 7) Bangchak Scholarship, 8) How to introduce yourself, 9) BCP Career Event and 10) BCP Onboarding Program.</li> <li>• Additionally, the Company expanded its communication channels including the Line Official Account: Bangchak Career with 2,000 followers, the Line Official Account: BCP Talent Intern specifically for the internship program, TikTok: Bangchak Career and LinkedIn Bangchak.</li> </ul> |

**Work Strategy for 2023****Major Achievements in 2023**

- Moreover, the Company collaborated with external media platforms, such as WorkVenture, to promote its employer brand and attract new talent. It also planned to produce video content in partnership with Job TopGun to highlight Bangchak as an employer that excels in employee wellbeing across four aspects: quality of life, job satisfaction, financial rewards, and social support, surpassing general standards.
  - Furthermore, the Company conducted surveys to understand the preferences of job applicants from different generations and tailored its recruitment strategies accordingly. It also evaluated its retention rate for employees with less than two years of tenure and found an increasing trend due to improved benefits and work life balance initiatives.
  - In addition to these efforts, the Company launched initiatives like the Bangchak Internship Alumni program to build a network of former interns and encourage them to join or refer others to work at Bangchak. It also implemented the “Friend Get Friends” program to streamline the recruitment process and attract candidates more efficiently.
- 
- Reducing the recruitment time
    - Additionally, the Company enhanced the Smart ME human resources management system to facilitate recruitment and selection processes through computerized systems. Furthermore, the Company further developed its onboarding program to foster the “i am bcp” values and organizational commitment from the beginning of employment until the end of the probation period. Moreover, it created the Onboarding Bangchak Lifestyle handbook to provide information about the surrounding environment, workplace facilities, such as accommodation, hospitals, and recreational areas.
    - The Company expanded the recruitment and application channels for job seekers within the Smart ME system through the “Introduce Yourself” feature, allowing candidates to submit their resumes more conveniently without waiting for job vacancy announcements.
    - The Company also revised interview questions to emphasize the “i am bcp” values, ensuring that prospective employees possessed the desired competencies and characteristics aligned with the Company’s requirements. Additionally, interviewers were briefed on the Company’s values to better assess candidates.
    - Furthermore, the Company enhanced competency based assessment tests to be conducted online, enabling candidates to complete all selection tests through computerized systems. Moreover, it refined the test guidelines to align with modern standards and ensure more accurate assessment results.

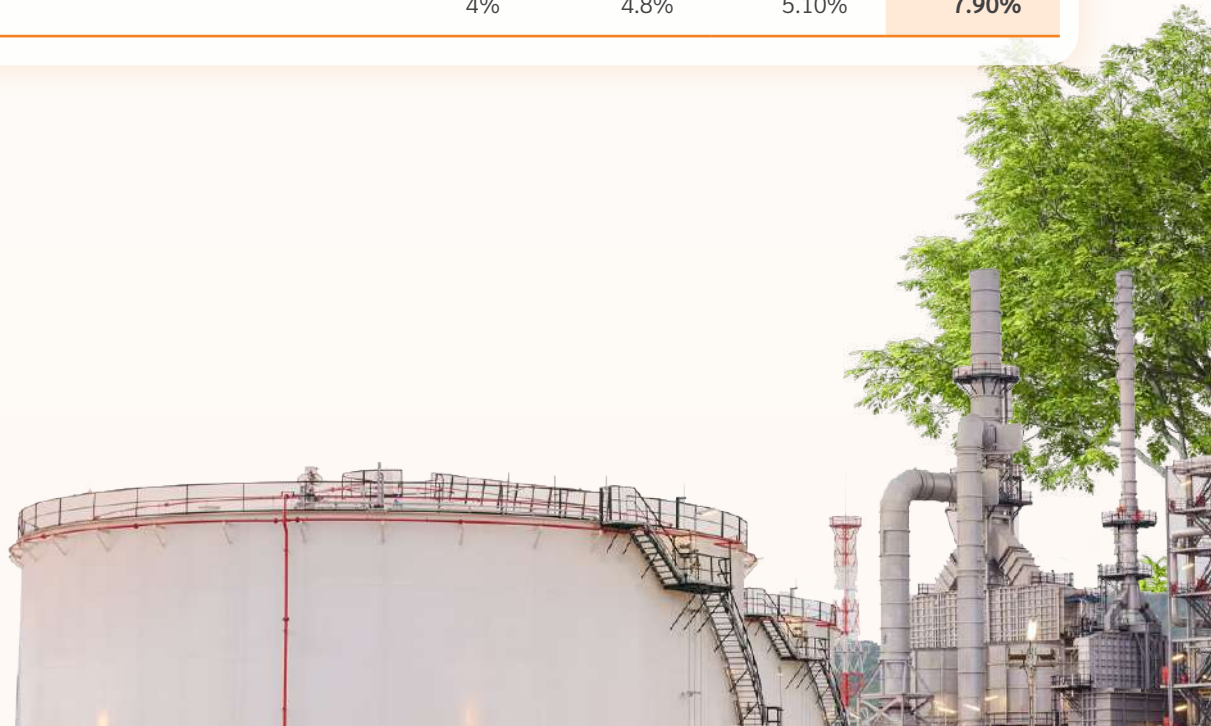


### Performance on Recruitment Targets in 2023

Target	2019	2020	2021	2022	2023
Manpower Rate (Headcount)	1,251 People	1,230 People	1,103 People	1,098 People	<b>1,174 People</b>
Recruitment Success Rate (Target)	90.72% (90%)	94% (90%)	90% (90%)	92% (90%)	<b>100% (94%)</b>
Recruitment of People with Disabilities (Target)	13 People (13 People)	12 People (12 People)	11 People (11 People)	11 People (11 People)	<b>12 People (11 People)</b>
New Employee Recruitment Duration (Target)	40 Days (43 Days)	40 Days (43 Days)	42 Days (42 Days)	42 Days (42 Days)	<b>40 Days (42 Days)</b>
New Employee Recruitment Rate	74 People	30 People	43 People	57 People	<b>124 People</b>
Retention Rate (First 1-2 years) (Target)	99% (85%)	99% (85%)	97% (85%)	85.86% (85%)	<b>87.22% (85%)</b>

### Bangchak Employees by Generation

Generation	2020	2021	2022	2023
Baby Boom	1.8%	1.3%	0.73%	<b>0.40%</b>
Generation X	43.3%	40.9%	40.98%	<b>38.30%</b>
Generation Y	50.9%	53.0%	53.19%	<b>53.30%</b>
Generation Z	4%	4.8%	5.10%	<b>7.90%</b>



### Future Employee Workforce Recruitment Plan

The Company continues to welcome employees who possess knowledge, skills, and potentials aligned with the values of “i am bcp” to enable them to develop themselves in line with the Company’s direction. Additionally, the Company aims to build a positive image through various channels to attract new generations and encourage them to join the organization.



## 2. Employee Development

Human resources are considered crucial by the Company, with every employee possessing diverse potentials. The Company has prepared development plans for employees at all levels to ensure they have the necessary competencies for their designated positions. This includes defining the skills and characteristics required for each profession (Competency) and harnessing individuals’ potentials to focus on efficient organizational management (Talent Focus). Following the guidelines of being the best employer, based on the Company’s core values of “i am bcp,” employees are encouraged to collectively innovate, produce innovative ideas using Agile and Design Thinking processes to adapt to uncertainty and global situations. In 2023, the Company still recognizes the importance of Technology Disruption and supports employees in integrating digital tools to enhance work efficiency through the Bangchak Group Digital Contest. This initiative promotes the use of digital tools among employees to transform work processes into digitalization. Employees are trained in using digital tools to equip them with knowledge before submitting their work for consecutive annual competitions for awards, now in its second year.

### Employee Development Goals 2023 – 2027

To assess employees’ abilities, the Company conducts competency evaluations and analyzes the results to develop individualized learning plans that align with employees’ career path development. The goals set for the years 2023-2027 are as follows:

Key Performance Indicator	2023	2024 - 2026	2027 (Long Term)
Success Rate in Developing Competencies & Skill Sets that Align With the Company's Future Goals	≥ 75%	≥ 80%	≥ 85%
Success Rate in Developing Career Development Plans for employees in the Talent & Successor Group	≥ 85%	≥ 90%	100%
Number of Employees Participating in Online Learning and the BCP-KMS System Within the Organization	≥ 85%	≥ 90%	100%

Work Strategy for 2023	Major Achievements 2023
Talent Development & Succession Plan: A plan for developing high-potential employees and succession planning for executive positions, critical positions, and positions in new business ventures.	Talent Development: The Company conducted psychometric tests focusing on mental, knowledge, ability, attitude, and personality aspects to develop individualized development plans for high-potential employees, starting from the managerial level, achieving the target of 100%.
Developing a learning system through cutting-edge technology for easy accessibility and meeting the needs of employees.	97% of the targeted group of employees engaged in learning through the Online Learning system and the Knowledge Management System (BCP-KMS) within the organization.
Developing employees in the field of technology and digitalization to enhance work processes to transition towards becoming a Digital Transformation Organization.	The Company has elevated knowledge and fostered competition through Digital Contests by developing its IT employees into Internal Instructors. This enables them to impart knowledge and provide guidance to employee participants in the program, empowering them to develop projects using Low-code platforms. Additionally, over 20 projects were submitted for competition, an increase from the previous year 2022.

### Employee Development Programs

The Company has developed continuous learning programs to enhance the professionalism of its employees, focusing on improving their knowledge, understanding of management, and various skills necessary to enhance work efficiency in line with the company's vision and goals. Additionally, these programs prepare employees for upcoming changes. Key initiatives undertaken in 2023 include:

- **Bangchak Learning Academy:**

The Company has established guidelines for developing employees within the Bangchak Group to ensure alignment which includes establishing the Bangchak Learning Academy to facilitate employee development. The academy is responsible for designing courses and conducting training to develop employees within the organization, particularly in a shared services format, for future endeavors. Additionally, the Company promotes the creation of internal instructors to cultivate expertise within the organization. These instructors will then impart the strengths of Bangchak to external parties in the future.

- **Mandatory Program: Courses designed to support business growth and foster leadership qualities within the organization at every level**

The Company has established mandatory courses for employees at each level to align with the organization's new VMV (Vision Mission Value). These courses focus on developing knowledge and skills in management, business acumen, as well as internal organizational knowledge to ensure that employees can respond promptly and efficiently to the business's growth, meeting both the company's needs and employee expectations. Development programs are tailored according to each employee's level within the company.

- **Talent Development & Succession Planning: Plan for developing high-potential employees and successors along career paths**

The Company's strategy for developing high-potential employees to prepare for future succession goes beyond technical competency development. It involves creating Individual Development Plans (IDPs) to ensure that capable employees are nurtured and developed. The Company considers job performance alongside growth potential, strategic planning skills, and leadership qualities.

- **Leadership Development**

The Company recognizes the importance of developing leadership skills among managers, starting from the managerial level and above. Therefore, the Company has conducted in-house training courses on coaching and mentoring for employees and participates in external training programs to learn best practices from leading companies. Additionally, the Company has arranged special lectures on various topics for managers to enhance their management concepts, learn about tools and methods for fostering good relationships within the organization, and to strengthen employee care.

- **Online Learning**

The Company prioritizes employee learning that can be done from anywhere and at any time, allowing them to choose specific subjects based on their interests. This approach aims to adapt to the changing ways of learning in the current landscape. To facilitate this, the organization has adopted an Online Learning system, with Conicle being the main platform provider.

- **BCP - Knowledge Management System (BCP-KMS)**

The Company has upgraded its internal knowledge management system (BCP-KMS) to allow employees to exchange and share knowledge about work experiences, lessons learned, and work techniques (Tips and Tricks). This is aimed at capturing important organizational knowledge that aligns with the long-term strategies and business operations necessities. In the year 2023, 19 new pieces of knowledge were added to the system.

- **Employee Scholarships**

The Company has provided employee scholarships to support the development of employees in line with the Company's vision, aiming to become a leading green innovation group in Asia, with a strong commitment to corporate social responsibility and sustainable business practices. The Company has established criteria and guidelines for providing scholarships to employees of certain subsidiaries and employees within the group, to pursue master's and doctoral degrees both domestically and internationally, according to the Company's conditions.

- **Innovation & Design Thinking Courses**

The Company continues to prioritize the integration of Agile and Design Thinking concepts to develop employees by incorporating them into training programs for all levels of staff, including both new employees and those preparing for advancement. These training sessions

provide knowledge alongside coaching on pitching projects before presenting them at upcoming management meetings and aim to enhance work efficiency, reduce costs, add value to the business, and promote innovation to develop new business ventures. This is in addition to knowledge-based training sessions as per the planned agenda.

- **Preparing Employees for the Transition to Becoming a Digital Transformation Organization**

The Company recognizes the importance of technology disruption and supports employees in leveraging digital tools to enhance work efficiency. Therefore, the Company organized the Bangchak Group Digital Contest under the name Digital & Data in You (DDIY) which aims to encourage employees to utilize various digital tools to transform work processes into digitalization. The IT team serves as instructors, providing knowledge on how to use digital tools to employees before the competition. This year marks the third season of the training program, following its continuation from 2022.

- **Preparing Employees for Retirement or Termination Due to Business Transformation**

- In the event of organizational restructuring, production process changes, or service adjustments leading to workforce reduction, the Company will notify employees no less than 60 days in advance and proceed with providing compensation as required by law (GRI 402-1 a). This is outlined in the employee handbook and is reviewed and mutually agreed upon by the Joint Employee Committee comprising representatives from the labor union and company management (GRI 402-1 b).
- For employees nearing retirement age, the Company emphasizes readiness preparation before retirement, enabling them to lead a quality post-retirement life. Training sessions are conducted to provide knowledge to targeted employees aged 45 and above on relevant topics such as financial management, utilizing social security benefits, health insurance, and other related matters.

## **Future Employee Development Plans**

To enable employees to align with the future strategic direction and changing core values of the Company, emphasizing boldness, customer empathy, passion & ownership, as well as technological advancements,

the Company has outlined a development path for employees which includes enhancing their knowledge and skills, as well as behaviors and mindset, to align with the new core values and respond to the Company's future direction.

### 3. Employee Engagement Management

The Company conducts employee engagement surveys annually to measure employees' commitment and satisfaction towards the organization where results are then compared over different time periods to gather data and analyze trends. This information is used to formulate strategies, review guidelines, and implement employee care measures to enhance employee engagement and participation. This is all part of the 100XHappiness strategy, which continuously drives the organization towards 4 types of happiness, success and sustainability under the Bangchak100X initiative. It is also aligned with promoting the Company's values through the "i am bcp" campaign, in collaboration with various business units and groups.



#### Happiness Pillar 1: Happy Stay



- The Company undertook a construction project to build a Sports Complex for employees on an area of over 30 acres, equipped with international standard sports fields capable of supporting up to 12 types of sports. It included fitness rooms, dressing rooms, athlete accommodation, and meeting rooms to provide convenience for employees.

- A development project was implemented to enhance the working environment and workspace, such as improving meeting rooms, medical rooms, dining areas, and restroom facilities within the refinery area. Smart connect technology was upgraded in meeting rooms, sports zones were added, and the i am bcp Space, a recreational area, was established at the M Tower headquarters for various employee activities.
- The Company developed "Employee Experience" to align with the i am bcp Core Value, such as developing employee cards in collaboration with BTS cards for commuting, shopping, and point accumulation. Additionally, vending machines were upgraded to allow employees to access office supplies and uniforms through the new employee card format.

#### Happiness Pillar 2: Happy DNA under i am bcp

- The Company fostered ownership and understanding of i am bcp through the Core Value Journey Checkup plan, which involved studying the definition and supportive behaviors.
- Communication and tool creation were prioritized to support the demonstration of i am bcp core values, such as the i am bcp song, Employee Card Vending Machine, iam bcp SPAC, aiming to enhance understanding and encourage expression.
- Understanding of the i am bcp core values was promoted through activities such as iam bcp: Boots up 101, Do&Don't, BU & BG, Newcomer Program, along with reinforcing behaviors through the Wrong DI Innovation trial.

#### Happiness Pillar 3: Happy Me

- The Company provided welfare benefits (GRI 401-2) for employees, including:
  1. Medical expenses for employees and their families (inpatient and outpatient)
  2. Medical expenses for parents (inpatient and outpatient)
  3. Dental expenses for employees and their families
  4. Life and accident insurance
  5. Social security
  6. Annual health check-ups
  7. Medical room
  8. Retirement fund/pension
  9. Education fund for children

10. Child assistance fund
11. Housing loan assistance
12. Funeral assistance fund
13. Income replacement for disability not related to work
14. Longevity award policy
15. Annual leave, business leave, sick leave, and maternity leave
16. Paternity and childcare leave for female and male employees (GRI 401-3) where female employees are entitled to 98 days of maternity leave with pay, which includes prenatal check-ups, childbirth, and childcare. Male employees, on the other hand, are entitled to one day of paternity leave to care for their wives during childbirth and 15 days of childcare leave. Further details regarding the utilization of these rights can be found in the “Sustainability Performance Statistics” section of this report.

Additionally, the Company has started implementing a Flexible Benefit program for outpatient medical expenses. In 2023, the Company expanded the scope of flexible benefits to cover expenses for eyeglass prescriptions or gym memberships. Furthermore, adjustments were made to extend flexibility in family outpatient medical expenses reimbursement and maternity leave entitlement. The Company has also enhanced the convenience of various benefits application systems, such as the employee uniform request and stock management system, housing loan application system, special loan request system, and medical room booking system, to better accommodate employees.

- The Company has implemented a health and well-being program for employees, which has been supporting continuous health activities for over 5 years. In 2023, the Company elevated its health application through the implementation of health care station missions and an online psychiatric consultation platform. This platform enables employees to privately and securely consult with psychiatrists and psychologists via video calls, accessible anytime and anywhere. Furthermore, the program addresses office syndrome symptoms through relaxation massage activities, acupuncture sessions by Chinese medicine practitioners, various exercise classes such as yoga and body combat, and quarterly health education programs like Dr.Talk. The Company also extended the

presence of in-house physicians and organized specialized medical clinics to provide employee consultations on a monthly basis.

- The Company has implemented continuous care measures for COVID-19, such as providing vaccination incentives for employees and their families, installing ATK vending machines, establishing a system for recording ATK test results, and notifying employees of COVID-19 cases. Additionally, the Company delivers basic care medications to employees’ homes and enhances health protection by offering influenza vaccinations to employees.

### Happiness Pillar 4: Happy Heart



- In 2023, the Company organized a total of 3 BCP Town Hall events to directly communicate directions, business performance results, and various updates to employees. These sessions were led by senior executives from certain business groups and the CEO, along with deputy CEOs. Additionally, within each department and business group, there were Town Hall meetings held to promote the values of i am bcp and enhance employees’ understanding of these values.
- The Company has established a channel for employees to voice their opinions and suggestions directly to the CEO through the CEO Box. All employees have the opportunity to express their feedback or proposals anonymously without the need to disclose their identity. The CEO personally responds to these submissions and communicates directly with the employees. For example, the PS activity, where the Sales team of MKBG meets, originated from a suggestion submitted through the CEO Box. This allows employees and the Sales team to engage in discussions, exchange perspectives, understand business directions, and foster motivation. It also promotes better relationships between management and employees.

- The Company has fostered relationships between senior management and employees through various activities, such as employee clubs and recognition events. These initiatives include sending birthday cards to employees and organizing “Recognition Congratulation Day” events to celebrate employee promotions. These activities help strengthen bonds between management and employees, fostering a positive and supportive work environment.
- The Company has organized the “12 Month 12 Activities” initiative to promote employee engagement and foster relationships within the organization. The focus is on promoting the Company’s values through the “i am bcp” campaign while encouraging employee participation in activity planning.

the 2020 score. This continuous improvement in engagement scores came after the implementation of the 100XHappiness strategy and the active participation of employees in providing feedback through surveys. In 2023, the engagement score further increased to 93%, indicating the employees’ strong commitment to contributing ideas for the continuous improvement of the Company’s HR management system.

In addition, the Company was awarded the “HR Asia Best Companies to Work For in Asia 2023”, an international recognition given to companies in Thailand that are considered the most desirable workplaces in the Asian region. This award was attributed to the Company’s commitment to employee well-being under the 100XHappiness framework, aiming to ensure 100 times happiness for all employees and striving towards the sustainable growth goal of Bangchak100X, as a leading business group driving energy transformation.

According to the employee engagement survey conducted in 2023, the Company received an overall engagement score of 85%, showing a 10 percentage point increase from

### Next Phase Plans

In the upcoming year 2024, the Company will continue to focus on fostering engagement and integrating organizational culture development as a fundamental aspect of engagement building, following the Organizational Culture Change Roadmap. This aims to ensure that employees perceive, understand, and actively participate in elevating their engagement with the organization. Additionally, there will be ongoing efforts in growth initiatives, performance evaluations, and competency development.

## Organizational Culture Change Roadmap

I : Innovation    AM : Agility & Mobility    B : Boldness    C : Customer Empathy    P : Passion & Ownership



## 4. Employee Retention

The Company will go through various processes when hiring a new employee, including recruitment, selection, interviews, and development. At each stage, the Company utilizes both financial and non-financial resources. Therefore, if the Company has a high employee turnover rate, it will lose resources in recruiting replacement employees. Additionally, capable employees are essential in achieving the Company's vision consistently. Therefore, the Company places great importance on retaining employees to strive towards the goal of 100X Happiness.

### 2023 Goal and Performance

The Company has set a goal to care for and retain employees to ensure continuous high performance. This includes developing employees to meet accepted performance standards. Additionally, the Company implements Performance Improvement Projects (PIP) to monitor and enhance employee performance.



#### Employee Performance Assessment Model

% of employees

KPI + Behavior

32.2%

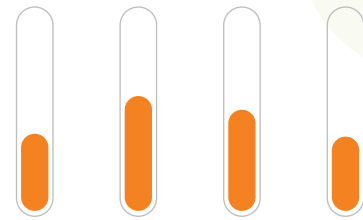
KPI + Behavior + Potential Assessment  
(Multidimensional Assessment)

67.8%



#### Employee Turnover Rate (%)

3.16 5.13 4.50 2.99



2020 2021 2022 2023

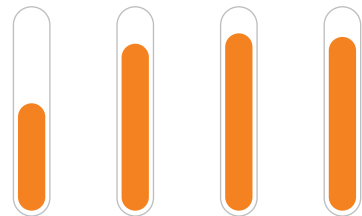
Target: the employee turnover rate is less than or equal to the industry.



#### Promotion Rate

(%)

9.79 15.13 15.97 15.65



2020 2021 2022 2023



#### Employee Remuneration Rate

(Female to Male)



0.92 : 1

Executive employees and above



0.95 : 1

Senior employees



0.81 : 1

Manager employees



0.82 : 1

Operational employees





## Significant Developments

### Performance Appraisal and Compensation Management Key Operations

- **Performance Appraisal**

In the previous year, the Company began experimenting with a new performance evaluation system alongside the existing system for managers and above. This year, the Company has extended its use to all employees. The new evaluation format allows for clearer measurement of results by adjusting employees' Key Performance Indicators (KPIs) to better align with the organization's goals. This emphasizes the importance of each individual's contribution to driving organizational objectives, crucial for transforming the organization into a High Performance Organization (HPO).

Additionally, "Potential Assessment" has been added for managerial-level employees where previously, this assessment was only conducted for managers and above. Employees are now evaluated by their direct supervisors and other supervisors they collaborate with, providing multiple perspectives. Moreover, managers and above are also evaluated by their peers, and the results are used for future employee development planning.

- **High Potential & Fast Track Promotion**

The Company will evaluate past performance in conjunction with growth potential, strategic planning abilities, leadership qualities, and completion of mandatory courses according to the prescribed levels. Additionally, consideration for promotion will be based on special criteria for high potential and fast-track individuals. Furthermore, the Company has devised employee development plans to align with career progression paths for employees.

- **Compensation Management**

Managing employee compensation appropriately at each level is another crucial aspect of fostering engagement and moving towards a high-performance culture, following the guidelines of "The Best Employer" in each year. The Company conducts benchmarking of compensation and benefits against both the petroleum industry and similar industries, as well as external environmental factors. This is done to review and adjust compensation criteria accordingly. Additionally, there is ongoing review and development to ensure that compensation management aligns with the evolving needs of new-generation employees. As a result of this compensation survey, the Company has a compensation structure for employees at all levels that is competitive and has a higher value than the minimum wage rate. (GRI 202-1 a)

The Company determines employee compensation through the annual performance management system, which is derived from organizational goals and divided into two factors: Key Performance Indicators (KPIs) and desired work behaviors, evaluated directly by supervisors, and Potential Assessment, evaluated by other colleagues beyond direct supervisors. This allows employees to receive feedback and suggestions for improvement beyond the regular assessments from direct supervisors, leading to more effective assessment results and development planning.

Moreover, the Company promotes an equal working environment and inclusivity in terms of gender, age, religion, ethnicity, and other dimensions in the workplace. Therefore, performance evaluations, growth opportunities, and compensation decisions are based on the importance of knowledge and skills according to the expectations of each job level.



# Community and Social Development



The Company has been taking part in the development of the well-being of Thai society since the establishment with the “Green Society” strategy and community-relation specific strategy, “SUCCESS” to consistently support, protect, address, and respond to the community/society expectations by considering the impacts to them such as safety from operation and process of the Company to neighboring communities and society, environmental management and pollution control, and community health and well-being from the Company’s main businesses (refineries and oil service stations). Currently, the Company also emphasizes the importance of human rights and biodiversity.

## Community Relations Strategic 2023 - 2027



## Human Rights Operations: Communities

### Social License to Operate

Operate with safety and emphasis on the environment

### Community Development and Involvement with the community relation activities

Reference: Analyzed and divided into various dimensions based on relevant human rights risks (communities), 5 types of human rights (according to internationally accepted principles) and the Universal Declaration of Human Rights 1948 (B.E. 2491).



In 2023, the Company has conducted the following:

## 1. Bangchak Caring for Neighbors (Disclosure 413-1)

### Strategy and Targets for 2023-2028

The refinery is the crucial area of operation for the Company (90%) (Disclosure 413-1). In our community relations endeavors, the Company has categorized the target residents in the vicinity of the refinery into four subgroups. This segmentation allows us to appropriately respond to the unique needs and expectations of each group, while prioritizing human rights and equality. The predominant expectations revolve around: (1) Continual Improvement of Quality of Life and Economic Well-being: Despite the gradual recovery from the COVID-19 situation, economic stability remains elusive. Our efforts include health check-ups, provision of eyewear, and income generation support for the community. (2) Support / promote the economy and generate recurring income for the community (3) Safe Business Operations and Community Security: The Company actively supports community safety through initiatives such as installing closed-circuit cameras,

conducting fire safety training and fire drills, installing fire extinguishers with regular inspections, and installing and repairing community lights. (4) Education Support: Our commitment extends to education, including continuous scholarships, provision of clothing, educational materials, sports equipment, and food assistance. (5) Environmental Enhancement: We promote environmental stewardship by planting trees, landscaping community spaces, supporting waste separation, and purchasing waste and used cooking oil. (6) Proactive Communication for the Company's Implementation Plan and emergency Communication and Response suddenly (7) Continuous Activities that directly respond to the needs of the community equally and thoroughly (8) Community Engagement in Activities that promote the well-being of the community and society. (9) Ongoing COVID-19 Prevention Support despite the recovery.



## Estimated Population



### Community

10 Communities in Bangna/  
Phra Khanong District  
1 Military Flat  
1 Bang Nam Phueng Subdistrict, Phra Pradaeng  
District, Samut Prakan Province.  
**17,885** Persons



### School

19 Schools in Bangna and Phra Khanong  
District, and Bang Nam Phueng Subdistrict  
**14,363** Persons



### Family

**5,098** Household that subscribed  
to Leaf Family Newsletter  
**5,098** Persons



### Condominium

29 Project in vicinity of the refinery  
**6,316** Persons



## Participants (Persons/Percentage\*)



### Community

**61,894** Persons



### School

**28,726** Persons



### Family

**6,578** Persons



### Condominium

**4,360** Persons



## Social Investments THB 20.32 million (Development and Donation Budgets)



### Community

Development Budget



Donation Budget



### School

Development Budget



Donation Budget



### Family

Development Budget



### Condominium

Development Budget



\* Percentage of the participants who join the community relation activities in all groups in 2023 = 101,558 persons (Double Count)

The Company defined the strategy for community relations and related activities in 8 dimensions covering the foundation of needs and support for daily lives regarding human rights and equality in both fundamental needs and rights protection including safety, education, quality of life, environment, economy, relationship and cultural preservation, music and sports, and public benefits. In 2023, the Company organized over 177 activities, benefiting 101,558 individuals through these initiatives.

## 2023 Target



## Community Relations Plan

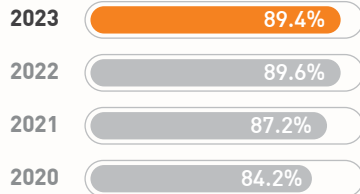
- Organizing activities that align with the needs of the community in a suitable and consistent manner, fostering friendliness, benefiting, ensuring safety, securing commitment, and maintaining a license to operate based on human rights and equality principles.
- Communicating effectively, transparently, comprehensively, and consistently through diverse media and communication channels while tailoring communication to target audiences while ensuring alignment with human rights principles and avoiding infringements on human rights.

## Operating Results in 2023

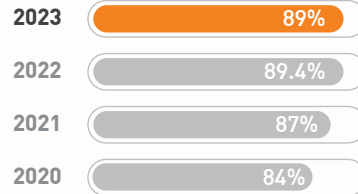
The Company has received positive evaluations in all 4 aspects, namely engagement, safety, friendliness, and benefit, surpassing the targets, with a consistently improving trend since 2020. The results are as follows:



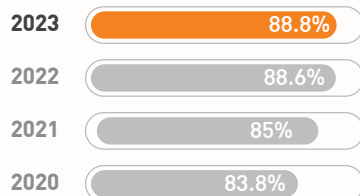
### Aspects : Friendliness



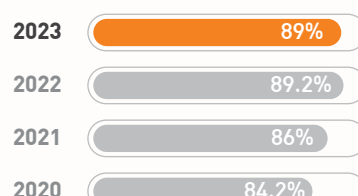
### Aspects: Benefit



### Aspects: Safety



### Aspects: Engagement



The satisfaction rate for participating in the Company's community engagement activities scored 96.3%, with no complaints from the community.

## Communication with the Community

The Company has ensured appropriate communication channels with various groups residing near the Bangchak refinery, utilizing diverse methods. The results in communication include 354 communication events reaching 43,662 target individuals, covering- 10 communities, 5,098 households, 19 schools, and 29 condominiums. The communication channels utilized include:

- On-site community relations staff discussions and direct phone calls.
- Community engagement activities tailored to meet the needs and reach the target groups consistently.
- Line groups for community committees, condominium residents, management executives, and teachers residing near Bangchak Phra Khanong Refinery area.
- Intra-community feedback (controlled and directly connected from the control room within the refinery).
- Public relations boards in the community and condominiums.
- "Krob Krua Bai Mai" (Leaf Family) leaflets and Krob Krua Bai Mai Bangchak Facebook page for family groups.
- Other media and communication channels as detailed in the table below.

## Communication with Stakeholders

Media / Communication Channels	Target Group				Resp.	Status
	Community	Family	Condominium/ Military Flat	School		
<b>1. Wired Speakers</b>	✓				CAF Co. with MSD	Ongoing - Depending on activities/ events
<b>2. Printed Media</b>					CAF	
- Krob Krua Bai Mai Pamphlet (Hard Copy/ e-Book)		✓	✓ (Condominiums only)			Bi-monthly
- Poster Banner Leaflet/ Sticker/ Calendar/ BCP's Contact Number /Other important information	✓	✓	✓	✓		Depending on activities/ annual events
<b>3. Social Media</b>					CAF	
- Line Group (For coordination)	✓		✓	✓		Ongoing - Depending on activities/ events
- Krob Krua Bai Mai Facebook Page		✓				Ongoing - Depending on activities/ events
<b>4. Personal Media</b>					CAF Co. with Stakeholders	
- Public Relations Officer (On-site/ Telephone/ Other)	✓	✓	✓	✓		Ongoing - Depending on activities/ events
- Coordination via community chairperson/ board	✓					Ongoing - Depending on activities/ events
- Coordination via condominium juristic person/ military flat person in charge			✓			Ongoing - Depending on activities/ events
- Coordination via the school principal / teacher				✓		Ongoing - Depending on activities/ events
<b>5. Other</b>					CAF Co. with CMD CAF Co. with ECD&MSD CAF	
- Bangchak's Call Center	✓	✓	✓	✓		Ongoing - Depending on activities/ events
- Air Quality Display Screen	✓	✓	✓	✓		Ongoing - Depending on activities/ events
- Community Relation Activities	✓	✓	✓	✓		Ongoing - Depending on activities/ events

# Organizing Beneficial Activities to the Community and Society in 2023

The projects/activities carried out by the Company in 2023 primarily reverted to normal offline formats, with almost 100% of them being conducted in person. Only a few projects/activities remained online due to their rapid, convenient, flexible, and suitable nature, aligning with the survey results indicating a desire for a full return to in-person activities. Approximately 90.85% of the Company’s target groups agreed to resume normal face-to-face activities. Key projects/activities conducted include:

## Economic Aspect:



The Company develops economic projects with a fundamental emphasis on prioritizing and considering human rights and equality, both in terms of economic rights, women’s rights, international conventions, Universal Declaration of Human Rights -Article 25 :Everyone has the right to a standard of living adequate for the health and well-being, through various significant economic projects in the year 2023 as follows:



## “Bangchak Sarng Ngarn Pun Archeep (Job Creation)” Initiative to Bolsters Local Economy Conceptual Framework and Roadmap





The Company has been operating The “Bangchak Sarng Ngarn Pun Archeep” project (formerly known as the “Community Economic Development Project”) since 2013. The project operates under the following strategies:

### Building Foundation

The Company aims to build a strong economic foundation for its community neighbors by supporting job creation, providing vocational training, and developing skills that can be used to generate additional or main income. This is done based on the individual’s potential after receiving training. This helps to support the creation of knowledge, jobs, and careers for community members around the refinery who are interested in and need to create/increase income to cope with the economic situation, both in normal economic conditions and in economic downturns due to various situations. These situations can lead to unemployment, lack of jobs, and lack of income. The project has provided training in various vocational skills, such as the “Noodle Dish” cooking course, which teaches how to cook 6 types of various noodle dishes. Another course is the “Herbal Juice” course, which teaches how to make 15 types of herbal drinks, such as chrysanthemum tea and bael juice.

### Generating Income

The Company aims to generate income, which is a basic necessity for life, for its community neighbors. This is done by building a foundation through supporting job creation, providing vocational training, and developing skills through the Bangchak Sarng Rai Dai Su Chum Chon project. The project continuously supports products and services from the community, community members, shops, and entrepreneurs in the communities around the refinery. This provides them with income to use for their daily lives and to support their families in normal economic conditions, as well as during periods of economic downturn and stagnation, such as the COVID-19 pandemic and global inflation. The project’s income generation activities for the community are divided into two types:

1. Conducting through Corporate Social Responsibility (CSR)-in-process. This involves supporting products and services from the community, community members, shops, and entrepreneurs in the communities around the Company for use or implementation in the Company’s various core business processes and activities on a continuous basis. For example, the Company establishes and manages community markets during Turn Around Maintenance (TAM) Periods. This allows shops and entrepreneurs in the community to sell food, drinks, and consumer goods, or box lunches, to contractors and employees working during that time. In addition, the Company orders food and snacks, supports products/handicrafts and services, such as renting vans from the community for use in various Company projects and activities. These include safety promotion, such as the annual emergency evacuation plan rehearsal (conducted annually), activities to promote safe working hours (conducted annually), and safety promotion activities during various festivals (New Year, Songkran). The Company also supports employee development, such as various employee training courses and employee engagement activities (New Year, Songkran, etc.). Finally, the Company supports community relations with surrounding communities, such as the Bangchak Youth Scholarship Project (conducted annually), the Bangchak Home Visit Project (various festivals, Songkran, New Year, Mother’s Day (conducted annually)), and other projects, such as Annual General Meeting (AGM).
2. Conducting through CSR-after-process. This involves supporting products and services from the community, community members, shops, and entrepreneurs in the communities around the Company for use or implementation in the company’s various post-core business process projects and activities on a continuous basis. This includes ordering food and snacks, supporting products/handicrafts and services, such as renting vans, for use in various post-core business process projects and activities, or projects and activities that are ad hoc/ short-term or occasional. These include visits to businesses/operations of external individuals/ organizations, the Bangchak Sharing Food project, which was organized to help shop/restaurant owners, and the sale/provision of goods and services both in the areas near the company and outside that were affected by the COVID-19 situation.

## Building Sustainability

The Company aims to improve the economic well-being of its community neighbors to achieve the sustainability. This is done by building on the foundation of job creation, vocational training, and income generation through the Bangchak “Generating Income for Communities” project. The Company also supports products and services from the community, community members, shops, and entrepreneurs in the communities around the refinery on a continuous basis. To this end, the Company has begun to support the development and establishment of community enterprises in various forms and areas. The Company started implementing projects and activities to develop and establish community enterprises in 2019. This began with a survey of the economic needs of the community via the training on household accounting and worked with the community to find ways to develop sustainable income. This led to the development of the “Khun Jaew Clean Service” community enterprise project. This project involves a group of women from the neighboring community who have been trained in professional house cleaning by expert trainers. They offer cleaning services to condominiums and houses in the vicinity of the company and the community, generating sustainable income for the members and their families.

In 2023, the Company continues to operate the “Bangchak Sarng Ngarn Pun Archeep” project under the three strategies. In terms of building a foundation, the Company has implemented the “Bangchak Sarng Ngarn Pun Archeep (continued)” project. This project provides training courses in Thai desserts, teaching participants how to make 15 popular Thai desserts and calculate the cost of sales. The participants will also compete in a competition, and the winners will be selected to sell Thai desserts/snacks to the Company for catering on various occasions. The training was conducted by professional Thai dessert teachers/chefs from Dusit Thani College for a total of 5 days in September - October 2023. The project has created jobs for 15 households in the community, providing them with skills/jobs and ways/channels to create jobs/careers. This will help them to have income again and be able to manage important matters in their daily lives and support their families, such as paying rent, paying tuition fees, and repairing their homes, etc., in the future.

## Generating Income

by Bangchak Builds Income for Communities Project (continued) by continuously supporting products and services from the community, community members, shops, and entrepreneurs in the communities around the refinery. This provides them with income for their daily lives and to support their families during periods of economic downturn and stagnation, even though the COVID-19 pandemic has improved and returned to normal. The Company supports the community by ordering food and snacks, supporting products/handicrafts and services, and using or implementing them in various Company activities. This helps shops and entrepreneurs in the community to generate income with 61 times of support to 216 households totaling 949,830 THB (886,830 THB for food/snacks/community products/services and 63,000 THB for van rental from the community).

## Building Sustainability

with the support and co-develop projects in community enterprises in 2 groups as follows:

1. Supporting Project for the Bang Nam Phueng Large Farm Stingless Beekeeper Group. This project supports and develops beekeeping based on environmental conservation and biodiversity. The project works closely with the community to promote economic development, including expanding the number of beekeepers and beehives, developing products, and researching bee supplements. To ensure that the environment and various biological resources can exist naturally and sustainably in the best way possible, while also providing opportunities and channels for sustainable economic and income development for the community. As of 2023, there are a total of 100 persons/households that farm 500 stingless beehives and products derived from the bees, such as 1. Honey 2. Soap (Bar) 3. Premium Soap (Bar) 4. Shower Gel 5. Shampoo 6. Lotion 7. Balm 8. Herbal mosquito repellent (Items 2-7 contain honey, items 3 and 8 contain propolis). creating income for the groups and members of THB 312,090.

2. Bang Krachao Mangrove Palm Community Enterprise Development Project This project is implemented in collaboration with other networks working in the Bang Krachao area, such as Central Group and King Mongkut's University of Technology Thonburi. The project works to develop and establish the Bang Krachao Mangrove Palm Community Enterprise. The project supports the formation of a group of people from 6 communes in Kung Bang Krachao who aim to conserve the mangrove palm, which is a unique feature of the area's three-water ecosystem that support the biodiversity and shelter for various animals such as fish, shrimp, shell, and crab. The mangrove palm is a valuable plant for daily life and the economy, as it can be used for food,

housing, fuel, and various products that generate income. As of 2023, there are 6 main product group, such as 1. Fresh Sugar 2. Processed Syrup 3. Vinegar 4. Sugar Candy 5. Containers made from leaves 6. Local food dishes (e.g., coconut massaman curry, coconut custard). Moreover, There is a development of multipurpose hall to conduct activities/projects for the development of the products. This generated income for the group and its members of over THB 150,000. The operating results from the "Bangchak Sarng Ngarn Pun Archeep (Job Creation)" Initiative to Bolsters Local Economy in 2023 has generated income for the community of THB 1,411,920.

## Bangchak Sarng Ngarn Pun Archeep Project (Initiative to Bolsters Local Economy)

Items and Amount from the Procurement to Support Products and Services from the Community (5 Years: 2019-2023)

Projects/Initiatives	Bangchak Sarng Ngarn Pun Archeep (Job Creation) Economic Activities - Procurement to Support Products and Services from the Community (By Year) (THB)					Total Amount (5 Years) (THB)
	2019	2020	2021	2022	2023	
	Khun Kaew Clean Service	420,000	120,000	20,000	-	
Pun Sook (Community Kitchen)	240,000	7,760,000	-	-	-	8,000,000
Pun Sook Food Box	-	-	430,000	-	-	430,000
Bangchak Pun Kun Im (Food Support)	-	-	1,245,930	-	-	1,245,930
Bangchak Dee Tor Jai	-	320,000	280,000	55,000	-	655,000
Food/Break Snacks/Other Products and Services	173,900	24,000	450,050	778,437	886,830	2,313,217
Van Rental for Employees and External Parties	25,252	2,020	24,242	2,200	63,000	116,714
Bang Nam Phueng Large Farm Stingless Beekeeper Group	-	-	-	182,925	312,090	495,015
Bang Krachao Mangrove Palm Community Enterprise	-	-	-	-	150,000	150,000
<b>Total</b>	<b>859,152</b>	<b>8,226,020</b>	<b>2,450,222</b>	<b>1,018,562</b>	<b>1,411,920</b>	<b>13,965,876</b>

## Bangchak Sarng Ngarn Pun Archeep Project (Initiative to Bolsters Local Economy)

Items and Amount from the Procurement to Support Products and Services from the Community 2 Years Comparison (2022-2023) (Only Projects/Initiatives still in Operation in 2023)

Projects/ Initiatives	Bangchak Sarng Ngarn Pun Archeep Project (Initiative to Bolsters Local Economy) + Items and Amount from the Procurement to Support Products and Services from the Community 2 Years Comparison (2022-2023) (Only Projects/Initiatives still in Operation in 2023)					Total Amount (2 Years) (THB)	Average Income per Household (THB/ Household)
	2022	Average Income per Household (THB/ Household)	2023	Average Income per Household (THB/Household)	Change YoY (THB)		
Food/Break Snacks/Other Products and Services	778,437	4,230.64 (184 Household)	886,830	4,105.69 (216 Household)	No significant change (increase/ decrease) (Total income increase, but the average income per household decreased as the number of household increased.	1,665,267	4,163.16 (400 Household)
Van Rental for Employees and External Parties	2,200	2,200 (1 Household)	63,000	7,875 (8 Household)	- Total income increase 60,800 (2,763%) - Income per household increase 5,675 (258%) (Deviate from the increase of household)	65,200	7,244.44 (9 House- hold)
Bang Nam Phueng Large Farm Stingless Beekeeper Group	182,925	3,048.75 (60 Household)	312,090	3,120.90 (100 House- hold)	- Total income increase 129,165 (70.61%) - Income per household increase 72.15 (2.36%) (Deviate from the increase of household)	495,015	3,093.84 (160 Household)
Bang Krachao Mangrove Palm Community Enterprise	-	-	150,000	7,500 (20 Household)	Unable to compare the change as the project just commissions in the first year	150,000	7,500 (20 Household)
<b>Total</b>	<b>1,018,562</b>	<b>4,157.39</b> (245 Household)	<b>1,411,920</b>	<b>4,104.41</b> (344 Household)	<b>No significant change (increase/ decrease) (Total income increase, but the average income per household decreased as the number of household increased.</b>	<b>2,375,482</b>	<b>4,033</b> (589 Household)

## Quality of Life Aspect



The Company has undertaken projects focusing on improving quality of life based on the principles of prioritizing and considering human rights and equality, encompassing various aspects such as civil and cultural rights, children's rights, and the right to a standard of living and quality of life as outlined in Article 25 of the Universal Declaration of Human Rights. Furthermore, the Company has emphasized the right to cultural participation as stipulated in Article 27 of the Universal Declaration of Human Rights through significant projects aimed at enhancing different aspects of quality of life in the year 2023.

## “Bangchak and Thais: Fight Against COVID-19” Project

Despite the improving situation surrounding the spread of the COVID-19 virus, which is expected to return to nearly 100% normalcy in the year 2023, the Company remains aware of the lingering impacts on both the quality of life and the economic well-being of our neighbors within the community. Recognizing the potential consequences if vigilance is not maintained, the Company continues to implement preventive and surveillance measures through projects with surrounding communities as follows:

- The Company distributed 20,000 boxes of face masks, over 8,500 liters of alcohol-based hand sanitizer, and 3,000 bottles of clean drinking water to residents in the community, condominiums, families, and staff/students in schools and governmental agencies around the refinery area. This project aimed to support neighbors with essential equipment and supplies for prevention and vigilance against infectious diseases, including COVID-19, and other illnesses in the future, in a suitable and continuous manner.

## “Chumchon Sukkapab Dee” Project

The annual health check-up program for residents in the surrounding community of Bangchak Refinery is a recurring project that was temporarily suspended due to the COVID-19 pandemic but has resumed this year. With the improved COVID-19 situation allowing for a return to normalcy, the objective of the program is to support and promote preventive healthcare awareness among community members. The aim is to empower individuals to understand their own health status and take preventive measures or seek timely treatment if health issues are detected during the check-up. The program is conducted in collaboration with private hospitals in the area, such as Ruamjai Rak Hospital. Recently, the program provided health check-ups to 400 residents in the vicinity of the Bangchak Refinery over the course of two days in June 2023 of this year.

## “Poo Soong Wai Hua Jai Online” Project

The project was initiated for the first time in the year 2023, following the results of a needs assessment conducted in 2022 and aligned with the Sustainable Development Goals (SDGs) and human rights principles aimed at supporting widespread development which specifically targets the

elderly population, with the objective of promoting and supporting their understanding and safe usage of technology and online/social media platforms. The primary goal is to equip elderly individuals in the community and family groups with knowledge that they can effectively apply to their daily lives. The project achieves this through training sessions and activities conducted 3 times in July 2023 of the past year with over 150 elderly individuals and family members from the community actively participating in the training sessions and activities.

## Safety Aspect



The Company has developed safety-focused projects, based on prioritizing and considering human rights and equality, particularly regarding civil liberties and the right to a decent standard of living and quality of life as outlined in Article 25 of the Universal Declaration of Human Rights in 2023 as follows:

## Bangchak Huang Yai Plot Phai Nai Communities, Schools and Condominiums Project

Conducting drills for community evacuation plans in case of emergencies, disaster evacuation exercises, fire extinguisher training, first aid workshops, and basic life-saving assistance training.

The Company conducts emergency evacuation plan drills, including fire and disaster scenarios, along with training sessions on fire extinguisher usage, first aid, and basic life-saving techniques for the community, teachers, students, and personnel in schools, as well as residents in condominiums around the refinery area. These drills are held regularly every year or at least biennially, based on the needs and suitability of specific target groups.

In 2023, the Company organized emergency evacuation plan drills and training sessions on basic fire extinguisher usage, first aid, and basic life-saving techniques such as CPR and assistance for choking and respiratory distress symptoms. These activities were conducted entirely online due to the COVID-19 pandemic, accommodating all target groups and enhancing the content, particularly for condominium residents. Additionally, separate training courses were conducted for schools, focusing on basic first aid, CPR, and the use of AED devices. This was in response to lessons learned from the Itaewon incident in South Korea. The Company provided these services to 8 communities, 14 schools (24 sessions, 2 courses), and 22 condominiums in the Phra Khanong-Bang Na area, ensuring that teachers, students, school staff, and community residents in condominiums were knowledgeable, understanding, and prepared to deal with various emergencies, disasters, and accidents. A total of 54 drills were conducted across all target groups, with 25,023 participants involved.

## Environmental Aspect



The Company has developed environmental projects based on the principles of prioritizing and considering human rights and equality, particularly in terms of political rights, children's rights, and the standards outlined in Article 25 of the Universal Declaration of Human Rights concerning the right to a standard of living and quality of life in 2023 as follows:

## Environmental Quality Improvement and Social Activities Development Committee

The Company aims to foster community and stakeholder engagement in jointly developing the refinery's environmental initiatives and social activities, including safety and other relevant matters. To achieve this, it collaborates with relevant government agencies and local communities to establish an operational committee for environmental quality improvement and social activities of the refinery for the year 2023-2026. This committee was officially formed in 2023 and consists of representatives from the Company, the refinery, government agencies, and community representatives, totaling 36 members. The objectives and responsibilities of this committee include coordinating and overseeing projects to ensure they are environmentally friendly, providing consultation, offering recommendations and solutions to environmental issues and community complaints, reviewing and providing feedback on operational procedures and practices that may impact the environment, and coordinating with various agencies. In 2023, the committee held an official meeting once, lasting for 3 days, with a one-day session for discussions and a two-day off-site study visit. This inaugural event took place in May at the main conference room of the Bangchak Refinery in Chonburi Province.

### “Bangchak Huang Yai Chum Chon” Project

Out of concern for the neighboring communities around the refinery, the Company continues to support efforts to prevent and alleviate issues related to PM 2.5 pollution. This includes distributing 20,000 N95 masks to residents in the communities surrounding the refinery in the Phra Khanong-Bang Na area and in the Bang Nam Pheung sub-district. The masks are also provided to condominium residents, school personnel/students, and government agencies near the refinery to alleviate the impact of PM 2.5 pollution, which tends to occur regularly during the early months of each year.

## The “Green Shelter” Project

The Company, in collaboration with Tetra Pack (Thailand) Company Limited, the Friend in Need (of “PA”) Volunteers Foundation, and 12 partner organizations, participated in collecting and recycling cleaned UHT milk cartons to produce construction materials for homes for those affected by natural disasters and individuals facing housing shortages. The project was conducted at both the corporate social responsibility (CSR) level and the national level, with donation collection points set up at 10 locations in Mini Big C stores at Bangchak service stations, the Company’s office areas, and Bangchak refinery stations. Additionally, community-level activities were organized with schools around Bangchak refinery areas in Phra Khanong district, Bang Na district, and Bang Nam Pheung sub-district, Phra Pradaeng district, Samut Prakan province, involving 11 participating schools under the “Rak Pun Suk Junior” project. Furthermore, 5 schools in the Phra Khanong area joined the project to collect cartons for house construction and the “Rak Pun Suk Junior” project also joined the “Khaya Kamphra Sanchon” project, focusing on waste reduction activities. The project included roadside waste collection to reduce initial waste at schools, with collected waste sent to N15 Technology network partners every two weeks. The waste was then incinerated using appropriate methods as an alternative fuel source instead of coal in cement kilns. The project began at the end of June of the previous year.

Operating Results in 2023: In the fiscal year 2023, which was the first year of the project implementation, milk cartons were collected and recycled 3 times throughout the year. A total of over 474 kilograms of milk cartons were collected and contributed to the project. This initiative helped reduce initial waste and manage waste in line with the principles of the Circular Economy and the BCG Economy policy.

## Educational Aspect



The Company has conducted educational projects based on the importance of and consideration for human rights and equality, particularly in social rights, children’s rights, and the principles outlined in Article 26 of the Universal Declaration of Human Rights. These educational initiatives aimed to promote equal access to education through various projects in the fiscal year 2023.

## “Rak Pun Suk Junior” Project

The Company, in collaboration with SCG’s chemical business and the Bai Mai Pun Suk Foundation, implemented the “Rak Pun Suk Junior” project which focused on waste management and establishing a waste bank, applying the principles of the 3Rs (Reduce, Reuse, Recycle) and the Circular Economy at schools. The project was conducted at both the national level, with selected participating schools from across the country, and the community level, in partnership with schools surrounding the oil refinery area in Phra Khanong District, Bang Na District, and Bang Nam Pheung Sub-district, Phra Pradaeng District, Samut Prakan Province. A total of 11 schools participated in the project.

Operating Results in 2023: The Company conducted school visits to monitor the progress of the initiatives once. Continuous budgetary support was provided for the ongoing projects throughout the year where the monitoring results showed that each school consistently maintained and utilized the learning bases and students were engaged in learning activities aligned with the project objectives and learning bases. Furthermore, the schools effectively implemented activities according to the project guidelines. Many schools showed improved and interesting developments, such as, achieving a 100% student participation rate in learning activities across all school learning bases, expanding learning activities from the bases to classrooms, learning to make DIY Green Cones (composting bins for food waste) independently, promoting waste bank activities to become more mainstream, utilizing online technology for selling products generated from the project, such as milk carton bags and dolls made from milk cartons and encouraging parental involvement. As a result, the waste management aligned with project guidelines has reduced approximately 6,109 kgCO<sub>2</sub>e emissions to date.

### “Eco-School” Project

The Company, in collaboration with the Department of Environmental Quality Promotion, the Phra Khanong District Office, and the Bang Na District Office, implemented the Eco-School project in 11 schools surrounding its refinery facilities. The aim was to promote environmental education for sustainable development (Eco-School) among school administrators, teachers of science and environmental studies, as well as other relevant personnel within the school systems. The project focused on learning how to develop curriculum frameworks and integrate environmental education activities systematically throughout the schools with the following objectives:

- School administrators and teachers can effectively integrate their environmental knowledge into the curriculum and teaching practices.
- The school can continuously develop its staff and students in environmental education in line with government policies and global trends.
- Personnel, students, and the school community can learn, understand, and actively engage with the environment, community, and society sustainably, leading to increased happiness.

Operating Results in 2023: The Company continued its project consistently which it conducted 2 online monitoring sessions to track school progress according to the project plan. Additionally, the Company organized a summary activity and preparatory meeting to explain evaluation criteria and guidelines for certifying Eco-Schools once, aimed at building understanding and readiness for evaluation in 2024. Participating schools continued to develop and implement curriculum, projects, and activities, integrating them into actual teaching practices and assessing outcomes within the education system. This involved the development of 11 curriculum, projects, or activities tailored for the academic year 2023, including direct environmental education curriculum, continuous waste management curriculum, and wastewater management curriculum where several schools made significant progress in various aspects of project implementation and were ready for evaluation. Moreover, there is a trend indicating that they may receive favorable evaluation results, for instance, some schools have adopted project curriculum as institutional curriculum in line with government policies, expanded curriculum to cover additional grade levels, and more.



## Music/Sports Aspect



The Company has implemented projects in music/sports aspect based on the importance and consideration of human rights and equality, including civil rights, cultural rights, children’s rights, the right to a standard of living, and quality of life, as well as the right to participate in cultural activities through various music/sports projects in 2023.

### “Dek Show Ded Festival@Phrakhanong, Bangna” Project

The Company recognizes the importance of children and youth, especially those from schools around oil refinery areas, who should receive care to restore their learning and mental well-being due to abnormal stress and tension from not attending online classes and not having face-to-face communication with teachers and peers as usual. In line with the educational policies of governmental agencies responsible for education, the Company aimed to support schools in conducting activities of this nature in 2023. Consequently, the Company collaborated with local network partners such as large shopping centers including 101 True Digital Park and Megabangna, as well as government offices such as the Phra Khanong District Office and the Bang Na District Office, to provide platforms for students from schools around oil refinery areas to showcase their musical abilities, performances, and cultural talents. This project/activity was held 6 times between June to July and November to December in which 19 schools participated, presenting over 60 musical performances and more than 420 students, teachers, and administrators attended, along with over 1,300 spectators. The participating artists added color and entertainment to the event for students, participants, and attendees.

## Relationship Aspect



### Supporting Various Activities and Events Within the Community

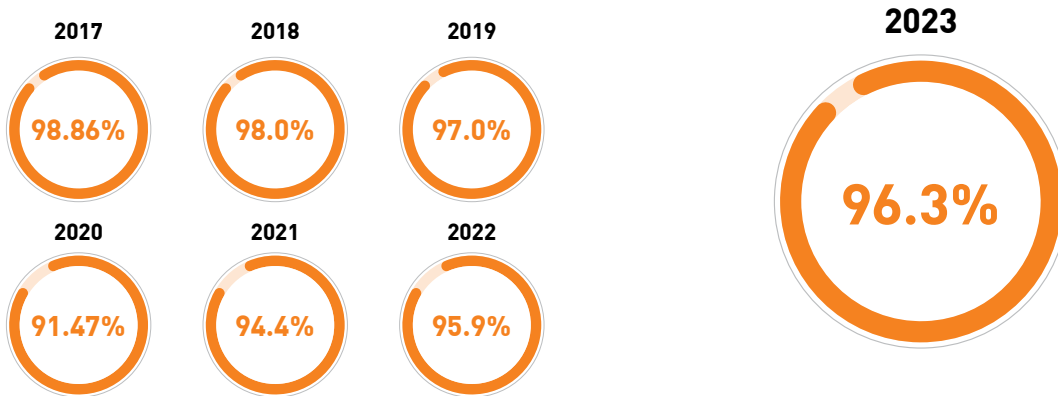
In 2023, the Company consistently supported various beneficial activities and events for the community and schools within the vicinity of the oil refinery. These activities included supporting the renovation and construction of steel structures for fertilizer-making machines, repairing streetlights within the community, and backing safety inspection checkpoints during festivals. Additionally, the Company contributed to the repair of community public building roofs, the upgrading of community multipurpose rooms, and the repair and renovation of community learning centers. Furthermore, the Company supported canal dredging and central area landscape improvement in the market activity area, as well as the upgrading of community/public restrooms at temples and temple kitchens and also assisted in upgrading various community building signs and supporting annual temple merit-making ceremonies in the area. Moreover, the Company supported elderly community club shirts and the renovation of community multipurpose buildings. Further support extended to providing sports equipment for student sports events in Bangkok, supporting the budget for Open House activities, and assisting schools/projects in jointly organizing external activity booths. Lastly, the Company supported sports days, various activities, and important days (such as New Year’s Day and Children’s Day) within schools.

## The total volunteer hours of refinery staff (hours/baht)

2018	2019	2020	2021*	2022	2023
13,460 hours (Equals to THB 4.20 million)	16,088 hours (Equals to THB 4.30 million)	9,001 hours (Equals to THB 2.64 million)	1,762 hours (Equals to THB 0.48 million)	9,375 hours (Equals to THB 2.19 million)	<b>11,296 hours</b> <b>(Equals to THB 2.60 million)</b>

\*Due to the COVID-19 pandemic situation, the Company had to adapt and change the format of its activities.

## Satisfaction With Community Engagement Activities Around the Refinery (Percentage)



## Handling of Complaints

In 2023, there were no widespread or general complaints received. However, the Company and Bangchak Refinery continued to prepare to handle complaints should they arise at any level, following standard procedures and processes. Additionally, efforts were made to prevent incidents and complaints at all levels from occurring in the future or to minimize them as much as possible. The Company is currently planning future preventive measures, including studying the installation of Enclosed Ground Flare systems to efficiently manage excess raw materials during production processes, minimizing environmental impact. Furthermore, one additional system is being considered for installation and operation to further enhance preventive measures. These efforts aim to prevent adverse effects on the community and to increase stability in safe and sustainable operations while remaining community-friendly in the future.

## Ongoing Projects

Aspect	Objective	Ongoing Projects
<b>Safety</b>	<ul style="list-style-type: none"> <li>Confidence in the safety of the refinery.</li> <li>Understanding of the basic safety procedures of the refinery.</li> <li>Possession of personal protective equipment and basic safety gear to address emergencies and various hazards.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted emergency response and fire extinguishing plan training, as well as basic first aid and CPR/AED training for schools/condominiums, Year 19<sup>th</sup>.</li> <li>Established safety inspection teams, Year 5<sup>th</sup>.</li> <li>Provided firefighting equipment and fire extinguishers, Year 19<sup>th</sup>.</li> </ul>
<b>Economy</b>	<ul style="list-style-type: none"> <li>Foster the development of vocational skills, jobs, income generation, and provide opportunities for community members to learn, develop, and utilize knowledge and skills in creating beneficial livelihoods for themselves and their families.</li> <li>Support community products and services, generating income for daily living expenses and supporting family members.</li> <li>Promote financial management and investment knowledge.</li> <li>Encourage and support economic development groupings, community enterprises, and aimed towards developing enterprises for societal advancement.</li> </ul>	<ul style="list-style-type: none"> <li>Community enterprises: Generated additional income, enhanced business capabilities, and supported the formation of additional occupational groups (Community Enterprise Project, Year 8<sup>th</sup>).</li> <li>Bangchak Sarng Rai Dai Su Chum Chon Project (Support products and services from local entrepreneurs to be used in the Company's activities, aiming to distribute income to the community)(Year 19<sup>th</sup>).</li> <li>Bangchak Sarng Ngarn Pun Archeep Project (Support knowledge creation, job creation, and income generation for community members interested in enhancing their livelihoods in the face of economic challenges. This income is utilized in daily life and family support.)</li> <li>Provided opportunities for community restaurants to sell food in the Company's cafeteria without charges, contributing to community income.</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>Promote the awareness of environmental problems and efficient resource use</li> <li>Develop environmental learning and integrating into the education system/learning plan</li> <li>Instill consciousness and good behavior towards the environment</li> <li>Create and prosper waste management, Circular Economy, and BCG Economy</li> </ul>	<ul style="list-style-type: none"> <li>Sen Thang Hing Hoi, The Path of Conservation Project, Year 10<sup>th</sup></li> <li>Our Khung BangKachao Project, Year 6<sup>th</sup></li> <li>Phueng Chan, Bang Nam Phueng Refinery Project, Year 5<sup>th</sup></li> <li>Environmental Learning Schools for Sustainable Development (Eco-Schools) Project, Year 4<sup>th</sup></li> <li>Carton Collection for Home Building Project (Green Shelter), for Friend in Need (of "PA") Volunteers Foundation</li> </ul>
<b>Quality of Life</b>	<ul style="list-style-type: none"> <li>Enhance quality of life, physical health, mental health</li> <li>Support and promote preventive health care</li> </ul>	<ul style="list-style-type: none"> <li>One Family Project, Year 31<sup>st</sup></li> <li>Bangchak Good-Hearted Youth, Year 8<sup>th</sup></li> <li>Bangchak Huang Yai Su Phai COVID-19 Project, Year 4<sup>th</sup></li> <li>Healthy Community Project, annual health check for community neighbors around Bangchak Oil Refinery</li> </ul>
<b>Education</b>	<ul style="list-style-type: none"> <li>Promote youth learning and developing according to age group, instill consciousness to be both good and smart</li> <li>Support the development of teachers, students, executives, and schools in various aspects</li> </ul>	<ul style="list-style-type: none"> <li>Bangchak Youth Scholarship Project, Year 19<sup>th</sup></li> <li>Teacher and School Potential Development Project, Year 19<sup>th</sup></li> <li>Rak Pan Suk Junior Project, Year 2<sup>nd</sup></li> </ul>
<b>Sports</b>	<ul style="list-style-type: none"> <li>Strong youth, good health, refraining from drugs, able to generate income from profession, and having good educational opportunities from playing sports</li> </ul>	<ul style="list-style-type: none"> <li>Bangchak Youth Football Club, Year 16<sup>th</sup></li> </ul>
<b>Relationships and Cultural Heritage Conservation</b>	<ul style="list-style-type: none"> <li>Create commitment and strengthen good relationships between the refinery and nearby residential communities</li> </ul>	<ul style="list-style-type: none"> <li>Khrob Khrua Bai Mai Pamphlet, Year 17<sup>th</sup></li> <li>Phuean Ban Condo Project, Year 11<sup>th</sup></li> <li>Community Home Visit, Year 19<sup>th</sup></li> </ul>

## Future Work Plan for Community Relations

The Company emphasizes participation in community care around the refinery in conjunction with business operations, by continuously supporting or organizing various activities for the community around the refinery and as part of improving the quality of life and living conditions of people in the community. This is done by developing the potential of community leaders, youth, and residents in the community to be self-reliant, have a decent household economic condition, good and stable jobs, sufficient and stable income, good mental health, good relationships and commitment between the community and the refinery like a family, and be able to live together harmoniously while considering and giving importance to human rights and equality in all groups and all dimensions as much as possible

and appropriate. The plans both in 2024 and in the future focus on working in all aspects continuously, coupled with creative thinking and developing good, new, and different things, with the goals to achieve the results that all parties want and be happy together. The Company also helps in supporting a good quality of life, stable income, profession, work, and economy of the community and all neighborhood groups sustainably. For example, supporting preventive health care, developing professions/jobs, community enterprises/social enterprises, etc., while considering human rights and equality in all groups and all dimensions for harmonious coexistence, committed to being friends sustainably and continuously in the future.

### Goals for Community Relations for 2023 - 2027: Bangchak's commitment to the community



## Participation in Social Care

The Bangchak Group attaches importance to maintaining a balance in business operations under **the concept of Greenovate to Regenerate, a balance of nature, endless power, based on maintaining a balance between value and worth**, to maintaining a balance of energy challenges 3 ways (Energy Trilemma) to drive towards a low-carbon society with a goal of achieving net zero greenhouse gas emissions in 2050, as well as maintaining a balance in being an organization filled with ethics that is responsible for the environment, society, and has good corporate governance (ESG) transmitted to the BCP316 NET plan to achieve the Carbon Neutrality goal within 2030 and being an organization that emits net zero greenhouse gases (Net Zero Emission) within 2050, respectively.



Participation in social and environmental care, therefore, carries out projects/activities that respond to the C: Conserving Nature and Society and NET: Net Zero Ecosystem plans to show responsibility that distributes benefits to various stakeholders comprehensively while maintaining sustainability.



### Plan C: Conserving Nature and Society Plan, conserving nature in conjunction with social care

The Bangchak Group has studied the feasibility and risks in the development of natural carbon dioxide absorption and storage sources, both terrestrial and marine systems (C: Conserving Nature and Society), to be used to offset the 10 percent target of the Company's greenhouse gas emissions. Throughout the past year, the Bangchak Group has worked with various partners to learn from practice and study the carbon offset guidelines and related carbon credit certification standards both in domestic and international, to extend the Green & Blue Carbon work that has started since 2020. It was found that the process of developing projects and work in carbon credits is complex, although it links the dimensions of community-social development with participation with various stakeholder groups, but there are still unmanageable risks, both in terms of area, impacts

from El Niño, severe weather conditions. These risks lead to the Bangchak Group to have the idea of diversifying risks in the C: Conserving Nature and Society plan to develop agricultural projects to increase the possibility of responding to organizational goals, from the original 4 formats to 5 formats. The Company expects to spread cooperation and seek opportunities to develop carbon credit projects together in a size suitable for investment, create benefits for the environment and society together, and manage risks together with partners. Projects are being considered as the study and pioneering projects in various areas before a clear goal and plan can be determined in the following year. Currently, the projects cover an area of more than 6,500 rai, and stakeholders of more than 600 households, with details as follows.

Format	Development of Terrestrial Ecosystems (Green Carbon)		Development of Marine Ecosystems (Blue Carbon)		Agriculture
	Afforestation	Community Forest Conservation Planting	Reforestation - Conservation of Coastal Forests	Study of Seagrass Sources	Plant D*
Operating Area	Prachinburi / Chachoengsao	Chiang Mai	Samut Sakhon / Samut Songkhram Ranong / Trat / Chanthaburi	Trat	Chonburi
Total Area (Rai)	2022: 3,172 Rai	2022: 2,650 Rai 2023: 3,500 Rai	2022 : 300 Rai (BCPG) 2023 : 226 Rai (BCP) : 110 Rai (BCPG)	Study Area 22.3 Rai	Pilot 5,000 Rai
Duration (Years)	10 Years	6 Years	20 Years	5 Years	7 Years
Key Partners	Royal Forest Department	Community Forrest Committee and Mae Fah Luang Foundation	Department of Marine and Coastal Resources	Seagrass Conservation Group / Subdistrict Administrative Organization Koh Mak / DASTA / Kasetsart University	<b>Bangchak Cooperative Network to Combat Global Warming</b>
Approach	Plant, Maintain, Conserve, and Restore Forest Areas	Carbon Credit Management in Forests for Community Development in Forest Conservation and Fund Management for Quality of Life Development	Plant, Maintain, Conserve, and Restore Forest Areas	Study the feasibility of utilizing seagrass sources to capture greenhouse gases / Guidelines for restoring seagrass sources	<b>Improve the planting and care process of low carbon perennial crops</b>
Work in 2023	Notify to change the area to be consistent with the purpose of planting	Register a carbon credit project	Approved / Prepare the area	Understand / Transmit the results of the first phase of research to the community	<b>Publicize, open for applications, and define the area boundaries</b>
Plan for 2024	Find opportunities to develop projects with various partners	Register T-VER / Manage Forest Career Fund	Planting and Maintenance Work T-VER registration	Prepare a seagrass nursery in the area and experiment with planting seagrass in potential areas with survival rates	<b>Train farmers, record baseline data, and register a carbon credit project</b>
Project Goals	Increase forest area and ownership of carbon credits	Conserve forests, reduce forest fires from upstream forests, reduce PM 2.5 pollution	Increase forest area and ownership of Carbon credits	Model for sustainable tourism community LOW CARBON DESTINATION	<b>Farmers Care The Earth Increase income Reduce cost for low carbon</b>



## NET ZERO ECOSYSTEM

### Plan Promote NET ZERO ECOSYSTEM in Thai society

The Bangchak Group is aware of the preparation of Thai society towards the goal of Carbon Neutrality by 2050 and NET ZERO by 2065, therefore collaborating with partners to drive the preparation for both internal and external stakeholders to have knowledge, understanding, experience, to create awareness of the management of Thailand's greenhouse gases, carbon mechanisms,

as well as trading systems, tax systems, and carbon credits. These are new matters for Thai society at all levels from individuals, communities, SMEs, and business organizations. In the past year, the Bangchak Group has communicated and created shared experiences in various channels throughout the business value chain as much as possible, as detailed:

• **Creating Awareness**

**Climate Action for Employees:** Significant stakeholders and representatives of the organization’s image. Being a role model and emphasizing the goal of sustainable development SDG13 Climate Action starts with the participation of employees within the organization. The behavior of reducing greenhouse gases is part of the individual performance evaluation (KPIs), continuing for the 2<sup>nd</sup> year in addition to conducting activities for society (CSR Activity) to encourage employees in having good behavior, including reducing single-use plastic, waste sorting, using public transportation, using renewable energy, or reducing electricity use in households. By recording the Climate Action behavior throughout the year, there are more than 500 employees participating in activities continuously, helping reduce greenhouse gases throughout the activity period up to 90 tons of carbon dioxide equivalent, indicating a better trend than the previous year by 28 percent.

**Carbon Markets Club:** An important tool to help support the mission to make Thailand more prepared. This commitment is carried out in collaboration with business partners who co-founded 11 places in 2021, as well as organizational members and other partners. By working continuously and seeing tangible results from providing knowledge, understanding, and exchanging information, there are more than 700 members, both individuals and organizations, buying and selling carbon credits. There is also the platform for calculating greenhouse gas emissions from organizations (Carbon Footprint Tracking for Organization (CFO)), which allows members to try for free. Currently, the work has been expanded in collaboration with various sectors, has a good response, and has made significant progress.

**Carbon Markets Club**



**Cooperative Network to Combat Global Warming:**

Oam Suk Social Enterprise by Bangchak Group leads the project “Cooperative Network to Combat Global Warming” with agricultural cooperatives that operate Bangchak service stations and have operations that need to use electricity during the day by installing solar cells. In addition to reducing costs, it is also a joint development of carbon credit projects from renewable energy of 100 - 700 kilowatts, together with 5 cooperatives, namely, Phimai Agriculture Cooperative Nakhon Ratchasima, Sanpatong Agricultural Cooperative Chiang Mai, Muang Lablue Agricultural Cooperative Uttaradit, Ban-Khaosok Para Rubber Fund Cooperative Chonburi, Benchalak Agricultural Cooperative Sisaket, with an estimated installation of 1.7 megawatts (MW), both in the form of contract installation (EPC) and private electricity sales contract (Private PPA).

**Low-Emission Rice:** is to promote the members of Farmers Care The Earth program from Mega Farm Modern Agriculture Community Enterprise, Doem Bang subdistrict, Doem Bang Nang Buat district, Suphan Buri Province by bringing the low-emission rice products of more than 40 tons to be a sale promotion product at over 130 Bangchak service stations during World Environment Day. The Company also provides knowledge about “Wet alternating dry” rice cultivation method that will help reduce the release of methane, which is one greenhouse gas causing the global warming. It is a connection of experience for the public to know the behavior of choosing products that reduce greenhouse gas emissions, and also helps fellow farmers to be proud of their sustainable production process that cares the world.

#### Koh Mak to the path of LOW CARBON DESTINATION:

To transfer knowledge and extend activities according to the goal “Koh Mak model of low carbon tourism community” (The Green Destination TOP 100 of the World). Bangchak Group has joined with partners to extend the important plan in 3 aspects, namely 1) the Study of the amount of greenhouse gas emissions from key operations 2) Promoting greenhouse gases reduction activities in daily life (waste management, clean energy use, transportation, etc.) 3) and restoration-conservation of terrestrial and marine ecosystems to absorb carbon.

#### Koh Mak to the path of LOW CARBON DESTINATION



1. **Green Entrepreneurs (Accommodation / Restaurants / Shops / Cooking School) (Greenhouse gases calculated from electricity and guidelines for reducing greenhouse gases)**

2023 **11** Places



2. **Greenhouse gases reduction activities (BCG Economy) for entrepreneurs and the public sector (Waste sorting / Green transportation / Renewable energy / Carbon credits from perennial crops)**

2023 **Prepare Baseline**



3. **Study, conservation, restoration of seagrass sources, Koh Mak islands, Koh Kradat**

2023 **22.3** Rai

**Reducing Waste from the Source:** a close and easy-to-start activity beginning with daily waste management to drive the BCG Economy. Bangchak Group collaborates with various partners to facilitate customers and the public in managing various types of waste. Whether it is a waste collection point through the network of service stations, such as the collection point for orphan waste with N15 Technology in 4 key service stations across Bangkok / Habito project (T77) / Bangchak office and refinery. The collection of UHT beverage boxes for recycling in the Green Shelter project with Tetra Pak (Thailand) Co., Ltd., as well as the recycling of used cooking oil to link to the sustainable aviation fuel (SAF) business through the “Fry to Fly” project.

#### Reducing Waste from the Source



1. **Community satisfaction near Bangchak service station towards being an environmental model / waste management / safety**

2022 **80 %**

2023 **79 %**



2. **Waste collection point at the service station / Bangchak office - refinery**

2022 **80** Ton

2023 **162.4** Ton



3. **UHT beverage box collection point at the service station / around the refinery Help reduce greenhouse gases**

2022 **80** Kg. tCO<sub>2</sub>e

2023 **803.34** Kg. tCO<sub>2</sub>e





**Greenovative Forum 13<sup>th</sup> Edition: Regenerative Fuels: Sustainable Mobility** aims to create awareness for society and Bangchak Group. The Company organizes environmental seminars every year on issues that align with global and business trends. This year, the topic of future fuels that will answer sustainable travel is presented. While hydrogen, which is seen as a future option, still takes time, technology, and requires more practical use cases to have competitive prices and costs. Liquid Fuels will be the main form of energy from 2 factors, which are high energy density and transportation convenience. For the aviation sector, Sustainable Aviation Fuel or SAF is an energy option that meets with the sustainable transportation challenge. When the aviation industry sets a Net Zero target in 2050, Bangchak Group has pioneered the production and sale of SAF fuel from used cooking oil. The product produced by SAF production unit at Bangchak Oil Refinery, Phra Khanong, is a fuel that the aviation industry around the world can immediately replace without adversely affecting the engine. In addition, the “Fry to Fly” project is carried out by the Company in collaboration with various partners, both outside and within the chain, to collect used cooking oil through Bangchak service stations/food industry/restaurants/households to return to the production process as much as possible.

- **Creating experiences with personal/event carbon neutral activities**

Carbon Markets Club: in addition to disseminating knowledge through Webinars and various articles, the Company also cooperates and promotes carbon-neutral campaigns at the individual level and through various event types to make it easier to understand. This is to stimulate environmental consciousness and communicate about greenhouse gases for the public at large to understand the principle of calculating greenhouse gas emissions that come from all daily

activities. Bangchak Group has arranged for individual carbon footprint compensation campaign for over 20 executives at the level of Assistant Managing Director and above to be a “Carbon-Free Management Team” since 2022, considering their greenhouse gas emissions from domestic and international traveling. The Company also arrange the carbon footprint compensation campaign for the 3 world-class badminton players from Ban Thong Yod Badminton School “View” Kunlavut Vitidsarn, “May” Ratchanok Intanon, and “Jew” Lalinrat Chaiwan. In addition, various types of events that have a large number of participants, such as the Shareholders’ Annual General Meeting of companies in the Bangchak Group, and annual environmental seminars are also arranged in carbon neutral way. The Company also arranged for additional carbon neutral events by being a co-host of the Olympic running event in Nan, Mukdahan, and Kanchanaburi provinces, organizing the 10<sup>th</sup> Doi Tung Color Event (Palette of Flowers) at the Doi Tung Development Project, Chiang Rai Province, and supporting the Stay for Santa project with The ERWAN Group PCL in 4 hotels to compensate for the carbon footprint of customers staying on December 23, 2023 - January 2, 2567. These together led to Bangchak Group and Carbon Markets Club having compensated for the total carbon footprint released from individuals and events with various partners of more than 3,000 tons of CO<sub>2</sub> equivalent.

- **Developing Low Carbon Business (Platform for Growth)**

The development of the Platform for Growth for sustainability reflects that every growth of the Bangchak Group continues to maintain the balance of value and quality while also maintaining the access energy stability, which goes hand in hand with driving towards a low carbon society to achieve the goal of net zero greenhouse gas emissions in 2050. The solid foundation created by synergies among various businesses not only help increase production efficiency, reduce costs, and create economic value, but it also enhances value to society and the environment, delivering a good experience to consumers, communities, and society to use environmentally friendly products and services. This aligns with the organizational and national goals of aiming for net zero greenhouse gas emissions at various stages. For example:

- Bangkok Fuel Pipeline and Logistics Co., Ltd. (BFPL): The business manages the transportation of fuel by truck and boat, pipelines and logistics both domestically and internationally. Efficient full-cycle transportation management helps reduce greenhouse gas emissions from product oil transportation.
- BSGF Co., Ltd.: The business produces sustainable aviation fuel or SAF from used cooking oil. Sustainable Aviation Fuel or SAF is the energy alternative that will answer sustainable transportation.
- Winnonie Co., Ltd.: The business provides leasing service for electric motorcycles and aims to be a leader in providing Battery as a Service (BaaS) platform. Currently, Winnonie has 1,050 accumulated lessees and 120 battery swap stations, which provide over THB 41 million/year of cost saving and 2,000 tons of accumulated CO<sub>2</sub> equivalent of greenhouse gas emission reduction to lessees during the rides (compared to refueling).

## Education Work

Bai Mai Pun Suk Foundation develops educational activities in collaboration with partners to develop youth in both education and environment aspects. An important project for reading and writing development is the “Model Read & Write with Ease” Program to respond to the SDG4: Quality Education goal. The program provides training to grade 1 teachers and develop students to be able to read and write

and develop into “Model Schools and Model Teachers in the Project”. In addition, there are environmental and circular energy projects, namely the “Rak Pun Suk Junior” project and the “Solar Pan Suk” project, to instill consciousness and good behavior in the environment in line with sustainable development SDG13: Climate Action and SDG7 Affordable Energy as well as national policy according to the BCG Economy model from the 3 major projects. These projects aim to help Thai children to be able to read and write, provide access to alternative energy, and have waste sorting consciousness. The programs promoted waste sorting activities in 17 schools. The amount of greenhouse gases reduction, certified by the LESS project of the Greenhouse Gas Management Organization, resulted in more than 41 tons of CO<sub>2</sub> equivalent reduction, covering more than 15,000 youths from almost 212 schools in 56 provinces nationwide.



**Table showing the percentage and proportion of expenses in business activities and processes that respond to society:**

Type of Philanthropy Activities	2022 Percentage of Total Costs	2023 Percentage of Total Costs
Public donation	2.83	<b>2.27</b>
Social investment	11.72	<b>29.55</b>
Business processes that respond to society	85.45	<b>68.18</b>

Type of Contribution	2022 Total amount in THB Million	2023 Total amount in THB Million
• Money	214.6	196.5
• Volunteer time of employees	2.1 (9,375 hours)	2.6 (11,296 hours)
• Various items / organizational products	4.4	14.2
• Management	14.7	17.7
<b>Total</b>	<b>235.8</b>	<b>231.0</b>

## Future plans for participation in social and environmental care

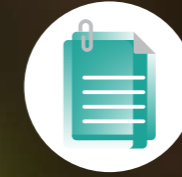
With the BCP316 NET plan, there are various social projects being held, with importance being given to greenhouse gases reduction and sequestration in the value chain of the Bangchak Group with all stakeholders. The Bangchak group seeks for further opportunities to develop carbon credit projects from the energy, forestry, and agriculture sectors in various standards in collaboration with partners.

## Energy Security and Accessibility

Bangchak Corporation Public Company Limited prioritizes balancing business operations under the Greenovate to Regenerate concept. This foundation is built on maintaining a balance between values and creation of shared value, ultimately leading to addressing the three key energy challenges (Energy Trilemma) to propel the Company towards a low-carbon society with a net-zero greenhouse gas emission target by 2050. Additionally, BCP prioritizes being an ethical organization accountable to the environment, society, and good corporate governance (ESG). This commitment translates into the BCP316NET plan to achieve carbon neutrality by 2030 and ultimately become a net-zero emission organization by 2050.

Focusing on energy security, the Company strengthens its capabilities in finished oil product production and refinery business by integrating synergies and developing a Platform for Growth for sustainability. This includes two world-class complex refineries with a combined production capacity of 294,000 barrels per day. Furthermore, the Company also emphasizes businesses from natural resources, and also developing the exploration and production of petroleum and new businesses to ensure energy security for the country.

In terms of energy accessibility, the Company delivers quality, environmentally friendly products, and excellent services to customers through 2,219 service stations nationwide. The Company remains focused on developing and improving its products and services, always prioritizing customer needs to ensure convenience and easy access to energy. Finally, in terms of sustainability, the Company upholds its commitment to being a leading Thai energy company that operates alongside environmental and social care, while contributing to the development of a better life for Thai society. The Company has a clear goal of driving towards a low-carbon society and has further emphasized its leadership in energy transition towards a low-carbon society by investing in the production and distribution of sustainable aviation fuel (SAF) from used cooking oil. SAF is a fuel that can be used immediately, as it is adopted in the global aviation industry without affecting engines, making it the first and only “low-carbon jet fuel” production from used cooking oil in Thailand and the second in Asia. To achieve growth and development in the leading energy business, the Company operates according to its policies based on balancing all three aspects mentioned above.



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# Sustainability Performance Statistics

## Governance and Economic Performance

Revenue						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 201-1	Revenue from sales and service <sup>1</sup>	million THB	136,450.29	199,417.00	328,017.36	385,853.02
	Total revenue <sup>1</sup>	million THB	136,982.82	200,695.74	329,871.06	388,632.44
	Net Profit	million THB	(5,769.98)	9,844.72	15,152.48	11,908.38
	EBITDA	million THB	4,104.00	25,818.00	44,724.00	41,680.00

Expenditure for income distribution to stakeholders						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 201-1	Operating expenses <sup>1</sup>	million THB	132,122.13	175,744.43	281,748.69	352,114.90
	Interest expenses paid to financial institution creditors and debentures	million THB	2,050.58	2,395.39	2,975.74	3,947.09
	Tax payment to government and local authorities	million THB	20.44	20.13	1,229.97	1,837.11
	Financial supports for membership of associations	million THB	5.35	2.72	3.20	3.73
	Community and social development	million THB	21.67	27.74	25.68	68.36
	Donation to society and schools	million THB	22.62	16.00	6.20	5.24
	Dividend payment to shareholders	million THB	742.55	2,672.18	4,260.85	3,208.98
		THB/share	0.40	2.00	2.25	1.50
	Wages and employee benefits	million THB	3,401.92	4,572.62	6,302.61	8,464.76

**Remarks:**

1. The subsidy from oil fuel fund has been categorized within the Revenue from sales and service since 2022.

Supply chain management						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 204-1	Local purchases of goods and services <sup>1</sup>	million THB	1,846	1,814	5,688	3,838
	Percentage of local purchases of goods and services <sup>1</sup>	%	97	98	93	92

Remarks:

1. Purchasing of non-hydrocarbon goods and services in Thailand.

Compliance with laws and regulations						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 417-3	Incidents of non-compliance regarding marketing communications					
	Significant case of customers data breach	case	0	0	0	0
	Significant case of non-compliance in marketing communication laws	case	0	0	0	0
GRI 2-27	Incidents of non-compliance with laws and regulations in the social, economic, and environmental areas					
	Significant case associated with economic and social law violation	case	0	0	0	0
	Significant case associated with environment law violation	case	0	0	0	0







Energy Consumption						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 302-1	Net energy consumption within the organization (non-renewable energy + renewable Energy - energy sold)					
	Net energy consumption of Refinery Business and Office building and Region Business Centers	TJ	12,845.84	12,241.19	13,687.68	13,647.46
		MWh	3,568,287.62	3,400,330.02	3,802,162.54	3,790,992.60
	Net energy consumption of Refinery Business, Office building and Region Business Centers, and Marketing Business	TJ	12,942.24	12,332.30	13,753.21	13,708.36
		MWh	3,595,066.35	3,425,640.03	3,820,253.81	3,807,909.34
	Net energy consumption of Refinery Business, Office building and Region Business Centers, Marketing Business, Bangkok Fuel Pipeline and Logistics (BFPL), and BCP Trading (BCPT)	TJ				13,749.84
		MWh				3,819,431.81

**Remarks:**

- The Refinery Business consists of Bangchak Phra Khanong Refinery and Oil Depot at Sukhumvit 64, Oil Depot at Bang Pa Inn, Oil Depot at Surat Thani, and offices at the refinery area.
- The Marketing Business consists of Bangchak Green Net Co., Ltd. and Bangchak Retail Co., Ltd.
- Office building and Region Business Center consists of the main office building (M Tower), the Central Region Business Center, the Northeastern Region Business Center, the Northern Region Business Center, and the Southern Region Business Center.
- The reporting boundary of energy consumption has been expanded to Bangkok Fuel Pipeline Transportation and Logistics (BFPL) and BCP Trading (BCPT) in 2023.
- Conversion of fuel to energy by applying heating value provided by the Department of Alternative Energy Development and Efficiency.
- Transporting finished petroleum products is included in the refinery business's downstream transportation and distribution, excluding heavy fuel oil and lubricant transportation.
- N/A means not applicable.

GHG emissions scope 1 & scope 2																		
Business unit			Refinery Business <sup>1</sup>				Bangkok Fuel Pipeline and Logistics (BFPL) <sup>4</sup>	BCP Trading (BCPT) <sup>4</sup>	Marketing Business <sup>2</sup>				Office building and Region Business Centers <sup>3</sup>					
Indicator	Material Aspect	Unit	2020	2021	2022	2023	2023	2023	2020	2021	2022	2023	2020	2021	2022	2023		
GRI305-1	Total direct GHG emission (Scope 1)																	
	Reporting according to operational control approach	Total direct GHG emission (Scope 1)	tCO <sub>2</sub> e	885,906.72	821,155.65	930,897.27	940,428.34	-	-	507.98	493.41	738.50	730.53	-	478.63	484.69	419.44	
		• CO <sub>2</sub>	tCO <sub>2</sub> e	883,796.95	819,065.76	928,384.04	938,073.49	-	-	499.21	485.38	572.33	559.60	-	468.15	475.33	411.61	
		• CH <sub>4</sub> and fugitive CH <sub>4</sub>	tCO <sub>2</sub> e	1,723.01	1,766.10	2,045.70	1,992.96	-	-	0.80	103.34	160.49	62.38	-	0.82	0.71	0.66	
			tonne	57.43	58.87	68.19	66.43	-	-	0.03	3.44	5.80	2.23	-	0.03	0.03	0.02	
		• CH <sub>4</sub>	tCO <sub>2</sub> e	387.41	369.00	413.10	412.18	-	-	0.80	103.34	160.49	0.90	-	0.82	0.71	0.66	
			tonne	12.91	12.30	13.77	13.74	-	-	0.03	3.44	5.80	0.03	-	0.03	0.03	0.02	
		• Fugitive CH <sub>4</sub>	tCO <sub>2</sub> e	1,335.60	1,397.10	1,632.60	1,580.77	-	-	-	-	-	61.49	-	-	-	-	
			tonne	44.52	46.57	54.42	52.69	-	-	-	-	-	2.20	-	-	-	-	
		• N <sub>2</sub> O	tCO <sub>2</sub> e	386.66	323.76	361.76	360.59	-	-	8.58	8.04	11.39	9.27	-	9.80	8.44	7.08	
		• Hydrofluorocarbon (HFC)	tCO <sub>2</sub> e	-	-	105.76	1.29	-	-	-	-	154.78	99.13	-	-	-	-	
		• Other biogenic (CH <sub>4</sub> and N <sub>2</sub> O)	tCO <sub>2</sub> e	0.10	0.02	0.01	0.02	-	-	0.19	-	-	0.14	-	-	0.17	0.09	
		Direct GHG emission (separately reporting)		tCO <sub>2</sub> e	28.04	5.39	3.80	166.00	-	-	53.61	90.71	102.13	123.19	-	64.76	48.52	26.98
		• Biogenic CO <sub>2</sub>	tCO <sub>2</sub> e	28.04	5.39	3.80	4.50	-	-	53.61	90.71	102.13	41.52	-	64.76	48.52	26.98	
• CO <sub>2</sub> of R-22 refrigerant	tCO <sub>2</sub> e	-	-	-	161.50	-	-	-	-	-	81.66	-	-	-	-			



GHG emissions scope 1 & scope 2																	
Business unit			Refinery Business <sup>1</sup>				Bangkok Fuel Pipeline and Logistics (BFPL) <sup>4</sup>	BCP Trading (BCPT) <sup>4</sup>	Marketing Business <sup>2</sup>				Office building and Region Business Centers <sup>3</sup>				
Indicator	Material Aspect	Unit	2020	2021	2022	2023	2023	2023	2020	2021	2022	2023	2020	2021	2022	2023	
GRI305-1	Total direct GHG emission (Scope 1)																
	Total direct GHG emission (Scope 1)		tCO <sub>2</sub> e	885,906.72	821,155.65	930,897.27	940,428.34	-	-	509.72	580.53	480.44	473.72	-	478.63	484.69	419.44
	• CO <sub>2</sub>		tCO <sub>2</sub> e	883,796.95	819,065.76	928,384.04	938,073.49	-	-	499.21	485.38	318.87	332.76	-	468.15	475.33	411.61
	• CH <sub>4</sub> and fugitive CH <sub>4</sub>		tCO <sub>2</sub> e	1,723.01	1,766.10	2,045.70	1,992.96	-	-	0.67	86.12	80.03	35.93	-	0.68	0.71	0.66
			tonne	57.43	58.87	68.19	66.43	-	-	0.03	3.44	2.93	1.28	-	0.03	0.03	0.02
	• CH <sub>4</sub>		tCO <sub>2</sub> e	387.41	369.00	413.10	412.18	-	-	0.67	86.12	80.03	0.54	-	0.68	0.71	0.66
			tonne	12.91	12.30	13.77	13.74	-	-	0.03	3.44	2.93	0.02	-	0.03	0.03	0.02
	• Fugitive CH <sub>4</sub>		tCO <sub>2</sub> e	1,335.60	1,397.10	1,632.60	1,580.77	-	-	-	-	-	35.39	-	-	-	-
			tonne	44.52	46.57	54.42	52.69	-	-	-	-	-	1.26	-	-	-	-
	• N <sub>2</sub> O		tCO <sub>2</sub> e	386.66	323.76	361.76	360.59	-	-	9.65	9.04	6.73	5.80	-	9.80	8.44	7.08
	• Hydrofluorocarbon (HFC)		tCO <sub>2</sub> e	-	-	105.76	1.29	-	-	-	-	154.78	99.13	-	-	-	-
	• Other biogenic (CH <sub>4</sub> and N <sub>2</sub> O)		tCO <sub>2</sub> e	0.10	0.02	0.01	0.02	-	-	0.19	-	0.07	0.10	-	-	0.17	0.09
	Direct GHG emission (separately reporting)		tCO <sub>2</sub> e	28.04	5.39	3.80	166.00	-	-	26.27	44.45	50.04	75.24	-	64.76	48.52	26.98
	• Biogenic CO <sub>2</sub>		tCO <sub>2</sub> e	28.04	5.39	3.80	4.50	-	-	26.27	44.45	50.04	29.48	-	64.76	48.52	26.98
• CO <sub>2</sub> of R-22 refrigerant		tCO <sub>2</sub> e	-	-	-	161.50	-	-	-	-	-	45.76	-	-	-	-	
GRI305-2	Total Indirect GHG emission (Scope 2)																
	Total Indirect GHG emission (Scope 2)		tCO <sub>2</sub> e	6,845.13	5,923.19	5,110.71	6,274.75	5,148.38	1.86	11,927.39	11,609.19	4,890.31	4,072.81	-	591.33	733.23	800.19
	Total Indirect GHG emission (Scope 2) (Location-based)		tCO <sub>2</sub> e	6,845.13	5,923.19	5,110.71	6,274.75	5,148.38	1.86	11,927.39	11,609.19	4,890.31	4,072.81	-	591.33	733.23	800.19
	• CO <sub>2</sub>		tCO <sub>2</sub> e	6,845.13	5,923.19	5,110.71	6,274.75	5,148.38	1.86	11,927.39	11,501.83	4,890.31	4,072.81	-	585.86	733.23	800.19
	• Biogenic CO <sub>2</sub>		tCO <sub>2</sub> e	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	• CH <sub>4</sub>		tCO <sub>2</sub> e	-	-	-	-	-	-	-	35.41	-	-	-	1.80	-	-
	• N <sub>2</sub> O		tCO <sub>2</sub> e	-	-	-	-	-	-	-	71.95	-	-	-	3.67	-	-
	• Other biogenic (CH <sub>4</sub> and N <sub>2</sub> O)		tCO <sub>2</sub> e	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Indirect GHG emission (Scope 2) (Market-based)		tCO <sub>2</sub> e	6,845.13	5,923.19	5,110.71	6,274.75	5,148.38	1.86	11,927.39	11,609.19	4,890.31	4,072.81	-	591.33	733.23	800.19
	• CO <sub>2</sub>		tCO <sub>2</sub> e	6,845.13	5,923.19	5,110.71	6,274.75	5,148.38	1.86	11,927.39	11,501.83	4,890.31	4,072.81	-	585.86	733.23	800.19
	• Biogenic CO <sub>2</sub>		tCO <sub>2</sub> e	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	• Other biogenic (CH <sub>4</sub> and N <sub>2</sub> O)		tCO <sub>2</sub> e	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GRI305-1 and GRI305-2	Total GHG emission (Scope 1 and 2)	tCO <sub>2</sub> e	892,751.85	827,078.83	936,007.98	946,703.10	5,148.38	1.86	12,437.11	12,189.72	5,370.75	4,546.53	-	1,069.96	1,217.91	1,219.63



**Remarks:**

- The Refinery Business consists of Bangchak Phra Khanong Refinery and Oil Depot at Sukhumvit 64, Oil Depot at Bang Pa Inn, Oil Depot at Surat Thani, and offices at the refinery area.
- The Marketing Business consists of Bangchak Green Net Co., Ltd. and Bangchak Retail Co., Ltd.
- Office building and Region Business Center consists of the main office building (M Tower), the Central Region Business Center, the Northeastern Region Business Center, the Northern Region Business Center, and the Southern Region Business Center.
- The reporting boundary of GHG emissions has been expanded to Bangkok Fuel Pipeline Transportation and Logistics (BFPL) and BCP Trading (BCPT) in 2023.
- Bangchak Corporation Public Company Limited (Refinery Business, M-Tower and Region Business Centers, and Marketing Business) firstly disclosed GHG emission scope 3 in 2021.
- The reporting boundary of scope 3 emissions has been expanded to crude oil purchasing and business travel activities in 2023. The GHG calculation of business travelling based on the ICAO Carbon Emissions Calculator (ICEC) principle.
- The report of scope 1, 2, and 3 emissions data are calculated by using the BCP GHG calculation tool following IPCC 2006.
- The emission factors from IPCC 2006 and API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry 2009 are used for scope 1 emissions calculation.
- The emission factors from Energy Policy and Planning Office, Ministry of Energy, Thailand (EPPO) are used for scope 2 emissions calculation.
- The emission factors from Thailand Greenhouse Gas Management Organization (TGO), IPCC, and Thai National LCI Database are used for scope 3 emissions calculation.
- Greenhouse gas emissions intensity is calculated from scope 1 and 2 emissions.
- GHG emissions reductions are calculated based on energy saving activities carried out in 2023.
- Conversion of fuel to energy by applying heating value provided by the Department of Alternative Energy Development and Efficiency.
- Global Warming Potential (GWP) values are based on the Fifth Assessment Report (AR5) of the Greenhouse Gas Protocol.
- Transporting finished petroleum products is included in the refinery business's downstream transportation and distribution, excluding heavy fuel oil and lubricant transportation.
- The gases included in the green house gas calculation are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFC.
- N/A means not applicable.

Water Management <sup>1</sup>										
Business unit			Refinery Business <sup>2</sup> and office building <sup>3</sup>			Refinery Business <sup>2</sup>	BCP Trading (BCPT)	Marketing Business <sup>5</sup>	Office building and Region Business Centers <sup>4</sup>	
Indicator	Material Aspect	Unit	2020	2021	2022	2023				
GRI 303-3 (2018)	<b>Total water withdrawal</b>									
	<b>Total water withdrawal (excluding brine water from crude oil extraction)</b>		million cubic meter	2.495	2.411	2.344	2.792	0.082	0.507	0.003
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids		million cubic meter	2.395	2.294	2.334	2.710	0.082	0.507	0.003
	• Other water > 1000 mg/L Total Dissolved Solids		million cubic meter	0.100	0.117	0.010	0.082	-	-	-
	<b>Total water withdrawal (including brine water from crude oil extraction)</b>		million cubic meter	21.325	2.444	2.383	2.803	0.082	0.507	0.003
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids		million cubic meter	2.395	2.294	2.334	2.710	0.082	0.507	0.003
	• Other water > 1000 mg/L Total Dissolved Solids		million cubic meter	18.930	0.150	0.049	0.093	-	-	-
	<b>Total water withdrawal by source<sup>7</sup></b>									
	<b>Surface water<sup>8</sup></b>		million cubic meter	0.185	0.197	0.147	0.165	-	-	-
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids <sup>8</sup>		million cubic meter	0.085	0.080	0.136	0.083	-	-	-
	• Other water > 1000 mg/L Total Dissolved Solids <sup>8</sup>		million cubic meter	0.100	0.117	0.010	0.082	-	-	-
	<b>Groundwater<sup>9</sup></b>		million cubic meter	0.270	0.112	0.440	0.020	-	0.062	0.000
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids <sup>9</sup>		million cubic meter	0.270	0.112	0.440	0.020	-	0.062	0.000
	• Other water > 1000 mg/L Total Dissolved Solids <sup>9</sup>		million cubic meter	-	-	-	-	-	-	-
	<b>Produced water<sup>10</sup></b>		million cubic meter	18.830	0.033	0.039	0.011	-	-	-
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids <sup>10</sup>		million cubic meter	-	-	-	-	-	-	-
	• Other water > 1000 mg/L Total Dissolved Solids <sup>10</sup>		million cubic meter	18.830	0.033	0.039	0.011	-	-	-
	<b>Third-party water<sup>11</sup></b>		million cubic meter	2.040	2.101	1.757	2.608	0.082	0.445	0.003
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids <sup>11</sup>		million cubic meter	2.040	2.101	1.757	2.608	0.082	0.445	0.003
	• Other water > 1000 mg/L Total Dissolved Solids <sup>11</sup>		million cubic meter	-	-	-	-	-	-	-
<b>Third-party water withdrawal by source<sup>12</sup></b>										
• Surface water		million cubic meter	2.040	2.101	1.757	2.608	0.082	0.445	0.003	

Water Management <sup>1</sup>									
Business unit			Refinery Business <sup>2</sup> and office building <sup>3</sup>			Refinery Business <sup>2</sup>	BCP Trading (BCPT)	Marketing Business <sup>5</sup>	Office building and Region Business Centers <sup>4</sup>
Indicator	Material Aspect	Unit	2020	2021	2022	2023			
GRI 303-3 (2018)	Total water withdrawal in water stressed areas								
	Total water withdrawal in water stressed areas	million cubic meter	-	-	-	-	-	0.258	-
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids	million cubic meter	-	-	-	-	-	0.258	-
	• Other water > 1000 mg/L Total Dissolved Solids	million cubic meter	-	-	-	-	-	-	-
	Total water withdrawal in water stressed areas by source <sup>13</sup>								
	Groundwater	million cubic meter	-	-	-	-	-	0.029	-
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids	million cubic meter	-	-	-	-	-	0.029	-
	• Other water > 1000 mg/L Total Dissolved Solids	million cubic meter	-	-	-	-	-	-	-
	Third-party water	million cubic meter	-	-	-	-	-	0.229	-
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids	million cubic meter	-	-	-	-	-	0.229	-
	• Other water > 1000 mg/L Total Dissolved Solids	million cubic meter	-	-	-	-	-	-	-
	Third-party water withdrawal in water stressed areas by source <sup>12</sup>								
• Surface water	million cubic meter	-	-	-	-	-	0.229	-	
GRI 303-4 (2018)	Total water discharge								
	Total water discharge	million cubic meter	0.727	0.828	0.899	0.945	0.000	0.405	0.003
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids <sup>14</sup>	million cubic meter	0.176	0.207	0.103	0.480	0.000	0.405	0.003
	• Other water > 1000 mg/L Total Dissolved Solids <sup>14</sup>	million cubic meter	0.552	0.621	0.796	0.465	-	-	-
	Total water discharge by destination <sup>15</sup>								
	• Surface water	million cubic meter	0.725	0.827	0.897	0.945	-	0.078	-
	• Third-party water	million cubic meter	0.002	0.001	0.002	-	0.000	0.328	0.003
	Total water discharge in water stressed areas								
	Total water discharge in water stressed areas	million cubic meter	-	-	-	-	-	0.206	-
	• Freshwater ≤ 1000 mg/L Total Dissolved Solids	million cubic meter	-	-	-	-	-	0.206	-
• Other water > 1000 mg/L Total Dissolved Solids	million cubic meter	-	-	-	-	-	-	-	
GRI 303-5 (2018)	Total water consumption (excluding brine water from crude oil extraction) = total water withdrawal (excluding brine water from crude oil extraction) - total water discharge								
	Total water consumption (excluding brine water from crude oil extraction)	million cubic meter	1.768	1.582	1.445	1.847	0.082	0.101	0.001
	Total water consumption in water stressed areas	million cubic meter	-	-	-	-	-	0.052	-
	Change in water storage, if water storage has been identified as having a significant water-related impact	million cubic meter	-	-	-	-	-	-	-

Water Management														
Business unit			Refinery Business <sup>2</sup>	Office building <sup>3</sup>	Refinery Business <sup>2</sup>	Office building <sup>3</sup>	Refinery Business <sup>2</sup>	Office building <sup>3</sup>	Refinery Business <sup>2</sup>	BCP Trading (BCPT)	Marketing Business <sup>5</sup>		Office building and Region Business Centers <sup>4</sup>	
											Bangchak Green Net (BGN)	Bangchak Retail (BCR)	M Tower	Region Business Centers
Indicator	Material Aspect	Unit	2563		2564		2565		2566					
GRI 303-4-d (2018)	Waste water quality													
	COD	tonne	33.22	N/A	28.98	N/A	33.53	N/A	38.12	0.00	57.20	3.06	N/A	0.03
	BOD	tonne	6.53	0.01	4.85	0.00	5.76	0.00	6.60	0.00	18.85	1.01	0.01	0.01
	Oil and Grease	tonne	2.17	0.00	2.48	0.00	2.69	0.00	2.83	0.00	2.44	0.13	0.00	0.00
	TSS	tonne	4.54	0.02	4.87	0.02	5.63	0.02	8.31	0.00	8.46	0.45	0.03	0.00
	TDS	tonne	973.23	0.55	1,100.98	0.28	1,273.38	0.32	998.89	0.01	270.81	14.47	0.71	0.13
	Sulfide	tonne	0.09	0.00	0.26	0.00	0.45	0.00	0.47	0.00	N/A	N/A	0.00	N/A
	Mercury	tonne	0.00	N/A	0.00	N/A	0.00	N/A	0.00	0.00	N/A	N/A	N/A	N/A

**Remarks:**

- In 2020-2022, the amount of water withdrawal, water discharge, and water consumption of Bangchak Phra Khanong Refinery and Oil Depot at Sukhumvit 64 and M Tower were reported. In 2023, the reporting scope has been expanded to the Regional Business Centers, the Marketing Business, and BCP Trading (BCPT).
- The Refinery Business consists of Bangchak Phra Khanong Refinery and Oil Depot at Sukhumvit 64, and offices at the refinery area.
- Office building consists of the main office building (M Tower).
- Office building and Region Business Center consists of the main office building (M Tower), the Central Region Business Center, the Northeastern Region Business Center, the Northern
- The Marketing Business consists of Bangchak Green Net Co., Ltd. and Bangchak Retail Co., Ltd.
- Characteristics of water is collected from analysis result from 3<sup>rd</sup> party laboratory which is licensed by department of Industry work.
- No seawater withdrawal.
- The volume of total surface water withdrawal at the Refinery Business is collected from pump capacity or tank volume.
- The volume of total groundwater withdrawal is collected from meter reading.
- The volume of total produced water withdrawal from crude oil extraction, processing, or raw material is calculated from the ratio of oil and brine.
- The volume of total 3<sup>rd</sup> party water withdrawal is collected from invoices.
- The 3<sup>rd</sup> party water of all areas is withdrawn from the surface water source.
- The water in water stressed areas is withdrawn from groundwater and 3<sup>rd</sup> party water sources.
- The total amount of water discharge was collected from the water flow meter readings and calculation of wastewater treatment system design.
- No water discharge to groundwater and seawater sources.

**Air Emission at the Refinery Business unit**

Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 305-7	<b>Nitrogen oxides (NO<sub>x</sub>)<sup>1</sup></b>					
	NO <sub>x</sub> (combustion)	tonne	280.00	458.88	506.11	526.79
	Control limit (not exceed)	tonne	1,000.00	1,000.00	1,000.00	1,000.00
	Intensity of NO <sub>x</sub>	tonne/ thousand tonne of crude oil	0.060	0.099	0.087	0.092
	<b>Sulfur dioxide (SO<sub>2</sub>)<sup>1</sup></b>					
	SO <sub>2</sub> (combustion)	tonne	27.00	53.48	45.25	38.95
	Control limit (not exceed)	tonne	1,000.00	1,000.00	1,000.00	1,000.00
	Intensity of SO <sub>2</sub>	tonne/ thousand tonne of crude oil	0.010	0.012	0.008	0.007
	<b>Total Suspended Particulate (TSP)<sup>1</sup></b>					
	TSP PM10 (combustion)	tonne	3.00	3.50	7.54	15.35
	Control limit (not exceed)	tonne	200.00	200.00	200.00	200.00
	Intensity of TSP	tonne/ thousand tonne of crude oil	0.002	0.001	0.001	0.003
	<b>Hydrogen sulfide (H<sub>2</sub>S)<sup>1</sup></b>					
	H <sub>2</sub> S (SRU/TGTU Stack)	tonne	4.00	4.37	2.22	6.62
	Control limit (not exceed)	tonne	20.00	20.00	20.00	20.00
	Intensity of H <sub>2</sub> S	tonne/ thousand tonne of crude oil	0.000	0.001	0.000	0.001
	<b>Volatile Organic Compound (VOCs)<sup>2,3,4</sup></b>					
	VOCs inventory <sup>2,3</sup>	tonne	417.61	341.47	480.21	356.50
	Fugitive VOCs <sup>4</sup>	tonne	2.51	2.53	2.99	2.90
	Control limit (not exceed)	tonne		500.00	500.00	500.00
	Intensity of fugitive VOCs	tonne/ thousand tonne of crude oil	0.002	0.001	0.001	0.001
	<b>Flared hydrocarbon<sup>5</sup></b>					
	Flared hydrocarbon	kL	1,174.30	2,311.28	1,327.24	814.94
		Nm <sup>3</sup>	0.17	0.57	0.27	0.22
	Flared hydrocarbon per total product produced	Nm <sup>3</sup> /million barrel oil equivalent	0.002	0.015	0.003	0.003
	<b>Vented hydrocarbon</b>					
	Vented hydrocarbon	Nm <sup>3</sup>	N.A.	N.A.	N.A.	N.A.
	Vented hydrocarbon per total product produced	Nm <sup>3</sup> /million barrel oil equivalent	N.A.	N.A.	N.A.	N.A.

**Remarks:**

1. Calculated from production capacity using a third-party entity.
2. Include VOC Inventory from combustion, flare, tank, marketing and terminal, and wastewater.
3. Use emission factors from AP 42-US EPA, for VOC inventory calculation from combustion, flare, and marketing and terminal. Tank 4 program and Water 9 program are used as tools for VOC inventory calculation from tank and wastewater respectively.
4. Calibrated measurement tools
5. Include flared hydrocarbon from Plant 2, 3, 4.



Industrial Waste Management at the Bangchak Phra Khanong Refinery						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI306-3	<b>Total waste generated by category</b>					
	<b>Total waste generated</b>	tonne/year	3,157.79	2,940.80	1,729.64	12,723.76
	• Total hazardous waste	tonne/year	2,676.61	2,618.73	1,584.44	3,435.37
	• Total non-hazardous waste	tonne/year	484.66	322.07	145.20	9,288.39
	<b>Total waste generated by activity</b>					
	<b>Routine waste</b>	tonne/year	3,059.00	1,681.67	1,102.96	911.65
	• Hazardous waste <sup>1</sup>	tonne/year	2,671.00	1,414.61	957.76	821.86
		percentage	84.58	48.10	55.37	6.46
	• Non-hazardous waste <sup>1</sup>	tonne/year	388.00	267.06	145.20	89.79
		percentage	12.29	9.08	8.39	0.71
	<b>Non-routine waste</b>	tonne/year	98.79	1,259.13	626.68	11,812.12
	• Hazardous waste from non-routine activity	tonne/year	-	-	626.68	153.42
		percentage	-	-	36.23	1.21
	• Non-hazardous waste from non-routine activity	tonne/year	-	-	-	10.89
		percentage	-	-	-	0.09
	• Hazardous waste from oil and chemical spill clean-up	tonne/year	-	-	-	1,924.76
		percentage	-	-	-	15.13
	• Hazardous waste from construction activities <sup>2</sup>	tonne/year	-	-	-	535.34
		percentage	-	-	-	4.21
	• Non-hazardous waste from construction activities <sup>2</sup>	tonne/year	97.00	-	-	9,187.71
percentage		3.07	-	-	72.21	
• Hazardous waste for Turnaround Maintenance <sup>2</sup>	tonne/year	1.77	1,204.12	-	-	
	percentage	0.06	40.95	-	-	
• Non-hazardous waste for Turnaround Maintenance <sup>2</sup>	tonne/year	0.02	55.01	-	-	
	percentage	0.00	1.87	-	-	
BCP Indicators	<b>Industrial waste diverted from landfilling</b>	percentage	100.00	100.00	100.00	100.00
	• Reuse and recycling	percentage	25.52	47.16	56.67	19.20
	• Other recovery operation methods	percentage	2.33	8.85	7.80	70.95
	• Energy recovery (alternative fuels/ fuel blending)	percentage	72.10	43.77	35.52	9.85
	• Incineration without energy recovery	percentage	0.04	0.22	0.01	-
	• Other disposal operation	percentage	-	-	-	-
	• Landfilling	percentage	-	-	-	-

### Industrial Waste Management at the Bangchak Phra Khanong Refinery

Indicator	Material Aspect	Unit	2020	2021	2022	2023
Total waste generated by category and disposal/recovery operation						
GRI 306-3	Hazardous waste <sup>1</sup> by disposal/recovery operation	tonne/year	2,676.61	2,618.73	1,584.44	3,435.37
GRI 306-4	Hazardous waste <sup>1</sup> diverted from disposal (offsite)	tonne/year	484.94	1,462.86	991.38	2,192.93
	• Reuse	tonne/year	-	-	-	-
	• Recycling	tonne/year	484.94	1,220.57	856.42	1,101.73
	• Recovery (reclamation, regeneration of metal and metallic compounds)	tonne/year	-	242.29	134.96	1,091.20
GRI 306-5	Hazardous waste <sup>1</sup> directed to disposal (offsite)	tonne/year	2,191.67	1,155.87	593.06	1,242.45
	• * DIW Energy recovery (alternative fuels/ fuel blending)	tonne/year	2,190.40	1,149.29	592.95	1,242.45
	• Incineration without energy recovery	tonne/year	1.27	6.58	0.11	-
	• Landfilling	tonne/year	-	-	-	-
	• Other disposal operations <sup>3</sup>	tonne/year	-	-	-	-
GRI 306-3	Non-hazardous waste <sup>1</sup> by disposal/recovery operation	tonne/year	484.66	322.07	145.20	9,288.39
GRI 306-4	Non-hazardous waste <sup>1</sup> diverted from disposal (offsite)	tonne/year	395.72	184.26	123.77	9,277.50
	• Reuse	tonne/year	-	-	-	-
	• Recycling	tonne/year	321.96	166.28	56.06	1,340.99
	• Other recovery operation (other recovery unlisted materials)	tonne/year	-	17.98	-	-
	• Other recovery operation (land reclamation: using construction waste)	tonne/year	73.76	-	-	7,899.16
	• Sorting	tonne/year	73.76	-	67.71	37.35
	• Composting	tonne/year	-	-	-	-
GRI 306-5	Non-hazardous waste <sup>1</sup> directed to disposal (offsite)	tonne/year	88.94	137.81	21.43	10.89
	• Energy recovery (alternative fuels/ fuel blending)	tonne/year	88.94	137.81	21.43	10.89
	• Incineration without energy recovery	tonne/year	-	-	-	-
	• Landfilling	tonne/year	-	-	-	-
	• Other disposal operations <sup>3</sup>	tonne/year	-	-	-	-

Industrial Waste Management at the Bangchak Phra Khanong Refinery						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
*DIW	Hazardous waste directed to disposal (offsite) <sup>4</sup>	tonne/year	2,191.67	1,155.87	593.06	1,242.45
04	• Recycle (042, 041, 044 and 049)	tonne/year	2,190.40	1,149.29	592.95	1,242.45
	• 041: Use as fuel substitution or burn for energy recovery					
	• 042: Fuel blending					
	• 044: Use as co-material in cement kiln or rotary kiln					
07	• Disposal (075: Incineration in hazardous waste incinerator)	tonne/year	1.27	6.58	0.11	-

หมายเหตุ:

1. Weight from waste manifest.
2. Estimate from volum of waste sent to disposal based on calculation of number of bags per container and average weight per bag /container
3. According to Department of Industrial Works (DIW), Bangchak refinery have complied with DIW's Announcement of Waste processor B.E. 2550, Best Practice of Waste Management and Disposal B.E. 2551 and Hazardous Substance Act. 2535 and the waste management have been classified and managed according to Notification of Ministry of Industry Re: Industrial Waste Disposal B.E. 2548 (2005). Waste management can be classified into 8 methods as follows: Method 01 Sorting, Method 02 Storage, Method 03 Reuse, Method 04 Recycle, Method 05 Recovery, Method 06 Treatment, Method 07 Disposal and Method 08 Others.
4. Disposal methods and quantity from DIW waste disposal permit documents and manifests

Office Waste Management						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 306-3	Total waste generated by category and disposal/recovery operation					
	Total waste generated	tonne/year			55.32	74.70
	• Total hazardous waste	tonne/year			0.15	0.05
	• Total non-hazardous waste	tonne/year			55.17	74.65
GRI 306-3	Hazardous waste <sup>1</sup> by disposal/recovery operation					
GRI 306-4	Hazardous waste <sup>1</sup> diverted from disposal (offsite)	tonne/year			-	-
	• Reuse	tonne/year			-	-
	• Recycling	tonne/year			-	-
	• Recovery (reclamation, regeneration of metal and metallic compounds)	tonne/year			-	-
GRI 306-5	Hazardous waste <sup>1</sup> directed to disposal (offsite)	tonne/year			0.15	0.05
	• Energy recovery (alternative fuels/ fuel blending)	tonne/year			-	-
	• Incineration without energy recovery	tonne/year			-	-
	• Landfilling	tonne/year			-	-
	• Other disposal operations <sup>2</sup>	tonne/year			0.15	0.05
GRI 306-3	Non-hazardous waste <sup>1</sup> by disposal/recovery operation					
GRI 306-4	Non-hazardous waste <sup>1</sup> diverted from disposal (offsite)	tonne/year			15.96	30.08
	• Reuse	tonne/year			-	-
	• Recycling	tonne/year			5.57	17.37
	• Composting	tonne/year			10.39	12.71
GRI 306-5	Non-hazardous waste <sup>1</sup> directed to disposal (offsite)	tonne/year			39.21	44.57
	• Energy recovery (alternative fuels/ fuel blending)	tonne/year			0.36	6.21
	• Incineration without energy recovery	tonne/year			-	-
	• Landfilling	tonne/year			38.85	38.36
	• Other disposal operations <sup>2</sup>	tonne/year			-	-

**Remarks:**

- Office waste is managed to be offsite disposal.
- Office hazardous which is batteries is stored and waited for authorized disposal vendor to collect.

## Social Performance

Employee										
Indicator	Material Aspect	Unit	2020		2021		2022		2023	
			Person	%	Person	%	Person	%	Person	%
GRI 2-7 and GRI 405-1	<b>Employment<sup>1</sup></b>									
	Total employee	person, %	1,230	100.00	1,103	100.00	1,098	100.00	1,184	100.00
	<b>Employee by gender</b>									
	• Male	person, %	854	69.43	759	68.81	752	68.49	773	65.29
	• Female	person, %	376	30.57	344	31.19	346	31.51	411	34.71
	<b>Employee by greligion</b>									
	• Buddhism	person, %	1182	96.10	1060	96.10	1055	96.08	1135	95.86
	• Christian - Catholic	person, %	24	1.95	19	1.72	20	1.82	23	1.94
	• Islam	person, %	22	1.79	20	1.82	21	1.91	23	1.94
	• Others	person, %	2	0.16	4	0.36	2	0.18	3	0.26
	<b>Employee by generation</b>									
	• Baby Boom	person, %	22	1.79	14	1.26	8	0.73	5	0.42
	• Generation X	person, %	533	43.33	451	40.89	450	40.98	454	38.34
	• Generation Y	person, %	626	50.89	585	53.04	584	53.19	631	53.29
	• Generation Z	person, %	49	3.98	53	4.81	56	5.10	94	7.94
	<b>Employee by level</b>									
	• <b>Manager level and above</b>	<b>person, %</b>	<b>161</b>	<b>13.09</b>	<b>158</b>	<b>14.32</b>	<b>169</b>	<b>15.39</b>	<b>191</b>	<b>16.13</b>
	• Male	person, %	103	8.37	97	8.79	102	9.29	108	9.12
	• Female	person, %	58	4.72	61	5.53	67	6.10	83	7.01
	• <b>Senior Officer</b>	<b>person, %</b>	<b>234</b>	<b>19.02</b>	<b>231</b>	<b>20.94</b>	<b>243</b>	<b>22.13</b>	<b>268</b>	<b>22.63</b>
	• Male	person, %	150	12.20	148	13.42	154	14.03	166	14.02
	• Female	person, %	84	6.83	83	7.52	89	8.11	102	8.61
	• <b>Officer</b>	<b>person, %</b>	<b>454</b>	<b>36.91</b>	<b>390</b>	<b>35.36</b>	<b>382</b>	<b>34.79</b>	<b>429</b>	<b>36.23</b>
	• Male	person, %	263	21.38	227	20.58	225	20.49	231	19.51
	• Female	person, %	191	15.53	163	14.78	157	14.30	198	16.72
	• <b>Operator</b>	<b>person, %</b>	<b>381</b>	<b>30.98</b>	<b>324</b>	<b>29.37</b>	<b>304</b>	<b>27.69</b>	<b>296</b>	<b>25.00</b>
	• Male	person, %	338	27.48	287	26.02	271	24.68	268	22.64
	• Female	person, %	43	3.50	37	3.35	33	3.01	28	2.36
<b>Employee by age group</b>										
• Less than 30 years old	person, %	205	16.67	154	13.96	126	11.48	146	12.30	
• Between 30-50 years old	person, %	875	71.14	809	73.35	804	73.22	826	69.80	
• More than 50 years old	person, %	150	12.20	140	12.69	168	15.30	212	17.90	

Employee											
Indicator	Material Aspect	Unit	2020		2021		2022		2023		
			Person	%	Person	%	Person	%	Person	%	
GRI 2-7 and GRI 405-1	Employment <sup>1</sup>										
	Employee by area										
	• Head office	person, %	533	43.33	476	43.16	492	44.81	575	48.56	
	• Refinery	person, %	620	50.41	551	49.95	528	48.09	530	44.76	
	• Northern region	person, %	9	0.73	10	0.91	10	0.91	10	0.84	
	• Central region	person, %	49	3.98	46	4.17	47	4.28	47	3.97	
	• Northeastern region	person, %	11	0.89	12	1.09	12	1.09	12	1.03	
	• Southern region	person, %	8	0.65	8	0.73	9	0.82	10	0.84	
	Employee by race										
	• Asian	% of total workforce				99.91		99.91		99.91	
		% of total management workforce				99.87		99.87		99.89	
	• White	% of total workforce				0.09		0.09		0.09	
		% of total management workforce				0.13		0.13		0.11	
	• Black or African American	% of total workforce				0.00		0.00		0.00	
		% of total management workforce				0.00		0.00		0.00	
	• Hispanic or Latino	% of total workforce				0.00		0.00		0.00	
		% of total management workforce				0.00		0.00		0.00	
	• Indigenous or Native	% of total workforce				0.00		0.00		0.00	
		% of total management workforce				0.00		0.00		0.00	

Employee						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
BCP Indicators	Diversity of employees					
	Share of women in total workforce	%	30.57	31.19	31.51	34.71
	Target of share of women in all management positions	%	35.95	39.79	39.79	39.79
	Share of women in all management positions <sup>2</sup>	%	35.95	37.79	37.96	40.39
	Share of women in junior management positions	%	35.90	35.93	37.96	38.06
	Share of women in top management positions <sup>3</sup>	%	41.67	36.36	43.48	40.74
	Share of women in management positions in revenue-generating functions	%	22.44	24.15	26.52	26.43
	Share of women in STEM-related positions (STEM: Science Technology Engineering and Mathematics)	%	26.45	24.64	27.14	36.03
	Share of workforce on minority group - people with disability	%	1.00	1.00	1.00	1.00
Share of LGBTQI+	%	1.79	The respondents did not wish to disclose survey results.	The respondents did not wish to disclose survey results.	The respondents did not wish to disclose survey results.	

Employee										
Indicator	Material Aspect	Unit	2020		2021		2022		2023	
			Person	%	Person	%	Person	%	Person	%
GRI 401-1	Employee turnover									
	Employee turnover rate	%	4.13		5.76		5.05		2.99	
	Voluntary employee turnover rate	%	3.16		5.13		4.50		2.99	
	Employee turnover by gender									
	• Male	person, %	25	64.10	37	64.91	25	51.02	19	55.88
	• Female	person, %	14	35.90	20	35.09	24	48.98	15	44.12
	Employee turnover by age group									
	• Less than 30 years old	person, %	18	46.15	27	47.37	20	40.81	14	41.18
	• Between 30-50 years old	person, %	17	43.59	28	49.12	26	53.06	20	58.82
• More than 50 years old	person, %	4	10.26	2	3.51	3	6.12	0	0.00	

Employee											
Indicator	Material Aspect	Unit	2020		2021		2022		2023		
			Person	%	Person	%	Person	%	Person	%	
GRI 401-1	Employee turnover										
	Employee turnover by level										
		• Manager level and above	person, %					6	12.24	3	8.82
		• Senior officer and officer	person, %					38	77.55	30	88.23
		• Operator	person, %					5	10.20	1	2.95
	Employee turnover by race										
		• Asian	person, %					49	100.00	34	100.00
		• White	person, %					0	0.00	0	0.00
		• Black or African American	person, %					0	0.00	0	0.00
		• Hispanic or Latino	person, %					0	0.00	0	0.00
		• Indigenous or Native	person, %					0	0.00	0	0.00
	New Employee										
		New Employee	person, %	30	100.00	43	100.00	57	100.00	123	100
	New employee by gender										
		• Male	person, %	19	63.33	21	48.84	28	49.12	43	34.96
		• Female	person, %	11	36.67	22	51.16	29	50.88	80	65.04
	New employee by age group										
		• Less than 30 years old	person, %	24	80.00	24	55.81	30	52.63	67	54.47
		• Between 30-50 years old	person, %	6	20.00	17	39.53	26	45.61	55	44.71
		• More than 50 years old	person, %	0	0.00	2	4.65	1	1.75	1	0.81
	New employee by level										
		• Manager level and above	person, %					9	15.79	9	7.31
		• Senior officer and officer	person, %					46	80.70	114	92.68
		• Operator	person, %					2	3.51	0	0.00
	New employee by race										
		• Asian	person, %					57	100.00	123	100.00
	• White	person, %					0	0.00	0	0.00	
	• Black or African American	person, %					0	0.00	0	0.00	
	• Hispanic or Latino	person, %					0	0.00	0	0.00	
	• Indigenous or Native	person, %					0	0.00	0	0.00	
BCP Indicators	Percentage of open position filled by internal candidates (internal hires)	%	10.11		11.11		10.71		11.2		
	Average hiring cost per person <sup>4</sup>	THB/person	122,955		42,812		41,000		96,000		



Employee										
Indicator	Material Aspect	Unit	2020		2021		2022		2023	
			Person	%	Person	%	Person	%	Person	%
GRI401-3	<b>Parental leave</b>									
	Female employees who were entitled to parental leave	person, %					346	100.00	411	100.00
	• Female employees who took parental leave (as % of female employees who were entitled to parental leave) <sup>5</sup>	person, %	4	0.33	8	0.73	4	1.16	5	1.22
	• Female employees who took parental leave (as % of all employees who were entitled to parental leave)	person, %					4	0.36	5	0.42
	Male employees who were entitled to parental leave	person, %					752	100.00	773	100.00
	• Male employees who took parental leave (as % of female employees who were entitled to parental leave)	person, %					16	2.13	0	0.00
	• Male employees who took parental leave (as % of all employees who were entitled to parental leave)	person, %					16	1.46	0	0.00
	Female employees who returned to work after parental leave	person, %	4	100.00	8	100.00	4	100.00	5	100.00
	Male employees who returned to work after parental leave	person, %					16	100.00	0	0.00
	Female employees who returned to work after parental leave that were still employed 12 months after their return to work	person, %					4	100.00	5	100.00
	Male employees who returned to work after parental leave that were still employed 12 months after their return to work	person, %					16	100.00	0	0.00

Employee						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 404-1	<b>Employee development</b>					
	Total training hour	hour	28,650.27	30,869.65	31,931.70	42,333.60
	Average training hour per person	hour/person	23.29	27.99	29.08	35.75
	Average amount spent on training and development per person	THB/person	8,717.66	14,447.45	15,930.68	23,825.76
	<b>Training hour by gender</b>					
	• Male	hour/person	21.05	29.03	31.97	36.82
	• Female	hour/person	28.18	25.69	22.80	33.75
	<b>Training hour by level</b>					
	• Manager level and above	hour/person	45.15	53.66	25.08	22.19
	• Senior officer and officer	hour/person	24.03	24.87	27.11	24.31
	• Operator	hour/person	12.53	21.46	35.36	36.31
	<b>Training hour by business category</b>					
	• President & Chief Executive Officer (PS)	hour/person	38.45	31.84	26.18	37.84
	• Corporate Sustainability Development and Strategic Synergy (CSBU)	hour/person	46.99	0.00	14.55	29.21
	• Corporate Management and Organization Development (MDBU)	hour/person	37.00	23.47	25.23	39.57
	• Accounting and Finance (AFBU)	hour/person	18.85	27.00	46.10	32.71
	• Marketing Business Group (MKBG)	hour/person	15.58	29.56	13.05	18.31
	• Refinery Business Group (RFBG)	hour/person	21.82	28.09	37.22	46.39
	Best Employer score	%	56.00	N/A	N/A	N/A
	Employee Engagement Score	%	63.00	70.00	75.00	85.00
Labour and Human rights Complaints	case	0	0	0	0	
Harassment and Discrimination Complaints	case	0	0	0	0	
Training to increase awareness of harassment and discrimination	frequency		1 time/year	1 time/year	1 time/year	

Employee						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
BCP Indicators	KPIs on employee development					
	KPI 1: Average training hours per person					
	Average training hours by level					
	• Manager level and above	hour/person	45	54	25	22
	• Senior officer and officer	hour/person	25	25	27	24
	• Operator	hour/person	15	22	35	36
	Average training hours by training category					
	• Hard skills	hour/person	14	11	20	25
	• Soft skills	hour/person	9	17	15	10
	KPI 2: Average amount spent per person					
	Average amount spent per person by level					
	• Manager level and above	THB/person	15,000	30,000	50,000	50,000
	• Senior officer and officer	THB/person	4,500	8,000	15,000	20,000
	• Operator	THB/person	1,500	3,000	8,000	10,000
Average amount spent per person by training category						
• Hard skills	THB/person	2,900	5,000	10,000	20,000	
• Soft skills	THB/person	1,800	3,000	15,000	15,000	

Employee						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
BCP Indicators	Human Capital Return on Investment					
	Total revenue	THB	136,450,288,879	199,416,997,279	328,017,357,411	385,853,022,710
	Total operating expenses	THB	132,122,127,969	175,744,433,215	281,748,692,278	352,114,899,628
	Total employee-related expenses	THB	1,796,270,554	2,066,886,200	2,466,797,249	2,517,022,106
	Human Capital Return on Investment (HC ROI)	ratio	3.41	12.45	19.76	14.40

Employee						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI 405-2	<b>Ratio of basic salary and remuneration (women : men)<sup>6</sup></b>					
	<b>Ratio of basic salary and remuneration</b>					
	• Ratio of basic salary	women : men		1.16	1.18	1.16
	• Ratio of remuneration	women : men			1.08	1.00
	<b>Ratio of basic salary by age group</b>					
	• Less than 30 years old	women : men		1.33	1.25	1.18
	• Between 30-50 years old	women : men		1.20	1.22	1.25
	• More than 50 years old	women : men		0.96	1.06	1.16
	<b>Ratio of remuneration by age group</b>					
	• Less than 30 years old	women : men			0.96	0.78
	• Between 30-50 years old	women : men			1.09	1.08
	• More than 50 years old	women : men			1.05	1.03
	<b>Ratio of basic salary by religion</b>					
	• Buddhism	women : men		1.17	1.19	1.19
	• Others	women : men		0.78	0.87	0.78
	<b>Ratio of remuneration by religion</b>					
	• Buddhism	women : men			1.09	1.02
	• Others	women : men			0.85	0.68
	<b>Ratio of basic salary by level</b>					
	• Manager level and above	women : men		0.89	0.92	0.95
	• Senior Officer	women : men		0.98	0.98	0.94
	• Officer	women : men		0.94	0.95	0.94
	• Operator	women : men		1.13	1.05	0.98
	<b>Ratio of remuneration by level</b>					
	• Manager level and above	women : men			0.92	0.87
	• Senior Officer	women : men			0.95	0.87
	• Officer	women : men			0.81	0.74
	• Operator	women : men			0.82	0.79
	<b>Ratio of basic salary by area</b>					
	• Head office	women : men		0.79	0.83	0.85
	• Refinery	women : men		1.35	1.37	1.30
	• Others (Northern, Central, Northeastern, Southern region)	women : men		0.78	0.77	0.77
<b>Ratio of remuneration by area</b>						
• Head office	women : men			0.82	0.79	
• Refinery	women : men			1.22	1.16	
• Others (Northern, Central, Northeastern, Southern region)	women : men			0.72	0.70	

Employee								
Indicator	Material Aspect	Unit	2020	2021	2022	2023		
GRI 202-1	Ratio of employee mean pay (based on basic salary) to legal minimum pay	ratio			1.45	1.37	1.55	1.40
	Ratio of contractor mean pay (based on basic salary) to legal minimum pay	ratio			Omission		Omission	
GRI 202-2	Share of native (Thai) employees on manager and above level.	%			99.41	99.48		
<b>Ratio of basic salary and remuneration (men : women)</b>								
BCP Indicators	Mean gender pay gap (based on basic salary)	%	-16.97	-15.66	-17.55	-16.57		
	Median gender pay gap (based on basic salary)	%	-20.29	-18.88	-21.34	-19.40		
	Mean gender pay gap (based on remuneration)	%			-8.03	-0.08		
	Median gender pay gap (based on remuneration)	%			-2.90	2.98		
	Mean bonus gap	%	-14.92	-14.47	-17.31	-8.18		
	Median bonus gap	%	-15.96	-17.83	-18.96	-12.67		

**Remarks:**

- The Company has an exclusive full-time employment policy. There are no self-employment, temporary, part-time, non-guaranteed-hours employments with no seasonal variations in manpower. The number of employees is reported in headcount, the average number across the reporting period.
- Employee in all management positions cover officer, senior officer, and manager and above.
- Top management positions are all management-level positions with a reporting line 2 levels or less from the CEO.
- The average cost of the new employee hiring process in 2023 increased from the previous year due to an increase in recruitment.
- The percentage of parental leave has been reported as a percentage of all female employees since 2020. In 2022, the parental leave welfare has been expanded to cover female and male employees. Male employees is eligible for 15 days parental leave. Thus, the reporting of the percentage of parental leave as a percentage of all employees has been presented since 2022.

Occupational Health and Safety Performance											
Indicator	Material Aspect	Unit	2020		2021		2022		2023		
			Male	Female	Male	Female	Male	Female	Male	Female	
GRI 2-8	<b>Workers covered by an occupational health and safety management system</b>										
	• Workers who are not employees	person								640	
		person							461	179	
GRI 403-9	<b>Total Working Hour</b>										
	• Employee	hour	2,344,462.90		1,258,971.00		2,043,251.90		2,130,210.40		
		hour	1,675,031.60	669,431.30	1,149,249.50	109,721.50	1,448,331.30	594,920.60	1,464,010.90	666,199.50	
	• Contractor	hour	7,815,554.00		2,810,960.50		1,777,185.50		1,995,613.72		
hour		5,959,383.00	1,856,171.00	2,238,417.50	572,543.00	1,401,309.00	375,876.50	1,536,011.22	459,602.50		

### Occupational Health and Safety Performance

Indicator	Material Aspect	Unit	2020		2021		2022		2023	
			Male	Female	Male	Female	Male	Female	Male	Female
GRI 403-9	Work-Related Injuries									
	Fatality as a result of Work-Related Injury									
	• Employee	case	0		0		0		0	
			0	0	0	0	0	0	0	0
		case/million working hours	0		0		0		0	
			0	0	0	0	0	0	0	0
	data coverage (%)		100		100		100		100	
	• Contractor	case	0		0		0		0	
			0	0	0	0	0	0	0	0
		case/million working hours	0		0		0		0	
			0	0	0	0	0	0	0	0
	data coverage (%)		100		100		100		100	
	Total Recordable Injury Frequency Rate (TRIFR)									
	• Employee	case	1		0		2		0	
			1	0	0	0	2	0	0	0
		case/million working hours	0.43		0		0.98		0	
			0.60	0	0	0	1.38	0	0	0
	data coverage (%)		100		100		100		100	
	• Contractor	case	4		4		2		3	
			2	2	4	0	2	0	3	0
case/million working hours		0.38		1.42		1.13		1.50		
		0.34	0.54	1.79	0	1.43	0	1.95	0	
data coverage (%)		100		100		100		100		

Occupational Health and Safety Performance											
Indicator	Material Aspect	Unit	2020		2021		2022		2023		
			Male	Female	Male	Female	Male	Female	Male	Female	
GRI 403-9	<b>Work-Related Injuries</b>										
	<b>Lost-Time Injury Frequency Rate (LTIFR)<sup>1</sup></b>										
	• Employee	case	0		0		0		0		
			0	0	0	0	0	0	0	0	
		case/million working hours	0		0		0		0		
			0	0	0	0	0	0	0	0	
	data coverage (%)		100		100		100		100		
	• Contractor	case	2		1		2		0		
			2	0	1	0	2	0	0	0	
		case/million working hours	0.26		0.36		1.13		0		
			0.34	0	0.45	0	1.43	0	0	0	
	data coverage (%)		100		100		100		100		
	<b>High-Consequence Work-Related Injuries</b>										
	• Employee	case	0		0		0		0		
			0	0	0	0	0	0	0	0	
	data coverage (%)		100		100		100		100		
	• Contractor	case	0		0		1		0		
			0	0	0	0	1	0	0	0	
	data coverage (%)		100		100		100		100		
	<b>Near Miss Incident</b>										
	Total cases		case	101		24		12		11	
• Employee		case	12		21		8		11		
• Contractor		case	1		3		4		0		
Data coverage		%	100		100		100		100		
GRI 403-10	<b>Work-Related Illnesses</b>										
	<b>Occupational Illness Frequency Rate (OIFR)</b>										
	• Employee	case	0		0		0		0		
			0	0	0	0	0	0	0	0	
		case/million working hours	0		0		0		0		
			0	0	0	0	0	0	0	0	
		fatality case		0		0		0		0	
		data coverage (%)		100		100		100		100	



Occupational Health and Safety Performance

Indicator	Material Aspect	Unit	2020		2021		2022		2023	
			Male	Female	Male	Female	Male	Female	Male	Female
<b>Process Safety Events</b>										
GRI Sector Standard referenece number 11.8.3 (Process Safety Management: PSM)		event	0	0	0	0	0	0	0	0
	Process Safety Events - Tier 1	event/million working hours	0	0	0	0	0	0	0	0
		data coverage (%)	100	100	100	100	100	100	100	100
	Process Safety Events - Tier 2	event	0	0	0	0	0	0	0	0
		event/million working hours	0	0	0	0	0	0	0	0
		data coverage (%)	100	100	100	100	100	100	100	100
<b>PSM Assessment Score</b>										
	PSM Assessment Score (Target in 2023: 4.0)	score	3.30	3.50	4.00	4.00	4.00	4.00	4.00	4.00

Remarks:

1.The lost day counts from the work day after the accident.



Hydrocarbon Spill						
Indicator	Material Aspect	Unit	2020	2021	2022	2023
GRI306-3 <sup>1</sup> (2016)	Hydrocarbon spill > 100 barrels per time					
	Number of significant hydrocarbon spill-related cases (> 100 barrels/time)	case	0	0	0	0
	Volume of significant hydrocarbon spill (> 100 barrels / time)	barrel	0	0	0	0
		L	0	0	0	0
	Hydrocarbon spill > 1 barrels per time (but not over 100 barrels)					
	Number of significant hydrocarbon spill-related cases (> 1, but not over 100, barrels per time )	case	3	0	0	0
	Volume of significant hydrocarbon spills (> 1, but not over 100, barrels per time )	barrel	11	0	0	0
		L	1,760	0	0	0
	Volume of hydrocarbon over 1 barrel spilled into the environment	barrel	0	0	0	0
		L	0	0	0	0
Sector standard reference 11.8.3	Number of Tier 1 cases related to significant spills (LOPC)	case	0	0	0	0
	Number of Tier 2 cases related to significant spills (LOPC)	case	0	0	0	0

**Remarks:**

1. Content related to wastewater and waste according to GRI Standard - GRI306 (2016) has been replaced by GRI Standard - GRI 303: Water and Wastewater (2018) and GRI 306: Waste (2020), but content related to leakage in GRI 306 (2016) is still in effect.

2. Process safety performance indicators (Leading and Lagging), such as indicators regarding Tier 1 and Tier 2 loss of primary containment (LOPC), following API RP 754 (American Petroleum Institute Recommended Practice 754) guidelines.

Loss of Primary Containment (LOPC) is an unplanned or uncontrolled release of any material from primary containment, including non-toxic and non-flammable materials

- Tier1 : LOPC Events of Greater Consequence, the count of Tier 1 process safety events is the most lagging performance indicator and represents incidents with greater consequence resulting from actual losses of containment.

- Tier2 : LOPC Events of Lesser Consequence, the count of Tier 2 process safety events represents loss of primary containment events with a lesser consequence, but may be predictive of future, more significant incidents.

# GRI Content Index

<b>Statement of use</b>	Bangchak Corporation Public Company Limited has reported in accordance with GRI standards for the period 1 January 2023 - 31 December 2023
<b>GRI 1 used</b>	GRI 1: Foundation 2021
<b>Applicable GRI Sector Standard(s)</b>	GRI 11: Oil and Gas Sector 2021

GRI STANDARD/OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>General disclosures</b>						
GRI 2: General Disclosures 2021	2-1 Organizational details	12	A gray cell indicates that reasons for omission are not permitted for the disclosure or that a GRI Sector Standard reference number is not available.			
	2-2 Entities included in the organization's sustainability reporting	8				
	2-3 Reporting period, frequency and contact point	8-9				
	2-4 Restatements of information	8				
	2-5 External assurance	282				
	2-6 Activities, value chain and other business relationships	17-25				
	2-7 Employees	251-252				
	2-8 Workers who are not employees	259				
	2-9 Governance structure and composition	16				
	2-10 Nomination and selection of the highest governance body	AR 195				
	2-11 Chair of the highest governance body	AR 176				
	2-12 Role of the highest governance body in overseeing the management of impacts	30-31, 85-95				
	2-13 Delegation of responsibility for managing impacts	30				
	2-14 Role of the highest governance body in sustainability reporting	53				
	2-15 Conflicts of interest	AR 211				
	2-16 Communication of critical concerns	AR 209-210				
	2-17 Collective knowledge of the highest governance body	AR 196				
	2-18 Evaluation of the performance of the highest governance body	AR 196				
	2-19 Remuneration policies	AR 189				
	2-20 Process to determine remuneration	AR 189-190				
	2-21 Annual total compensation ratio	N/A	a,b,c	Confidentiality constraints	CEO compensation is confidential.	
	2-22 Statement on sustainable development strategy	4-5				
	2-23 Policy commitments	30-31				
	2-24 Embedding policy commitments	30-31				
	2-25 Processes to remediate negative impacts	AR 209-210				

GRI STANDARD/OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
GRI 2: General Disclosures 2021	2-26 Mechanisms for seeking advice and raising concerns	AR 209-210				
	2-27 Compliance with laws and regulations	227				
	2-28 Membership associations	12				
	2-29 Approach to stakeholder engagement	32-33				
	2-30 Collective bargaining agreements	184				
<b>Material topics</b>						
GRI 3: Material Topics 2021	3-1 Process to determine material topics	52-57	A gray cell indicates that reasons for omission are not permitted for the disclosure or that a GRI Sector Standard reference number is not available.			
	3-2 List of material topics	53				
<b>Economic performance</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	198-223				11.14.1
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	226				11.14.2
<b>Market presence</b>						
GRI 202: Market Presence 2016	202-2 Proportion of senior management hired from the local community	259				11.14.3
<b>Indirect economic impacts</b>						
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	198-223				11.14.4
	203-2 Significant indirect economic impacts	121-123, 198-223				11.14.5
<b>Procurement practices</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	97-109				11.14.1
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	227				11.14.6
<b>Anti-corruption</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	81-85				11.20.1
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	81				11.20.2
	205-2 Communication and training about anti-corruption policies and procedures	81-85				11.20.3
	205-3 Confirmed incidents of corruption and actions taken	81-82				11.20.4
	Additional Sector: Contract transparency	AR 75-81				11.20.5
	Additional Sector: The organization's beneficial owners	N/A	Additional Sector Disclosure Requirement of GRI 11.20	Confidentiality constraints	PDPA	11.20.6
<b>Anti-competitive behavior</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	81-85				11.19.1

GRI STANDARD/OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	AR 208				11.19.2
<b>Tax</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	74-75				11.21.1
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	226				11.21.2
	201-4 Financial assistance received from the government	AR 326,328				11.21.3
GRI 207: Tax 2019	207-1 Approach to tax	74-75				11.21.4
	207-2 Tax governance, control, and risk management	74-75				11.21.5
	207-3 Stakeholder engagement and management of concerns related to tax	74-75				11.21.6
	207-4 Country-by-country reporting	228-229				11.21.7
<b>Information technology and cybersecurity</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	123-127				
	Number of information security breaches/cybersecurity incidents	127				
<b>Energy</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	132-133				11.1.1
GRI 302: Energy 2016	302-1 Energy consumption within the organization	230-233				11.1.2
	302-2 Energy consumption outside of the organization	N/A	a,b,c	Information unavailable/incomplete	The data of energy outside of the organization will begin to be collected in 2024	11.1.3
	302-3 Energy intensity	230-231				11.1.4
	302-4 Reduction of energy consumption	132-133				
	302-5 Reductions in energy requirements of products and services	N/A	a,b,c	Not applicable	The gasoline and diesel are considered as commodity product which the energy requirement is similar across the industry	
<b>Water and effluents</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	138-143				11.6.1
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	138-143				11.6.2
	303-2 Management of water discharge-related impacts	138-143				11.6.3
	303-3 Water withdrawal	240-245				11.6.4
	303-4 Water discharge	242-245				11.6.5
	303-5 Water consumption	242-245				11.6.6

GRI STANDARD/OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Biodiversity</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	154-163				11.4.1
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	154-159	Omission on GRI 304-1 a (vi,vii)	Information unavailable/incomplete	The data of biodiversity value characterized will begin to be collected in 2025	11.4.2
	304-2 Significant impacts of activities, products and services on biodiversity	154-163				11.4.3
	304-3 Habitats protected or restored	154-163				11.4.4
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	N/A	a	Information unavailable/incomplete	The information on the IUCN Red List and the national conservation list species in areas is currently being collected in 2024.	11.4.5
<b>Emissions, climate adaptation, resilience, and transition</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	133-137				11.1.1, 11.2.1, 11.3.1
GRI 201: Economic Performance 2016	201-2 Financial implications and other risks and opportunities due to climate change	133				11.2.2
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	232-241				11.1.5
	305-2 Energy indirect (Scope 2) GHG emissions	234-241				11.1.6
	305-3 Other indirect (Scope 3) GHG emissions	238-241			- Reporting boundary for Scope 3 GHG of Upstream transport Via Ship cover domestic and oversea transportation. - Reporting scope of Scope 3 GHG of downstream product transportation via truck also does not include transportation of lube oil product.	11.1.7
	305-4 GHG emissions intensity	235-241				11.1.8
	305-5 Reduction of GHG emissions	235-241				11.2.3
	Additional Sector: The organization's approach to public policy development and lobbying on climate change	133-137				11.2.4
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	246				11.3.2
	416-1 Assessment of the health and safety impacts of product and service categories	114				11.3.3
OG6: Volume of flared and vented hydrocarbon	246					

GRI STANDARD/OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Waste, circular economy, asset integrity and critical incident management</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	147-150				11.5.1, 11.8.1
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	147-150				11.5.2
	306-2 Management of significant waste-related impacts	147-150				11.5.3
	306-3 Waste generated	247-250				11.5.4
	306-3 (2016) Significant spill	173-175, 263				11.8.2
	306-4 Waste diverted from disposal	248-250				11.5.5
	306-5 Waste directed to disposal	248-250				11.5.6
	Additional sector: Number of Tier 1 and Tier 2 process safety events, and a breakdown of this total by business activity	263				11.8.3
<b>Supplier environmental assessment</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	97-109				
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	101-109				
	308-2 Negative environmental impacts in the supply chain and actions taken	101-109				
<b>Employment Practices</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	185-197				11.10.1, 11.11.1
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	253-254				11.10.2
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	193-194				11.10.3
	401-3 Parental leave	255				11.10.4, 11.11.3
GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	192				11.10.5
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	256				11.10.6, 11.11.4
	404-2 Programs for upgrading employee skills and transition assistance programs	190-192				11.10.7
	404-3 Percentage of employees receiving regular performance and career development reviews	196-197				

GRI STANDARD/OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Occupational health and safety</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	168-174				11.9.1
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	168-174				11.9.2
	403-2 Hazard identification, risk assessment, and incident investigation	170				11.9.3
	403-3 Occupational health services	170-171				11.9.4
	403-4 Worker participation, consultation, and communication on occupational health and safety	171				11.9.5
	403-5 Worker training on occupational health and safety	179				11.9.6
	403-6 Promotion of worker health	172				11.9.7
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	168-174				11.9.8
	403-8 Workers covered by an occupational health and safety management system	168				11.9.9
	403-9 Work-related injuries	259-261				11.9.10
	403-10 Work-related ill health	261				11.9.11
	OGSS: Emergency Preparedness	173-174				
<b>Diversity and equal opportunity</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	188-190				11.11.1
GRI 202 : Market Presence 2016	202-2 Proportion of senior management hired from the local community	259				11.11.2
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	251-252				11.11.5
	405-2 Ratio of basic salary and remuneration of women to men	258				11.11.6
<b>Non-discrimination</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	176-184				11.11.1
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	176-184				11.11.7
<b>Freedom of association and collective bargaining</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	176-184				11.13.1
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	176-184				11.13.2
<b>Forced or compulsory labor</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	176-184				11.12.1
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	176-184				11.12.2

GRI STANDARD/OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Security practices</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	176-184				11.18.1
GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	176-184				11.18.2
<b>Rights of indigenous peoples</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	176-184				11.17.1
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	176-184				11.17.2
	Additional Sector: List the locations of operations where indigenous peoples are present or affected by activities of the organization	176-184				11.17.3
	Additional Sector: Report if the organization has been involved in a process of seeking free, prior and informed consent (FPIC) from indigenous peoples for any of the organization activities	176-184				11.17.4
<b>Land and Resource Rights</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	176-184				11.16.1
GRI 412: Human Rights Assessment 2016	Additional Sector: List the locations of operations that caused or contributed to involuntary resettlement or where such resettlement is ongoing. For each location, describe how peoples' livelihoods and human rights were affected and restored.	176-184				11.16.2
<b>Energy Accessibility &amp; Security</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	223				
<b>Local communities</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	198-223				11.15.1
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	198-223				11.15.2
	413-2 Operations with significant actual and potential negative impacts on local communities	198-223				11.15.3
	Additional Sector: Number and Type of grievances from local communities	198-223				11.15.4
<b>Supplier social assessment</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	101-109				11.10.1, 11.12.1
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	101-109				11.10.8, 11.12.3
	414-2 Negative social impacts in the supply chain and actions taken	101-109				11.10.9



GRI STANDARD/OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Public policy</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	AR 203				11.22.1
GRI 415: Public Policy 2016	415-1 Political contributions	AR 203				11.22.2
<b>Marketing and labeling</b>						
GRI 3: Material Topics 2021	3-3 Management of material topics	110-118				
GRI 417: Marketing and Labeling 2016	417-3 Incidents of non-compliance concerning marketing communications	227				
<b>Topics in the applicable GRI Sector Standards determined as not material</b>						
TOPIC			EXPLANATION			
<b>GRI 11: Oil and Gas Sector 2021</b>						
Topic 11.7 Closure and rehabilitation			There is no any closure and rehabilitation plan in the near future (> 10 years).			

# The Adherence of the Ten Principles of the UN Global Compact

GC Scope or Principle	Criteria of GC Advanced Level	Bangchak Approach	Disclose
<b>Scope:</b> Implementing the Ten Principles into Strategies & Operations	<b>Strategy, Governance and Engagement</b>		
	1.. The COP describes mainstreaming into corporate functions and business units	<ul style="list-style-type: none"> <li>Bangchak and Sustainability</li> <li>Sustainability Strategy</li> </ul>	30 58
	2.. The COP describes value chain implementation	<ul style="list-style-type: none"> <li>Bangchak Overview</li> <li>Bangchak Value Chain</li> <li>Supply Chain Management</li> </ul>	12 17 97
<b>Principle 1:</b> Businesses should support and respect the protection of internationally proclaimed human rights  <b>Principle 2:</b> Businesses should make sure that they are not complicit in human rights abuses	<b>Human rights</b>		
	3. The COP describes robust commitments, strategies, or policies in the area of human rights	<ul style="list-style-type: none"> <li>Human Rights</li> </ul>	176
	4. The COP describes effective management systems to integrate the human rights principles		
5. The COP describes effective monitoring and evaluation mechanisms of human rights integration			
<b>Principle 3:</b> Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining  <b>Principle 4:</b> The elimination of all forms of forced and compulsory labour  <b>Principle 5:</b> The effective abolition of child labour  <b>Principle 6:</b> The elimination of discrimination in respect of employment and occupation	<b>Labour</b>		
	6. The COP describes robust commitments, strategies, or policies in the area of labour	<ul style="list-style-type: none"> <li>Bangchak and Sustainability</li> </ul>	30
	7. The COP describes effective management systems to integrate the labour principles	<ul style="list-style-type: none"> <li>Stakeholder Engagement (Employee)</li> </ul>	34
	8. The COP describes effective monitoring and evaluation mechanisms of labour integration	<ul style="list-style-type: none"> <li>Safety &amp; Occupational Health</li> <li>Human Rights</li> <li>Employee Stewardship</li> </ul>	168 176 185
<b>Principle 7:</b> Business should support a precautionary approach to environmental challenges  <b>Principle 8:</b> Businesses should undertake initiatives to promote greater environmental responsibility  <b>Principle 9:</b> Businesses should encourage the development and diffusion of environmentally friendly technologies	<b>Environment</b>		
	9. The COP describes robust commitments, strategies, or policies in the area of environmental stewardship	<ul style="list-style-type: none"> <li>Bangchak and Sustainability</li> </ul>	30
	10. The COP describes effective management systems to integrate the environmental principles	<ul style="list-style-type: none"> <li>Environment Performance</li> </ul>	129
	11. The COP describes effective monitoring and evaluation mechanisms for environmental stewardship	<ul style="list-style-type: none"> <li>Sustainable Product and Service</li> <li>Eco-Efficiency</li> <li>Environmental Accountin</li> </ul>	110 131 164

GC Scope or Principle	Criteria of GC Advanced Level	Bangchak Approach	Disclose
<b>Principle10:</b> Businesses should work against corruption in all forms, including extortion and bribery	<b>Anti-corruption</b>		
	12. The COP describes robust commitments, strategies, or policies in the area of anti-corruption	<ul style="list-style-type: none"> <li>Bangchak and Sustainability</li> </ul>	30
	13. The COP describes effective management systems to integrate the anti-corruption principles	<ul style="list-style-type: none"> <li>Good Corporate Governance and Anti-Corruption</li> </ul>	75
	14. The COP describes effective monitoring and evaluation mechanisms for the integration of anti-corruption	<ul style="list-style-type: none"> <li>Supply Chain Management</li> </ul>	97
<b>Scope:</b> Take Action in Support of Broaden UN Goals and Issues	<b>UN Goals and Issues</b>		
	15. The COP describes core business contributions to UN Goals and Issues	<ul style="list-style-type: none"> <li>Bangchak and Sustainability</li> </ul>	30
	16. The COP describes strategic social investments and philanthropy	<ul style="list-style-type: none"> <li>Community &amp; Social Engagement</li> </ul>	198
	17. The COP describes advocacy and public policy engagement	<ul style="list-style-type: none"> <li>Bangchak and Sustainability</li> </ul>	30
	18. The COP describes partnerships and collective action	<ul style="list-style-type: none"> <li>Bangchak and Sustainability</li> </ul>	30
<b>Scope:</b> Corporate Sustainability Governance and Leadership	<b>Governance</b>		
	19. The COP describes CEO commitment and leadership	<ul style="list-style-type: none"> <li>Message from the President and CEO</li> <li>Sustainability Strategy</li> </ul>	4 58
	20. The COP describes Board adoption and oversight	<ul style="list-style-type: none"> <li>Bangchak and Sustainability</li> <li>Good Corporate Governance and Anti-Corruption</li> </ul>	30 75
	21. The COP describes stakeholder engagement	<ul style="list-style-type: none"> <li>Bangchak and its takeholders</li> </ul>	32

# Assurance Statement



## LRQA Independent Assurance Statement Relating to Bangchak Corporation Public Company Limited's Integrated Sustainability Report for the calendar year 2023

This Assurance Statement has been prepared for Bangchak Corporation Public Company Limited in accordance with our contract but is intended for the readers of this Report.

### Terms of engagement

LRQA was commissioned by Bangchak Corporation Public Company Limited (BCP) to provide independent assurance on its Integrated Sustainability Report ("the report") against the assurance criteria below to a limited level of assurance at the materiality of the professional judgement of the verifier using LRQA's verification procedure for all specific standard disclosures listed below except for Energy consumption within the organization, Scope 1 GHG emissions, Scope 2 GHG emissions, and GHG emissions intensity where a reasonable level of assurance and 5% materiality is applied. LRQA's verification procedure is based on current best practice, is in accordance with ISAE 3000 and ISAE 3410 and uses the following principles of - inclusivity, materiality, responsiveness and reliability of performance data.

Our assurance engagement covered BCP's operations and activities in Thailand under its operational control (i.e. Refinery and Oil Trading business and Marketing business <sup>(1)</sup>) and specifically the following requirements: <sup>a, b</sup>

- Confirming that the report is in accordance with:
  - GRI Standard 2021
  - GRI 11: Oil and Gas Sector 2021
- Evaluating the reliability of data and information for only the selected indicators listed below:
  - GRI 303-3: Water withdrawal <sup>(2)</sup> (2018)
  - GRI 303-4: Water discharge <sup>(2)</sup> (2018)
  - GRI 303-5: Water consumption <sup>(2)</sup> (2018)
  - GRI 305-3 Other indirect (Scope 3) GHG emissions <sup>(3)</sup> (2016)
  - GRI 305-5: Reduction of GHG emissions <sup>(4)</sup> (2016)
  - GRI 305-7: Nitrogen Oxides (NOx), Sulfur Oxides (SOx), and other significant air emissions (VOC and H2S) <sup>(5)</sup> (2016)
  - GRI 306- 3: Waste generated <sup>(4)</sup> (2020)
  - GRI 306- 4: Waste diverted from disposal <sup>(4)</sup> (2020)
  - GRI 306- 5: Waste directed to disposal <sup>(4)</sup> (2020)
  - GRI 306-3: Significant spills <sup>(5)</sup> (2016)
  - GRI 403-9: Work-related injuries <sup>(6)</sup> (2018)
  - GRI 403-10: Work-related ill health <sup>(6)</sup> (2018)
  - GRI 405-2: Ratio of basic salary and remuneration of women to men <sup>(7)</sup> (2016)
  - GRI 308-1: New suppliers that were screened using environmental criteria <sup>(8)</sup> (2016)
  - GRI 308-2: Negative environmental impacts in the supply chain and actions <sup>(8)</sup> (2016)
  - GRI 414-1: New suppliers that were screened using social criteria <sup>(8)</sup> (2016)
  - GRI 414-2: Negative social impacts in the supply chain and actions taken <sup>(8)</sup> (2016)
  - OG6: Volume of Flared and Vented Hydrocarbon <sup>(5)</sup>
  - OGSS Emergency Preparedness <sup>(6)</sup>
- Evaluating the accuracy of data and information for only the selected indicators listed below:
  - GRI 302-1: Energy consumption within the organization <sup>(9)</sup> (2016)
  - GRI 305-1: Direct (Scope 1) GHG emissions <sup>(9)</sup> (2016)
  - GRI 305-2: Energy indirect (Scope 2) GHG emissions <sup>(9)</sup> (2016)
  - GRI 305-4 : GHG emissions intensity <sup>(9)</sup> (2016)

<sup>a</sup> <https://www.globalreporting.org>

<sup>b</sup> GHG quantification is subject to inherent uncertainty.



**Notes:**

- 1) Companies within Refinery and Oil Trading Business are BCP, Bangkok Fuel Pipeline and Logistics Company Limited (BFPL) and BCP Trading Pte Ltd (BCPT). The verification also includes BCPT which has only an office in Singapore. Companies within Marketing business are Bangchak Green Net Co., Ltd. (BGN) and Bangchak Retail Co., Ltd. (BCR).
- 2) Includes BCP Refinery Plant & Oil Terminal on Sukhumvit 64, Head office at M Tower, BGN and BCR in Thailand and an office of BCPT in Singapore.
- 3) Reporting of Scope 3 GHG emissions includes emissions from Upstream crude oil transportation, Downstream fuel products transportation and distribution, Waste transportation of refinery plant, Purchased goods and services of refinery plant (municipal water and crude oil), Purchased goods and services of head office and regional offices (municipal water, office paper), BCP's Business travel by plane, Used of sold product of Marketing business (fuel sold via BGN's petrol stations), Purchased goods and services of Marketing business (Purchased Municipal water of BGN&BCR and Purchased fine ground coffee & packaging of BCR), and Upstream transportation and distribution of BCR (Distribution of raw material and packaging materials from warehouse to BCR shops).
- 4) Limited to BCP refinery & oil terminal on Sukhumvit 64 Road and Head office at M Tower only.
- 5) Limited to BCP refinery and oil terminal at Sukhumvit 64 Road only.
- 6) Limited to BCP's refinery, oil terminal and refinery office on Sukhumvit 64 Road and Head office at M tower only.
- 7) Includes BCP Refinery business, i.e. Refinery plant & Oil terminal on Sukhumvit 64 Road, all regional offices and oil terminals and Head office.
- 8) Includes BCP only.
- 9) Reporting scope for energy consumption and greenhouse gas emissions includes BCP, BFPL, BGN, and BCR in Thailand and an office of BCPT in Singapore.

**LRQA's Opinion**

Based on LRQA's approach, we believe that BCP has, in all material respects disclosed accurate data and information related to the following selected indicators:

- GRI 302-1: Energy consumption within the organization<sup>(9)</sup> (2016)
- GRI 305-1: Direct (Scope 1) GHG emissions<sup>(9)</sup> (2016)
- GRI 305-2: Energy indirect (Scope 2) GHG emissions<sup>(9)</sup> (2016)
- GRI 305-4 : GHG emissions intensity<sup>(9)</sup> (2016)

The above opinion expressed is formed on the basis of a reasonable level of assurance and at 5% materiality.

Also, nothing has come to our attention that would cause us to believe that BCP has not, in all material respects:

- Met the requirements above.
- Disclosed reliable performance data and information for the selected indicators listed in the terms of engagement.
- Covered all the issues that are important to the stakeholders and readers of this report.

The opinion expressed is formed on the basis of a limited level of assurance and at the materiality of the professional judgement of the verifier.

**Note:** The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

**LRQA's approach**

LRQA's assurance engagements are carried out in accordance with our verification procedure. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Assessing BCP's approach to stakeholder engagement to confirm that issues raised by stakeholders were captured correctly. We did this through reviewing documents and associated records of stakeholder engagement results.
- Reviewing BCP's process for identifying and determining material issues to confirm that the right issues were included in their Report. We did this by researching the global focus of sustainability issues within BCP's relevant business sector, considering likely material topics listed in GRI 11: Oil and Gas Sectors 2021, as well as benchmarking reports written by BCP and its peers to ensure that sector specific issues were included for comparability. We also tested the filters used in determining material issues to evaluate whether BCP makes informed business decisions that may create opportunities that contribute towards sustainable development.
- Auditing BCP's data management systems to confirm that there were no significant errors, omissions or mis-statements in the Report. We did this by reviewing the effectiveness of data handling process, and systems.
- Interviewing people involved in reporting the data for the selected indicators within the reporting scope. Purpose of interviewing these responsible persons is to verify the accuracy and reliability of the supporting evidence presented for the selected indicators.  
LRQA did not verify the data back to its original sources, nor did it assess the accuracy and completeness of the data reported by individual locations for all selected indicators, except for energy consumption within the organization, Scope 1 GHG emission, Scope 2 GHG emission and GHG emissions intensity.
- Reviewing BCP's Integrated Sustainability Report 2023 based on the agreed criteria and term of engagement.

**Observations**

Further observations and findings, made during the assurance engagement, are:



- **Stakeholder inclusivity:** We are not aware of any key stakeholder groups that have been excluded from BCP's stakeholder engagement process. BCP has open dialogue with all stakeholders. Each of BCP's business units have applied various methods for engagement with their relevant stakeholders, either through:
  - usual communication during day-to-day operations, or
  - specific engagement activities such as opinion surveys, focus groups, etc.Engagement results from each business unit are then consolidated to the corporate level. BCP's sustainability vision and strategy, and the content of this report, have been informed by the views and expectations from these stakeholders' engagement outcomes.
- **Materiality:** We are not aware of any material issues concerning BCP's sustainability performance that have been excluded from the report. BCP has identified its relevant actual and potential sustainable issues by considering stakeholder engagement results, its sustainable context, business relationships, sector specific issues as well as global trends, etc. The resultant topics are then prioritized by impact assessment. These identified material issues also influence BCP's sustainable strategy, management approaches and performance disclosures.
  - **Responsiveness:** BCP has established and implemented processes for responding to concerns from various stakeholder group as well as management approaches for addressing all its material issues. We believe these communication processes are effective in explaining BCP's aim in contributing towards sustainable development. However, BCP should extend its reporting scope of:
    - Significant Air emissions (GRI 305-7 (2016)) and Significant Spill (GRI 306-3 (2016)) to cover all oil terminals, BFPL and BGN as the reported data is currently only for a single BCP refinery and oil terminal at Sukhumvit 64 Road.
    - Waste generated, waste diverted from disposal and waste directed to disposal as well as work-related injuries, work-related ill health and emergency preparedness to cover all business units to align with the reporting boundary of energy and GHG emissions indicators.Extending the reporting scope for the above indicators, will allow BCP to better demonstrate its complete responsive at addressing these issues at a broader level.
  - **Impact:** BCP has implemented processes to measure, evaluate and manage impact(s) relevant to its material topics.
- **Reliability:** Data management systems are considered to be properly defined and implemented for collecting and calculating the data and information associated with the selected indicators.

#### LRQA's standards, competence and independence

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training, and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

The verification is the only work undertaken by LRQA for BCP and as such does not compromise our independence or impartiality.



Paveena Hengsriratwat  
LRQA Lead Verifier

22 March 2024

On behalf of LRQA (Thailand) Limited  
No.252/123, Muang Thai – Phatra Complex Tower B, 26th Floor, Unit 252/123 (C),  
Ratchadaphisek Road, Huaykwang Sub-District, Huaykwang District,  
Bangkok, 10310 Thailand

LRQA reference: BGK00001038

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**Bangchak Corporation Public Company Limited**  
Head office : 2098 M Tower Building, 8th Floor, Sukhumvit Road,  
Phra Khanong Tai, Phra Khanong, Bangkok 10260 Thailand.  
Tel : 0 2335 8888 Fax : 0 2335 8000  
[www.bangchak.co.th](http://www.bangchak.co.th)