bangchak

Climate Strategy 2026

Content

Bangchak discloses climate-related information with reference to the Task Force on Climate-related Financial Disclosures (TCFD), which provides a foundational structure for IFRS S2 issued by the International Sustainability Standards Board (ISSB). Our disclosure approach aligns with the TCFD recommendations (2017) and the requirements set out in IFRS S2 (2023). **This report covers the calendar year 2025** and presents information across the four core areas: Governance, Strategy, Risk Management, and Metrics & Targets. https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards-issb/english/2023/issued/part-a/issb-2023-a-ifrs-s2-climate-related-disclosures.pdf?bypass=on .

Disclosure Area

Governance

- *TCFD: Disclose the company's governance around climate-related risks and opportunities.*
- *IFRS S2: To understand the governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.*

Strategy

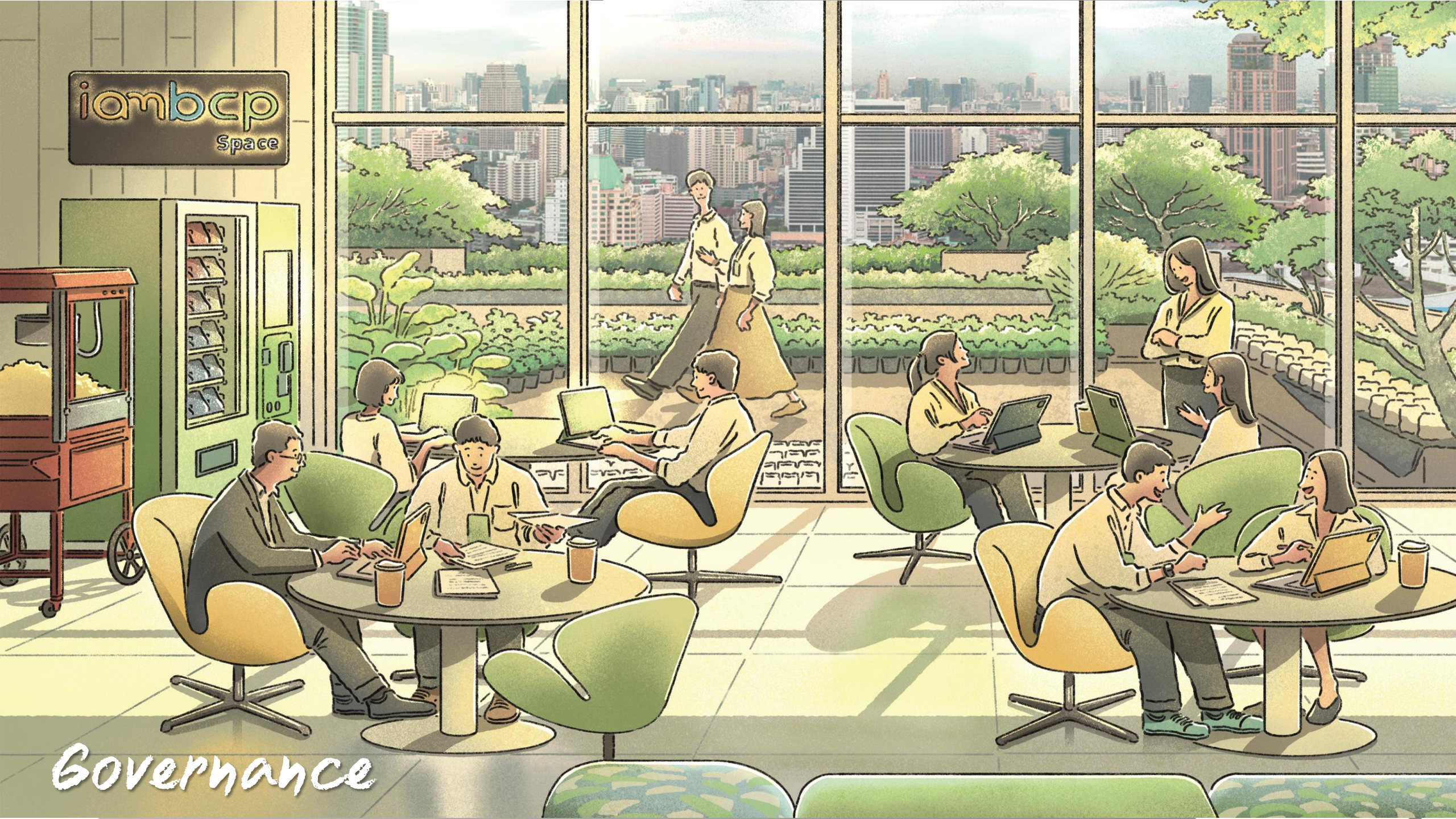
- *TCFD: Disclose the actual and potential impacts of climate-related risks and opportunities on the company's businesses, strategy, and financial planning where such information is material.*
- *IFRS S2: To understand an entity's strategy for managing climate-related risks and opportunities.*

Risk Management

- *TCFD: Disclose how the company identifies, assesses, and manages climate-related risks.*
- *IFRS S2: To understand an entity's processes to identify, assess, prioritize and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process.*

Metrics & Targets

- *TCFD: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.*
- *IFRS S2: To understand an entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation.*



Governance

Governance

Describe the **board's oversight** of climate-related risks and opportunities.

Bangchak has board of directors and executive management responsible for the oversight and management of climate-related issues in term of risks and opportunities including **monitors progress towards targets and relation to remuneration performance.** Roles and responsibilities of The Board of Directors.

The Board of Directors oversees the climate-related strategy through the Sustainability and Risk Management Committee. The Board collectively possesses expertise in energy transition, climate risk, and sustainable finance. **Directors receive periodic training on climate-related regulations, carbon markets, and low-carbon technologies to support informed strategic oversight**.

Board level committee supervise through The Sustainability and Corporate Governance Committee (SCGC) which conducts an annual review of directors' and executives' readiness using a Board Skill Matrix 56-1-one-report-2024 (PDF page 204) including expertise in Climate Governance. If skill gaps are identified, targeted training is provided**.**

In cases where climate-related issues arise, responsibility for managing these matters is assigned to and overseen by designated management positions. **Our climate committees comprise of** Executive level sustainability-specific committee (**SPC**) **and** Management level sustainability-specific committee (**SMC**).

Governance

Describe the **board's oversight** of climate-related risks and opportunities.

Bangchak has CPG Task Force (Corporate Planning, Corporate Compliance, Innovation and Business Development Group Functional Task Force) to review the common practices guidelines of companies within group for the strategic planning, new business initiatives, organizational governance, sustainable development, and Net Zero GHG Emission. Finally, seeking approval from SSS Steering Committee (Strategic Steering Committee) for promoting collaboration processes among the companies within group. **We use internal carbon price to help identify revenue opportunities, risk, and as an incentive to drive maximum energy efficiencies to reduce costs and guide capital investment decisions**.

Governance

Describe the **board's oversight** of climate-related risks and opportunities

Pol. Gen. Suwat Jangyodsuk
Chairperson of the Board of Directors

Board of Directors

Pol.Gen. Samran Nualma
Chairperson of the Sustainability and Corporate Governance Committee

Mr. Prasong Poontaneat
Chairperson of the Enterprise-wide Risk Management Committee

Sustainability and Corporate Governance Committee (SCGC)

- **Propose** corporate governance and sustainability development practices, including **climate change related issues** to the Board of Directors.
- Supervise the performance of the Board of Directors and the management in accordance with good corporate governance and sustainability development principles.
- **Review** good corporate governance and **sustainability development practices**. By comparing with international standards and making recommendations to the Board of Directors for continuous improvement and response to stakeholders' needs and expectation.
- **Assign** good corporate governance and sustainability development policy, including **climate related guideline**.
- Perform duties as assigned by the Board of Directors.

Enterprise-wide Risk Management Committee (ERMC)

- **Propose** policy, strategy and goals for **risk management including climate-related risk**.
- Develop an organization-wide risk management system for continuous efficiency.
- Promote cooperation in risk management at all levels of the organization.
- Supervise the company to have appropriate and effective risk management.
- The Chairman of the Enterprise-wide Risk Management Committee reports the results of the next meeting to the Board of Directors.
- Perform duties as assigned by the Board of Directors.

Governance

Describe the **board's oversight** of climate-related risks and opportunities.

Bangchak's governing bodies incorporate climate-related risks and opportunities across strategic planning, major investment decisions, and risk management processes. At each stage, the Board evaluates **trade-offs between short-term financial impacts and long-term climate resilience, carbon cost reduction, and sustainable value creation.** Ensuring that oversight is aligned with the company's Net Zero commitment and low-carbon transition strategy.

Corporate Strategy Oversight

The Board of Directors and Executive Committee of Bangchak play an active role in overseeing how climate-related risks and opportunities influence the company's long-term strategic direction. Bangchak has set a clear ambition to achieve **Net Zero GHG Emissions by 2050**, with a strategic transformation guided by the "**4S Strategy**" (Security, Synergy, Sustainability, Scalability) and the "**4G Approach**" (Green Business, Green Production, Greenovative Experience, Green Society).To accelerate the shift toward a low-carbon economy, **the Board has endorsed the establishment and expansion of new green business units** such as **BCPG** (renewable energy) and **BBGI** (bio-based products). These strategic decisions demonstrate the company's commitment to climate-resilient growth. **Although the majority of Bangchak's revenue continues to be generated from the oil refinery business, the Board recognizes the long-term risks associated with carbon-intensive operations. The decision to invest in new green ventures—despite their lower short-term profitability—reflects a deliberate trade-off between near-term financial returns and long-term climate resilience, regulatory preparedness, and future value creation.**

Decision-Making in Major Transactions

Climate-related considerations form an integral part of the Board's evaluation framework for capital allocation and major investments. For example, Bangchak has invested in a **Sustainable Aviation Fuel (SAF)** facility using used cooking oil as feedstock, which can **reduce CO_2 emissions** by up to **80%** compared with conventional jet fuel. The company has also invested in a **pipeline oil transportation system** to **reduce GHG emissions** from road transport by approximately **10,000 tons of CO_2 per year**. These investments were approved despite high upfront costs because they help mitigate future exposure to carbon pricing mechanisms, strengthen operational efficiency, and position the company as an ESG leader in the energy sector. **The Board carefully assesses the balance between the significant capital requirements of climate-positive projects and the long-term value gained from lowering transition risks, reducing future compliance costs, accessing green financing, and enhancing reputation among stakeholders.**

Governance

Describe the **board's oversight** of climate-related risks and opportunities.

Integration with Risk Management Processes and Policies

The Board oversees the integration of climate-related risks—both physical and transition into the company's enterprise risk management (ERM) framework. Climate scenarios, carbon pricing assumptions, and regulatory trends are regularly reviewed to ensure alignment between risk management processes and the company's strategic direction. Policies related to emissions reduction, energy efficiency, sustainable procurement, and circular economy initiatives are periodically updated under Board supervision to address evolving climate risks and opportunities. Climate risk reporting and key performance indicators (KPIs) are presented to the Board to support informed and responsible decision-making. **Incorporating stricter environmental policies may temporarily increase operational costs, but the Board acknowledges that these actions lower long-term exposure to climate-related disruptions, regulatory penalties, and supply chain risks while strengthening competitiveness in emerging low-carbon markets.**

Governance

Describe **management's role in assessing and managing** climate-related risks and opportunities

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

Sustainability Policy Committee (SPC)

- **Provide policy and strategy direction** for the company's business in accordance with the mission corporate culture, with responsibility to stakeholders, including economic, social, and environmental aspects **especially climate change and climate-related risks and opportunities** in accordance with the international sustainability direction, in order to ensure the organization's sustainability. **The target of Net Zero GHG emission by 2050 has been defined.**
- **Progress the report** to the Sustainability and Corporate Governance Committee (SCGC)

Chairperson: Ms. Gloyta Nathalang
Senior Executive Vice President, Sustainability Management and Corporate Communications

Sustainability Management Committee (SMC)

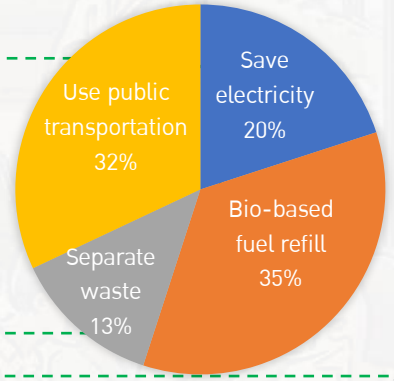
- **Conduct the work plans and manage work** according to the responsibilities towards various groups of stakeholders according to the direction and framework specified by the Corporate Sustainability Policy Committee to bring innovation and GHG management tools to use within the Bangchak Corporation in order **to achieve Net Zero in 2050**
- **Prepare climate strategy and manage opportunities and risks arising from climate change**.
- Encourage work processes and development plans or events to **increase awareness, knowledge, and understanding of sustainability including climate change**. Participating in operations with Bangchak Corporation stakeholders by submitting a report to the working committee or reviewing in order to promote collaboration among affiliated companies in Strategic Corporate Governance Planning (CPG Task Force)
- Progress the report to the Sustainability Policy Committee (SPC)

Governance

Describe **management's role in assessing and managing** climate-related risks and opportunities

Bangchak provide incentives for the management of climate change issues including the attainment of near-term and long-term targets. **Chief Executive Officer (CEO) is the highest management level which response to cap on GHG Emission as KPI** (reflect to GHG emission reduction annually). **We associate this KPI to related-Executive Vice President and Business Unit Managers**, respectively. **We implement internal control systems and audit processes to ensure that operations comply** with corporate policies and international standards. **Reporting to the Board includes updates on progress toward Net Zero targets**, greenhouse gas emission **reductions**, as well as the assessment of **emerging climate-related risks and opportunities**. Climate-related performance indicators are integrated into the executive remuneration framework. Key indicators include greenhouse gas emissions reduction, energy efficiency improvements, and progress toward the decarbonization roadmap.

To ensure that climate-related ambition and goal are embedded throughout the company, **We set KPI's employees to reduce personal carbon emissions** by activities recording for eco-friendly refueling, waste separation, reducing electricity usage, and using public transportation. Participation in activities to reduce greenhouse gas (GHG) emissions in response to climate change (Climate Action). The 2025 goal is to carry out Climate Action activities to reduce GHG emissions by 111–130 $kgCO_2$ per person. **Finally, these performance will reflect to monetary as bonus**. **In the year 2025, we can reduce GHG emissions totally 109 tCO_2e.**



Moreover, **we led to establish the Carbon Markets Club to engage society in carbon markets and encourage all sectors to adapt to a sustainable Net Zero future**. On 28 June 2021, Carbon Markets Club, Thailand's first climate-focused club for greenhouse gas reduction, was established through the collaboration of 11 private-sector organizations, led by Bangchak and BCPG. The Club's mission is **to support government efforts in advancing the voluntary carbon market**, **while raising broad awareness of the climate crisis**. As of 27 June 2025, , the Club has grown to over 1,500 members, both individuals and organizations, **and has extended its impact to the regional level through collaboration under the ASEAN Common Carbon Framework (ACCF)**. We have developed a Marketplace and Digital Platform **for trading carbon credits and RECs, with total reductions exceeding 1.6 million tons of CO_2 equivalent**, comparable to planting 190 million trees. We **also provide free carbon footprint calculators for organizations** (CFO: Carbon Footprint Tracking for Organisations) **and individuals** (MyCF: My Carbon Footprint Calculator for Individuals), and continue to organize communication activities to foster understanding and broad participation.


Strategy

Strategy

For oil & gas refinery and marketing sector which comprise of **Phra-Khanong refining and Bangchak service stations including Head quarter and Regional Offices**. In this calendar year, our complex refinery recorded an average production capacity of 122 KBD, and we operate more than 240 COCO-type service stations (our distribution channels through industrial & retail). **GHG emissions inventory of Bangchak scope 1, 2 and 3 integrates both Centralized approaches** (GHG accounting and reporting are centrally governed by the Sustainability function, which defines methodologies, consolidates and validates data, and oversees TCFD-aligned disclosures) **and Decentralized approaches** (Business units are responsible for activity data collection, preliminary emissions calculations, and emissions reduction within their respective operations).

In identifying climate-related risks and opportunities that could reasonably be expected to affect the Bangchak's prospects, We utilize information available as of the reporting date. The assessment incorporates a range of inputs **to ensure a comprehensive and context-specific evaluation**, including

- **Historical events**, such as flooding incidents that have disrupted refinery operations and logistics.
- **Current conditions**, including observable trends in consumer behavior shifting toward cleaner and more sustainable energy products.
- **Forecasts of future conditions**, such as anticipated risks and opportunities and to formulate strategic responses that align with the evolving climate landscape. changes in climate related regulations and alternative technologies. This approach enables Bangchak to effectively assess climate-related.

Physical Risks

- Climate change such as **flooding and drought** can significantly impact refinery operations as well as logistics and storage infrastructure. These physical risks may lead to disruptions in the supply chain and result in increased costs associated with risk management and operational recovery.

Transition Risks

- Changes in government policies, such as **carbon price mechanism**, may impact the Bangchak's operations and long-term strategy.
- Increasing **expectations from consumers, investors,** and business partners for more sustainable products and practices present both reputational and operational challenges.

Climate-related Opportunities

- Development of new products, such as **Sustainable Aviation Fuel (SAF)**, to meet the growing demand from environmentally conscious markets
- Operational efficiency improvements through the **adoption of clean technologies** and **increased investment in renewable energy**

Bangchak has assessed that climate-related risks and opportunities are expected to materialize across the following timeframes:

Short term	**Short term (0-1 year):** A period associated with current operations, risk management activities, and the need for immediate responses to climate-related factors. Bangchak operates on an annual business cycle, requiring short-term management of market volatility including oil prices, exchange rates, and feedstock costs—as well as compliance with yearly regulatory and ESG-reporting requirements. Additionally, acute climate risks such as heatwaves, storms, and floods may disrupt production and logistics, necessitating immediate operational responses within the year.
Medium term	**Medium term (1-5 years):** A timeframe used for implementing the company's energy transition strategies and investment plans, where outcomes begin to materialize within a few years. The medium-term horizon aligns with the company's near-term greenhouse gas reduction targets and reflects the timeframe for transforming the energy business, including the expansion of low-carbon and green product portfolios.
Long term	**Long term (more than 5 years):** A period focusing on structural transitions in the energy sector and long-term climate-related risks that influence the company's future strategies and business model. Long-term horizons consider chronic climate risks—such as rising temperatures, sea-level rise, and shifting seasonal patterns—along with evolving national and global climate policies that shape long-term investments. Industry trends also indicate a transition from oil-based businesses toward a green energy ecosystem.

Strategy

Describe the **climate related risks and opportunities** the company has **identified over the short, medium, and long term**

Bangchak identify key climate change risks and **integrate climate drivers into environmental scanning and identifying factors having potential impact**.
We evaluate climate-related risks in time horizon: short-term (0-1 years), medium-term (1-5 years) and long-term (more than 5 years).

For Physical scenario; **we apply SSP1-2.6** (A pathway delivers a temperature increase of about 1.8°C by 2100 –reaching net-zero after 2050). **and SSP5-8.5** (A pathway delivers a temperature increase of about 4.4°C by 2100 –fossil fuel + energy-intensive lifestyles.

For Transition scenario, Bangchak uses the IEA World Energy Outlook where the world transitions to low carbon sources of energy; **IEA NZE 2050** (below degrees Celsius) **& IEA STEPs** (Above degrees Celsius) **both qualitative and quantitative** climate-related scenario analysis including the goal of limiting the global temperature increase to no more than 2 degrees Celsius by reducing greenhouse gas emissions. We apply climate-related risks in existing and new operations.

Physical Risks

Acute (Event driven):
1. **River Flood and Urban Flood**

Chronic (Long term shifts):
2. **Water scarcity (Drought)**
3. **Sea-level rise**

Transitional Risks

Policy and Regulation:
4. Current: **Bio-based content**
5. Emerging (Carbon price) : **Carbon tax**
6. Emerging (Carbon price): **ETS**
7. **Draft Climate Change Act**

Technology:
8. **GHG reduction cost**

Market:
9. Price of feedstock (**crude oil**)
10. Price of product (**fuel oil**)

Reputation:
11. **Investor demands and data request**

Risks

Opportunities

Opportunity

Policy and Regulation:
1. **Bio-based content**: Biodiesel, Ethanol (increased as required by regulation)
2. **Carbon price**: ETS

Market:
3. **Renewable energy**: Electricity (Increased demand for renewable energy)

Strategic Planning Risk Management

Financial impact

- Asset and Property Loss
- Revenues
- Expenditure

Strategy

Describe the **climate related risks and opportunities** the company has **identified over the short, medium, and long term**

Physical Risks

Bangchak has identified physical risk hazards **using both qualitative and quantitative assessment methodologies.**

Risk Assessment Process

1 Geospatial Information for Baseline Natural Hazards Define

Open Source Datasets → Key Natural Hazards

Bangchak applies ThinkHazard, developed by the World Bank Group, to obtain an overall assessment of climate-related hazards relevant to each location. The hazard levels used are based on published datasets sourced from various private, academic, and public institutions.

For more information: Think Hazard

An initial baseline hazard assessment was conducted for Bangchak using Thailand-specific data to represent conditions in the **Phra Khanong refining area, as well as Bangchak's service stations, including the Head Office and Regional Offices.**

2 Climate Change Projections

Climate Data CMIP-6 for SSP1-2.6 and SSP5-8.5 → Data for Key Climate Indicates → Qualitative Risk Rating

Extract the hazard risk data from *Climate Change Knowledge Portal*

- Time period: Historical period (1995-2014), 2030, 2040 and 2050
- Scenario: SSP1-2.6 and SSP5-8.5

Data extracted from *Climate Change Knowledge Portal*.

Note:

- SSP1-2.6: 1.8°C by 2100 reaching net zero after 2050, SSP5-8.5: 4.4°C by 2100 fossil fuel + energy intensive lifestyles.
- The IPCC's Fifth Assessment Report (AR5) relies heavily on the Coupled Model Intercomparison Project, Phase 6 (CMIP6), a collaborative climate modelling process coordinated by the World Climate Research Programme (WCRP). CMIP6 provide projections of future climate change on near term and long term. The Climate Change Knowledge Portal (CCKP) provides global data on historical and future climate, vulnerabilities, and impacts. For more information of Climate Change Projection methodology, Download Data | Climate Change Knowledge Portal (worldbank.org)

Strategy

Describe the **climate related risks and opportunities** the company has **identified over the short, medium, and long term**

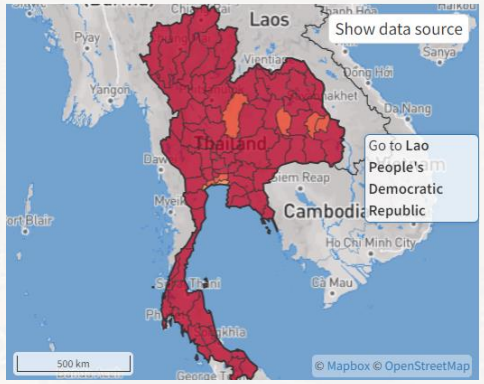
Physical Risks

Define Baseline natural hazard by ThinkHazard!

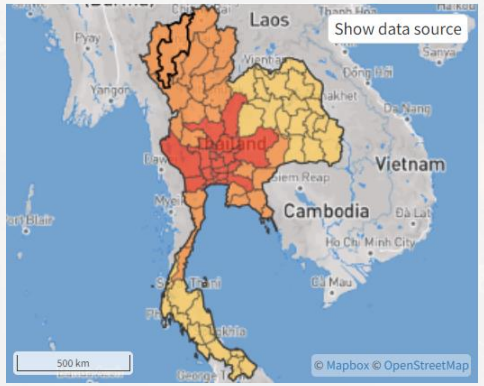
Location: Thailand (Cover Phra-Khanong refining area and COCO type service stations of Marketing Business including Head quarter and Regional Offices)

Hazard level

- High
- Medium
- Low
- Very low



Urban and River flood hazard are classified **as high** based on modeled flood information currently available to this tool. This means that potentially damaging and life-threatening urban floods are expected to occur at least once in the next 10 years. Project planning decisions, project design, and construction methods must take into account the level of urban and river flood hazard.



Water scarcity (Drought) is classified **as medium** according to the information that is currently available to this tool. This means that there is up to a **20% chance droughts will occur in the coming 10 years**. Based on this information, the impact of drought must be considered in all phases of the project, in particular its effect on personnel and stakeholders, and during the design of buildings and infrastructure.

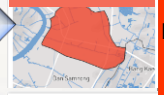
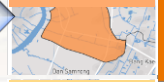
Strategy

Describe the **climate related risks and opportunities** the company has **identified over the short, medium, and long term**

Physical Risks

Define Baseline natural hazard by ThinkHazard! and Climate change projection by Climate Change Knowledge Portal For Development Practitioners and Policy Makers

Location: Phra-Khanong refining area and Head quarter and Regional Offices

	ThinkHazard!	SSP5-8.5			SSP1-2.6		
	2025	2030	2040	2050	2030	2040	2050
Water scarcity	Medium 	Moderate Increase	Slight Increase	Slight Increase	No change	Slight Increase	Moderate Increase
Urban flood	Low 	Slight Increase	Moderate Increase	Moderate Increase	Moderate Increase	Moderate Increase	Moderate Increase
River flood	Very low 	Slight Increase	Moderate Increase	Moderate Increase	Slight Increase	Moderate Increase	Moderate Increase

Legend and Hazard Score for SSP1-2.6 and SSP5-8.5 scenarios

	Category	Drought (Change in annual drought probability	Riverine & Urban Floods (change in 1 day and 5 day maximum rainfall)
3	Significant Increase	<-1	>10%
2	Moderate Increase	<-0.5	>5%
1	Slight Increase	<0	>0%
0	No Change	0	0%
-1	Slight Decrease	>0	<0%
-2	Moderate Decrease	>0.5	<-5%
-3	Significant Decrease	>1	<-10%

Categorization criteria considers all climate indicator values across scenarios and time horizons. The climate indicator went through a normalization process which involves comparing the minimum and maximum value across all time horizons and scenarios. Process depends on the indicator; some may be normalized by climate zone whereas some are done globally

Risk Driver Find Out

- **Water scarcity (Drought)** is classified **as medium** based on modeled information currently **available to ThinkHazard tool**. Based on this information, the impact of drought must be considered in all phases of the project, in particular its effect on personnel and stakeholders, and during the design of buildings and infrastructure. **Projected climate trends show a decline under SSP5-8.5 and a rise under SSP1-2.6 scenarios**. Thus, **if the world continues to rely on fossil fuels and maintain energy-intensive lifestyles, Bangchak will be more significantly impacted by this situation**. And **water availability is crucial to Bangchak's operations as it directly influences production**. **Therefore, drought has been selected as our key risk driver**.
- **Urban and River flood** hazard are classified **as low and very low** based on modeled flood information currently **available to ThinkHazard tool**. They recommend project planning decisions, project design, and construction methods should consider the level of urban and river flood hazard. While, **Projected climate trends show a moderate increase across both SSP5-8.5 and SSP1-2.6 scenarios. The severity of this situation significantly affects operations, with all refining units shut down and logistics across the supply chain delayed. As a result, flood has been prioritized as a key risk driver.**

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Physical Risks

Bangchak set up **context-specific plan** to mitigate and adapt to response.

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain **(Effects on Financial)**	Assessment and Prioritization		
			Short term	Medium term	Long term
Acute	**River Flood and Urban Flood**	• Asset damage **(3 MB/day)**			
		• Business disruption time - Stop refinery operation **(30 MB/day)**			
		• Business disruption time - Service station closing **(1 MB/day)**			
		• Insurance cost - Increase in insurance cost **(0.0075 MB/day)**			

Effects on strategy and decision-making:

- **Bangkok Metropolitan flood-protection capacity** Bangchak incorporates Bangkok's flood-protection capability (approx. 2.23 m above mean sea level) into long-term asset-protection planning and investment decisions.
- **Continuous monitoring of river water levels** Continuous monitoring of river levels during the rainy season informs business-continuity planning and supports operational adjustments in potential flood scenarios.
- **Investment in preliminary flood-protection design at the refinery** Approximately 3 MB was invested to develop preliminary engineering for refinery flood-protection, guiding future resilience-related CAPEX.
- **Investment in flood-prevention equipment** Approximately 1 MB was invested in flood-prevention equipment to reduce operational disruption and strengthen short-to-medium-term resilience.
- **Flood-risk-based site selection for service-station expansion** Flood-risk assessments are applied to prioritize non-flood-prone locations for new service stations, reducing long-term operational risk.
- **Flood-resilient design for service stations** Flood-prevention measures are integrated into design standards for new and renovated service stations, guiding engineering and CAPEX planning.
- **Scheduled drainage maintenance** Regular clearing of drainage systems supports uninterrupted operations during the rainy season and is embedded in operational-risk management routines.
- **Annual BCM and CMP exercises** Yearly Business Continuity Management and Crisis Management Plan exercises strengthen preparedness and inform organization-wide decision-making for climate-related physical risks.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Physical Risks Bangchak set up **context-specific plan** to mitigate and adapt to response.

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain **(Effects on Financial)**	Assessment and Prioritization		
			Short term	Medium term	Long term
Acute	**Drought**	• Business disruption time - Stop refinery operation **(30 MB/day)**			
		• Higher cost of raw materials - Refinery uses groundwater 10%			

Effects on strategy and decision-making:

- **Daily water-quality monitoring** Bangchak monitors MWA water-supply quality daily to inform operational decisions and ensure reliable process-water availability.
- **Investment in alternative groundwater resources** Approximately 1.5 MB was invested to improve groundwater wells as an alternative water source, enhancing supply resilience.
- **Investment in RO and EDI system upgrades** Approximately 32 MB was invested to upgrade RO, EDI, and RO-city units, strengthening water-treatment capacity and long-term operational stability.
- **Investment in cooling-tower efficiency improvements** Approximately 375 MB was invested to improve cooling-tower cycle efficiency, reducing water consumption and supporting long-term resource-optimization strategy.
- **Water-stress assessment using AQUEDUCT** A water-stress assessment via the AQUEDUCT tool identified the refinery site as a high-risk (40–60%) area, guiding strategic planning for water-resource management.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Physical Risks

Bangchak set up **context-specific plan** to mitigate and adapt to response.

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain **(Effects on Financial)**	Assessment and Prioritization		
			Short term	Medium term	Long term
Chronic	**Sea level rise**	• Asset damage **(3 MB/day)**			
		• Business disruption time - Delay raw material delivery **(30 MB/day)**			
		• Insurance cost - Increase in insurance cost **(0.0075 MB/day)**			

Effects on strategy and decision-making:

- **Bangkok Metropolitan flood-protection capacity** Bangchak considers Bangkok's flood-protection capability (approx. 2.23 m above mean sea level) in long-term asset-protection and infrastructure-planning decisions.
- **River-level monitoring and BCP readiness** Bangchak monitors river-water levels during the rainy season and integrates this information into business-continuity planning to support timely decision-making in potential flood scenarios.

Strategy

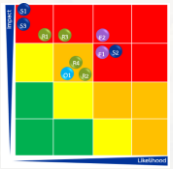
Describe the **climate related risks and opportunities** the company has **identified over the short, medium, and long term**

Transitional Risks

Transitional Risk Assessment Process

- **Identify Impact drivers** ----- Determine the factors putting pressure on companies into a low-carbon economy transition

- **Prioritisation of risks and opportunities** ----- Analysis of risks and opportunities to business based on each driver



- **Scenario analysis** ----- Qualitative assessment of identified impact under two transition scenarios by 2030 and 2050

International Energy Agency

- **Strategic response** ----- Identify potential response measures to risk and opportunities

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Transitional Risks

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain	Assessment and Prioritization		
			Short term	Medium term	Long term
Policy and Legal	**Carbon price (Carbon Tax)**	• Higher cost of product			
		• Higher cost of crude oil suppliers mandates a carbon price			
		• Decrease in revenue from higher unit price			

Effects on strategy and decision-making:

- **CFP data preparation** Preparing CFP data enables Bangchak to assess potential carbon-tax exposure and supports strategic planning for future GHG-reduction measures.
- **Carbon-tax awareness collaboration (MOU)** Bangchak signed an MOU with the Excise Department, Chulalongkorn University, and OR to promote carbon-tax awareness, supporting strategic engagement on emerging policy and market shifts related to energy-transition costs.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Transitional Risks

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain	Assessment and Prioritization		
			Short term	Medium term	Long term
Policy and Legal	**Carbon price (Cap and trade: ETS)**	• Higher cost of product			
		• Bangchak may need to purchase or bid for greenhouse gas emission allowances if its emissions exceed the allocated quota			
		• Decrease in revenue from higher unit price (resulting from higher cost): GHG emission from core activities, such as oil refining, will be taxed based on the amount of CO_2 emitted, which will directly increase production costs			

Effects on strategy and decision-making:

- **Internal Carbon Pricing pilot with TGO** Bangchak participated in TGO's pilot project on Internal Carbon Pricing (ICP), using carbon-cost assessment to inform investment decisions and guide strategic planning for future carbon-cost exposure.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Transitional Risks

Effects on financial

Bangchak assessed the **impacts of carbon prices across multiple scenarios** that reflect current real-world conditions and the baseline assumptions of the International Energy Agency's Global Energy and Climate Model Documentation 2025 (IEA, Paris). Bangchak has set ambitious **climate targets, including a 30% reduction in greenhouse gas emissions by 2030 (near-term target) and achieving Net Zero GHG emissions by 2050 through a 90% emissions reduction and 10% offsetting using removal-based carbon credits**. Bangchak conducted climate scenario analysis aligned with the IEA Net Zero Emissions (NZE) scenario and the Stated Policies Scenario (STEPS). **We assessed potential impacts on operating costs, asset valuation, and future capital allocation**. Assumptions applied in the scenario development include:

- **Stated Policies Scenario**: Assumes alignment with the European Union Emissions Trading System (EU ETS) as the reference carbon price, given that it is the most developed carbon market, provides the strongest price signals, and represents the trading bloc whose CBAM measures Thailand will directly encounter.
- **Net-Zero Emissions by 2050 Scenario**: Assumes alignment with Selected Emerging Market and Developing Economies (Selected EMDEs), as Thailand fits this category due to its larger economic scale, stronger institutional capacity, higher income level, and its position as an advanced emerging market in Asia.
- Foreign Exchange Rate Assumption: US Dollar to Thai Baht conversion — last updated 23 January 2026, 08:12 UTC.
- Year 2025 Assumption: Thailand has not yet implemented a Carbon Tax.
- Year 2035 Assumption: Bangchak aims to achieve a 30% reduction in GHG emissions by 2030 as its near-term target, Thailand enforces 100% Carbon Tax implementation.
- Year 2050 Assumption: Bangchak targets 90% GHG reduction, Thailand enforces 100% Carbon Tax implementation.
- Emissions Trading Scheme (ETS) Assumption: Cap-and-Trade starts in 2031, Annual cap reduction at 2%, in line with EU ETS design principles.
- Carbon Payment Interpretation: Negative Carbon Payment indicates additional revenue generated from trading emission allowances.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

bangchak

Transitional Risks

Effects on financial

THB million

Scenario: Carbon tax paid	Without Target		With Target (BCP NET)	
	2035	2050	2035	2050
STEPS	2,535	4,957	1,521	496
NZE	3,561	5,697	2,137	570
Scenario: Cap and Trade (negative means additional revenue from trading allowances)				
STEPS	203	1,884	-811	-2,577
NZE	285	2,165	-1,139	-2,963

The Stated Policies Scenario (STEPS)

an outlook based on the latest policy settings

The Net Zero Emissions by 2050 Scenario (NZE)

a pathway in which the energy sector achieves net zero carbon dioxide (CO_2) emissions globally by 2050, in line with limiting the long-term global average temperature to 1.5 degrees Celsius (°C).

In 2035, if Bangchak does not adapt or take action in line with the BCP NET target, the Company may incur **losses** from the cap-and-trade system amounting to approximately **THB 203–285 million per year**. Conversely, if Bangchak successfully reduces GHG emissions in accordance with the BCP NET plan by 2035, the Company would generate revenue from trading carbon allowances in the range of THB 811–1,139 million per year. Similarly, **in 2050 (long term)**, Bangchak is not expected to experience negative impacts from the cap-and-trade system in that year; instead, the Company would benefit from positive impacts, provided that the BCP NET plan is effectively implemented.

Bangchak would face more significant negative impacts under a carbon tax scenario in which a 100% tax is imposed on Scope 1 and Scope 2 emissions. Specifically, **in 2035**, if Bangchak does not adapt or take action in line with the BCP NET target, the Company could incur **losses** of approximately **THB 2,535–3,561 million per year**. These impacts would be reduced to THB 1,521–2,137 million per year if Bangchak successfully reduces GHG emissions in accordance with the BCP NET plan by 2035. Similarly, **in 2050 (long term)**, Bangchak would experience lower negative impacts if the BCP NET plan is effectively implemented.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Transitional Risks

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain	Assessment and Prioritization		
			Short term	Medium term	Long term
Policy and Legal	**Draft Climate Change Act**	• The company is required to prepare detailed greenhouse gas emission reports and undergo verification by external agencies, which leads to increased administrative and auditing costs.			
	Bio-based content	• Government policies change, such as reducing support for bioenergy, it may impact BBGI's revenue and investment plans.			
Technology	**GHG reduction cost**	• Requires significant transition investment to clean energy, such as low carbon emission fuel - Hydrogen infrastructure, producing SAF (Sustainable Aviation Fuel) from used vegetable oil and developing lithium battery technology.			

Effects on strategy and decision-making:

- **Fuel switching to lower emission fuels** Bangchak is transitioning from fuel oil to natural gas to reduce operational emissions and support long-term decarbonization strategy.
- **Assessment of hydrogen and negative-emission technologies** Bangchak collaborates with partners to study hydrogen and negative-emission technologies such as CCS to inform future low-carbon investment pathways.
- **Operational-efficiency improvements – heat loss prevention** Heat loss prevention coatings were installed on furnace walls to reduce energy consumption and enhance process efficiency.
- **Solar energy installation at refinery** Solar systems were installed on refinery rooftops to increase renewable energy use and support emissions reduction goals.
- **Increasing electric vehicle adoption** Bangchak is increasing the share of EVs in its vehicle fleet to reduce transportation-related emissions.
- **Employee engagement in energy conservation** Bangchak empowers employees to lead energy efficiency initiatives, supporting organizational cultural transformation toward sustainability.
- **Internal KPIs for energy and GHG intensity** Energy consumption and GHG intensity KPIs are set for each business unit to guide decision making and ensure alignment with corporate reduction targets.
- **Carbon Markets Club initiative** Bangchak established the Carbon Markets Club to promote carbon credit trading and expand access to high quality credits supporting Net Zero strategies.
- **TCFD/IFRSS2 aligned disclosures** TCFD/IFRSS2 aligned reporting strengthens climate-risk management and supports informed decisionmaking while enhancing investor confidence.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Transitional Risks

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain	Assessment and Prioritization		
			Short term	Medium term	Long term
Market	**Price of feedstock (Crude oil price)**	• Increasing of crude oil price cause gross refining margin decreased. Volatile oil prices may affect investments in clean energy and GHG reduction, which are key components of BCP's climate strategy.			
		• Lower demand from higher crude oil price which affect to Company revenue			

Effects on strategy and decision-making:

- **Strengthening crude sourcing flexibility** Bangchak enhances crude-sourcing flexibility through the establishment of BCPT to support resilient feedstock management strategies.
- **Refinery operation optimization** Targeted operational improvement programs are implemented to enhance reliability, reduce downtime risks, and optimize crude and product inventory decisions.
- **Refinery upgrade for product diversification** Refinery upgrades enable the company to expand its product slate including the use of unconverted oil (UO) for lube base oil and paraffin wax supporting long-term diversification strategy.
- **Expanding value added product offerings** Bangchak expands product lines such as industrial solvents to increase value added potential and support strategic market diversification.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Transitional Risks

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain	Assessment and Prioritization		
			Short term	Medium term	Long term
Market	**Price of products (Fuel price)**	• Sale volume might decrease according to the lower demand according to the sustainability trend, or lower margin according to lower fuel price. The volatility of oil prices poses a significant risk that may affect the company's ability to invest in GHG reduction projects or transition to clean energy.			

Effects on strategy and decision-making:

- **Collaboration with BSRC** Bangchak collaborates with BSRC to enhance production efficiency and reduce operational costs, supporting long-term competitiveness.
- **Extended refinery maintenance cycle** The refinery maintenance cycle has been extended to improve production continuity and reduce unplanned downtime risks.
- **Business model development for enhanced returns** The Group is developing a diversified business model including the "Greenovative Destination" concept to strengthen return potential and respond to evolving customer behaviors.
- **The model incorporates on site offerings** such as a wide selection of food and beverage services from well-known brands, Grab & Go delivery options, uniquely designed service stations, and the installation of over 260 EV chargers across Bangchak stations nationwide. Retail EBITDA is forecasted to grow by 2030 compared to 2023.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Transitional Risks

Risk levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain	Assessment and Prioritization		
			Short term	Medium term	Long term
Reputation	**Investor demands and data request**	• Bangchak is required to invest in more detailed and transparent ESG data collection and reporting systems, such as preparing reports in accordance with IFRS S1/S2 standards and disclosing Scope 1, 2, and 3 emissions data.			
		• Institutional investors and banks are increasingly using ESG criteria as a filter for funding decisions. If Bangchak fails to demonstrate transparency or present a clear carbon reduction plan, it may face credit rating downgrades or limited access to financing.			
		• ESG ratings from external agencies, such as SET ESG Ratings or DJSI, influence investor confidence. If Bangchak receives a low score, it could lead to a decline in share price and trigger sell-offs from ESG focused funds.			

Effects on strategy and decision-making:

- **Dedicated ESG and climate-data capacity** Bangchak established a Climate Solutions Division and added personnel to manage ESG and climate-related data, strengthening decision making and reporting capabilities.
- **Stakeholder engagement processes** Bangchak implements structured stakeholder engagement processes to build trust and incorporate stakeholder expectations into strategic planning.

Strategy

Describe the **climate related risks and opportunities** the company has **identified over the short, medium, and long term**

Opportunity

Opportunity Assessment Process

Bangchak identifies climate-related opportunities through analysis of energy market trends, climate-related policies and regulations, and internal portfolio reviews. Climate-related scenario analysis, including a Net Zero scenario and scenario with a slower transition, is used to evaluate the resilience and financial viability of opportunities such as low-carbon fuels, carbon capture and storage, and diversification into lower-emission energy solutions. The results are integrated into capital allocation decisions, portfolio prioritization, and are monitored through KPIs related to low-carbon investment, emissions reduction, and revenue diversification.

Identification

- Analysis of regulatory trends, such as Net Zero policies, carbon pricing mechanisms, and fuel standards.
- Monitoring developments in alternative energy technologies, including hydrogen, biofuels, and carbon capture and storage (CCS).
- Analysis of changing customer demand toward cleaner and lower-carbon energy.
- Use of inputs from the strategy, research, and investment functions to identify new business opportunities.

Assessment

- Impact on the reduction of greenhouse gas (GHG) emissions across Scopes 1, 2 and 3.
- Alignment with Bangchak's Net Zero strategy.

Prioritisation

Opportunities are prioritized using a climate opportunity matrix, taking into account factors such as short-, medium-, and long-term economic value, regulatory and reputational risks, and the level of technological readiness.

Monitoring

Bangchak monitors progress through KPIs such as revenue from clean energy businesses and the amount of GHG emissions avoided, with regular reporting to the Board of Directors.

Strategy

Describe the **impact** of climate-related risks and opportunities **on the company's businesses, strategy, and financial planning**

Opportunity

Opportunity levels Very High High Medium Low

Climate-related risks		Current and anticipated effects on the entity's business model and value chain **(Effects on Financial)**	Assessment and Prioritization		
			Short term	Medium term	Long term
Policy and Legal	**Bio-based content (Biodiesel, Ethanol)**	• The requirement of biofuel content in transportation fuel by regulation would reflect in company's subsidiaries (BBGI, BSGF) which already expanded to low carbon economy. Bangchak operates biodiesel and ethanol production businesses through its subsidiaries BBGI, and SAF production would be operate by BSGF which aligns with the government's policy to promote the use of bioenergy. **(1.6-12.3 MB/day)**			
	Carbon price (Cap and trade: ETS)	• Bangchak is one of the founding members of the Carbon Markets Club (CMC), which plays a key role in promoting carbon credit trading in Thailand. Participation in the carbon credit market allows Bangchak to offset its greenhouse gas emissions and reduce its carbon tax burden. This allows Bangchak to access carbon credits at prices lower than the general market, reducing the overall cost of environmental operations.			
Marketing	**Renewable energy (Electricity)**	• Increased demand for renewable energy may increase revenue. Evolving consumer preferences toward more sustainable products. Bangchak has invested to Green Power Business (BCPG) to drive towards low-carbon economy. **(13-24 MB/day)**			
		• BCPG has partnered with Krungthai Bank to utilize I-REC (International Renewable Energy Certificate) as a tool to manage interest rate risk through a derivative transaction known as a REC-linked Interest Rate Swap. Using I-REC helps mitigate risks from energy cost fluctuations and supports the Net Zero target.			

About Bangchak Corporation Public Company Limited

Bangchak Corporation Public Company Limited is a leading energy company in the Asia-Pacific region, operating in 10 countries worldwide.

The Company's business structure comprises five main business groups as follows:

- **Refinery, Marketing and Biofuels**, which operates two world-class oil refineries, Bangchak Phra Khanong Refinery and Bangchak Sriracha Refinery, with a combined refining capacity of approximately 300,000 barrels per day, supported by a nationwide marketing network, and the expansion of biofuels, bio-based products, as well as Sustainable Aviation Fuel (SAF) production capacity.
- **Upstream**, which engages in petroleum exploration and production through investments in OKEA ASA in Norway, while expanding access to energy resources in Southeast Asia.
- **Power and Infrastructure**, which drives clean energy development and supports infrastructure demand, including data centers.
- **Trading**, which enhances supply chain capabilities and expands into global markets through asset-backed energy trading.
- **New Businesses and Holdings**, which focuses on future growth through strategic investments and innovation, is supported by the Bangchak Initiative and Innovation Center (BiiC) to strengthen competitiveness and support the long-term growth of new businesses and technologies.

Bangchak co-founded the Carbon Markets Club (CMC) to support carbon credit trading and raise awareness of the climate crisis and has further expanded its role at the regional level as a signatory to the ASEAN Common Carbon Framework (ACCF), supporting interoperable carbon markets and high-quality carbon credits. **Bangchak has set a target to achieve net-zero greenhouse gas emissions by 2050**.

Sources of funding to implement its strategy: access to capital

Bangchak is involved in Sustainable Finance, which plays a significant role in driving balanced economic growth while ensuring environmental and social care in the long term.

- **UOB Thailand has extended loans under its Transition Finance Framework of 5 billion baht to Bangchak Corporation PCL and 1.5 billion baht to BSGF Co., Ltd.** in order to finance the construction development and working capital of Thailand's first Sustainable Aviation Fuel (SAF) project. This deal is marked as the first Transition Finance facilities for hard-to-abate sector in Thailand. Through the Bank's Transition Finance Framework, UOB can support a wide range of transition activities for hard to abate segment, including the production of low carbon alternative fuels, enhancements in operational efficiency, Carbon Capture and Storage (CCS) and Carbon Capture Utilization and Storage (CCUS) and participation in voluntary carbon credit programs. It will benefit greatly to the production of SAF, a sustainable fuel which would contribute to the decarbonization of the aviation sector. Bangchak Corporation, a leading company in Thailand's energy industry, is pioneering the production of Sustainable Aviation Fuel (SAF) from used cooking oil in Thailand through its subsidiary, BSGF Company Limited. Bangchak has **invested 8.5 billion baht in developing the SAF production** project at its Bangchak refinery in Phra Khanong, Bangkok. The project is expected to commence operations in the second quarter of 2025, with a production capacity of 1 million liters per day. The use of SAF is projected to **reduce GHG emissions by approximately 80,000 tons of CO_2 equivalent** compared to traditional aviation fuel.
- **Bangchak is taking a proactive step to promote Carbon Credit transactions in conjunction with KASIKORNBANK. This marks a significant milestone as Thailand's first Carbon Credit Linked FX Forward Contract.** This transaction will not only broaden the reach of carbon credit trading but also serves as a catalyst for various sectors in the mission to reduce GHG, fostering new financial innovations in the Thai financial market.

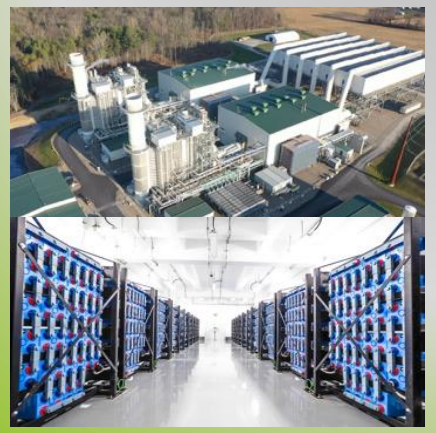
Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Five Core Business Groups

Refinery, Marketing and Biofuels Business Group

Upstream Business Group



Power and Infrastructure Business Group

Trading Business Group

New Businesses and Holdings Business Group

Frontier Technology & BiiC

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Climate-related risks and opportunities can **influence how Bangchak defines its strategy and makes decisions**. This includes current and anticipated changes to its business model arising from climate-related impacts, as well as current and anticipated direct and indirect adaptation or mitigation actions, and the company's plans to transition to a lower-carbon economy.

The strategic plan from 2023 until the year 2030 will focus on the growth of five key business sectors. Bangchak has identified climate change-related opportunities that have the potential to generate a substantive positive change in our business operations and revenue growth.

- **Bangchak plan to invest 150,000 million THB for operation in next 7 years** (2024 to 2030), 30% in Refinery and Marketing Business, 30% in Natural Resources, 30% in Green Business and 10% in and New Frontier Business including Bio-based. Newspaper.
- **For the development of new business plans to strengthen sustainability in addition to the existing businesses**, seeking opportunities to **diversify investments into other sectors** to meet future demands. This **encompasses** the liquefied natural gas (**LNG**) business, which will serve as a clean energy source, as well as the business of leasing and purchasing electric motorcycles (**Winnonie**). Furthermore, there will be institutions dedicated to innovation **and nurturing businesses** that focus on studying technology **related to climate change, sustainable energy, and synthetic biology**.

Bangchak has developed a structured Climate Transition Plan outlining the pathway to achieve net-zero emissions by 2050. The transition strategy focuses on renewable fuels, sustainable aviation fuel (SAF), energy efficiency improvements, and emerging low-carbon technologies. Year emission reduction,

2030	2040	2050
-30%	-60%	Net Zero GHG emissions

Bangchak generates revenue from environmentally friendly products including renewable fuels and sustainable aviation fuel (SAF). These products support the global transition toward a low-carbon energy system.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Bangchak continues to increase investment in low-carbon and energy transition projects. Climate-related investments include renewable fuels, sustainable aviation fuel (SAF), and energy efficiency initiatives.

Mitigation: Reducing Climate Impact

- **Considers the emission targets to be science-based** to in-line with what the climate science deems necessary.
    - Bangchak has **publicly set a long-term target to achieve net-zero GHG emissions by 2050**, demonstrating alignment with climate-science-based pathways. Each business unit including Refinery, Biofuels, Power, and Upstream develops operational emission-reduction plans, such as improving refinery energy efficiency, increasing SAF (Sustainable Aviation Fuel) production, and expanding renewable-based operations.
    - Bangchak strengthens GHG inventory management under ISO 14064-1 and implements verifiable KPIs to track emissions from refinery operations, biobased fuel production, upstream activities, and power generation.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Mitigation: Reducing Climate Impact

- **Shift Capital to Low-Carbon Investments**.
  - **Redirect funding from high-carbon assets to renewables and electrification**. Through its Power and Infrastructure business, Bangchak invests in clean energy development, including renewable energy generation and infrastructure that supports electrification, such as data centers powered by cleaner energy.
  - The Bangchak Initiative and Innovation Center (BiiC) **accelerates investments in technologies that reduce carbon intensity** such as bio-based products, green innovation, and low-carbon mobility solutions.
  - **Capital expenditure** is gradually shifted from traditional refinery and fossil-fuel-dependent assets toward biofuels, SAF, renewable energy projects, and innovation-driven low-carbon businesses across the company's portfolio.

- **Decarbonize the Supply Chain**.
  - **Collaborate with suppliers to reduce their emissions**, which are often the largest source.
  - In the Refinery, Marketing and Biofuels business, Bangchak collaborates with feedstock, logistics, and equipment suppliers to reduce upstream emissions associated with crude procurement, bio-based feedstocks, and distribution operations.
  - For Upstream activities, **Bangchak works with partners (e.g., OKEA in Norway) to adopt best-practice operational standards** for reducing methane leaks, improving energy efficiency, and enhancing responsible petroleum production.
  - The company also **advances supply-chain decarbonization** by participating in Carbon Markets Club (CMC) and the ASEAN Common Carbon Framework (ACCF), promoting high-quality carbon credits and encouraging suppliers to adopt emissions reporting and reduction practices.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Adaptation: Business Resilience

- **Harden Critical Physical Assets**.
  - **Invest in measures like flood defenses or elevating equipment**. Bangchak refinery business group (Phra Khanong Refinery and Sriracha Refinery) conducts assessments of climate-related physical risks such as flooding, strong winds, and extreme weather events to plan for enhancing the resilience of critical infrastructure.
  - Bangchak has also **invested in protective and adaptation measures**, including Flood-protection systems and the elevation of critical refinery areas, and Strengthening the resilience of electrical systems, critical equipment, and essential utilities to ensure continuous operations during severe weather events.

- **Diversify Geographic Footprint**.
  - **Reduce exposure by moving operations away from high-hazard climate zones**. Bangchak is expanding its international investments, such as its upstream petroleum business in Norway (OKEA ASA), which is located in regions supported by robust infrastructure and strong climate-risk management measures.
  - Bangchak is also broadening its clean-energy and infrastructure businesses across multiple countries in the Asia-Pacific region, helping reduce geographic concentration and lowering exposure to climate-related events in any single country.
  - In addition, the **diversification of Bangchak's nationwide service-station network and marketing footprint** helps mitigate the impact of location-specific climate events, such as floods or severe storms.

- **Secure Climate-Resilient Suppliers**.
  - Partner with suppliers who have their own adaptation measures.
  - **Bangchak selects partners and construction service providers that incorporate climate-adaptation measures into project design**, such as reinforced foundations, enhanced drainage systems capable of handling higher rainfall volumes, and the use of materials resilient to higher temperatures.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

BCP NET: Bangchak's climate change strategy to Net Zero 2050

Breakthrough Performance 30%

Efficiency and Process Improvement

% Fuel Oil Equivalent Barrels : % FOEB

5.68 % FOEB (Actual 2020) → 5.11 % FOEB (Actual 2025)

Emphasizes high quality production processes, efficiency enhancements for Low Carbon

- Optimized Steam Utilization
- Energy-saving furnace coating
- Low carbon Product

BCP net

Conserving Nature and Society 10%

100,000 tCO_2e/y in 2050 onward

Proactive Business Growth & Transition 60%

Green Portfolio, Decarbonization technology, Carbon Capture and Utilization

NET Zero Ecosystem

bsgf

Thailand first Neat Sustainable Aviation Fuel Producer

~ 7 KBD or 1 ML/D

CO_2 Reduction 80%

Compared to Conventional JET Fuel

bfpl

Fuel transportation business, providing low-carbon fuels

~ 75,700 tCO_2e (Accumulate 2022-2025)

compared to truck transportation

btsg

One-Stop Solution Provider For LNG Supply & Integrated system

~ 530 tCO_2e (Accumulate 2023-2025)

compared to Fuel Combustion

Winnonie

EV-Bike Platform & Battery Swapping Station

FY 2025 : 922 user, 120 stations

CO_2 Reduction ~ 4,500 tCO_2e (Accumulate)

compared to ICE (Internal Combustion Engine)

CARBON Markets Club

Thailand's first greenhouse gas reduction club that supports trading of Carbon Credits & Renewable Energy Certificates,

The Latest Carbon Credit Trading Statistics

~ 1.8 Million tCO_2e (Accumulate TVER+REC)

Seagrass Learning Center

Potential to sequester carbon ~ 5-40 times more efficiently than terrestrial forests

เครือข่ายสหกรณ์ลดโลกร้อน (Solar Roof) 787.53 KW

~ 472 tCO_2e

2025 : 7 Cooperatives

Decarbonizing the Phra Khanong Refinery

Bangchak has in place to reduce the emission derived from our activities directly through our low carbon products cause to third-parties can reduce their own emissions (avoided emission at 3rd party *or* scope 3 emission). Bangchak enhances energy efficiency and operational flexibility, considering alternative fuels and digital solutions, and reduces Scope 1–2 emissions in alignment with the BCP NET strategy. **Bangchak was certified to register the Carbon Label Products by** Thailand Greenhouse Gas Management Organization (**TGO**) **5 products**. Our products have carbon footprint lower than average of Thailand. We keep refining process management continuously improve both operational stability and operational efficiency, lead to reduction in energy intensity and GHG emission. thaicarbonlabelIBangchak

(1) Emission factors for Bangchak's product from carbon label products according to the PCR standard (Product Category Rule: PCR) by the Greenhouse Gas Management Organization (TGO)

(2) Emission factors for normal oil product from IPCC 2006, Vol.2, table 3.2.1, 3.2.2, and the Department of Alternative Energy Development and Efficiency (DEDE)

(3) TGO Approval date 25 July 2023, Certificate expired 24 July 2026

Reducing Scope 3 Emissions from the Use of Sold Products

In addition to monitoring Scope 1 and Scope 2 emissions, **Bangchak also monitors Scope 3 emissions associated with the use of sold products** across the value chain. These efforts contribute to avoided emissions for third parties **through the use of lower-carbon fuel alternatives**. Bangchak **blends gasohol and biodiesel into its fuel products** and was the first oil company in Thailand to produce and sell biofuel products directly to customers through Bangchak service stations. All fuel products offered by Bangchak contain bio-based components that help avoid GHG emissions when compared to conventional gasoline and diesel. Gasohol products are blended with bioethanol, while biodiesel products consist of a mixture of biodiesel (B100) derived from palm oil and conventional diesel. A variety of gasohol and biodiesel fuel options are available at Bangchak service stations nationwide, supporting lower-carbon mobility solutions for consumers.

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

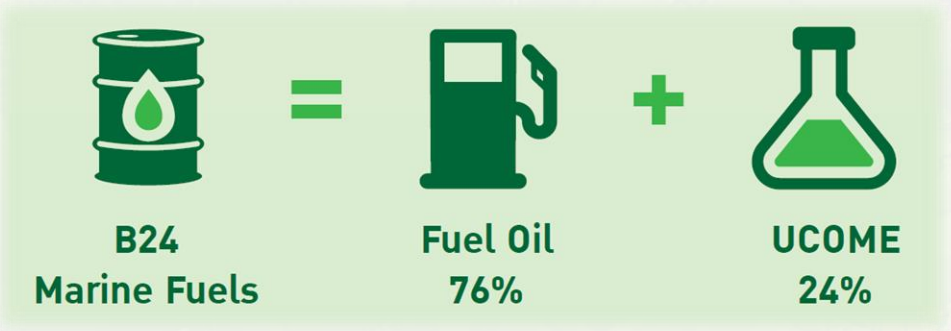
Decarbonizing the Sriracha Refinery

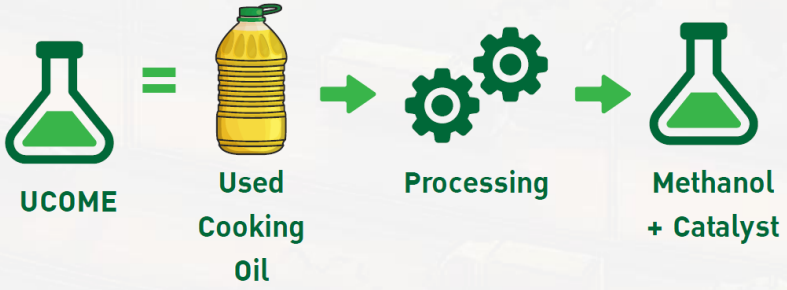
Bangchak's investee, the Sriracha Refinery, has **advanced its decarbonization efforts through the introduction** of B24 Marine Biofuels, a **clean-energy product** containing methyl ester synthesized from used cooking oil (UCOME). This **initiative reduces greenhouse gas emissions from the outset of the production process and supports the transition toward lower-carbon operations across the value chain.**

18%-25%
GHG
REDUCTION

CO_2

Lower Carbon Fuel





Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Diversify Service Stations/Retail

The network of approximately 2,200 service stations serves as both a distribution platform for products and services and as "Greenovative Destinations" that extend clean-energy and community-oriented solutions. This network helps **diversify risk as fossil-fuel demand slows**, by enabling the integration of bio-based products, EV charging services, and value-added lifestyle offerings throughout the transition period.

Invest in BBGI BBGI

Bangchak conducts bio-based products business through the business operation of BBGI Co., Ltd., which engages in the production and sale of biofuels as the largest player in Thailand. The subsidiary and associated companies of BBGI have a **total production capacity of 1,600,000 liters per day, divided into 600,000 liters of ethanol per day and 1,000,000 liters of biodiesel per day. The objective is to lower trade deficits due to fuel imports, contribute to national energy security, support farmers, and preserve the environment including GHG emission reduction**. The Company also promotes the blending of ethanol with gasoline and biodiesel with diesel to yield gasohol 91, gasohol 95, gasohol E20, gasohol E85, and Hi-Diesel.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Invest in BFPL BFPL

Bangchak **invested THB 1,600 million** to expand its business into fuel pipeline transportation to strengthen and stabilize Group businesses through the acquisition of executive rights over the 99-kilometer fuel pipeline system from Fuel Pipeline Transportation Limited (FPT) through the Bangkok Fuel Pipeline and Logistics Company Limited, **reduces carbon emissions** in line with Bangchak's vision that emphasizes sustainable innovative business development in harmony with environment and society

Invest in SAF Bangchak Group Affirms Readiness for Production of Sustainable Aviation Fuel (SAF) | Bangchak Corporation

SAF project is a major milestone for Bangchak, marking its evolution from a renewable energy leader to a future energy leader. The company builds on over 20 years of experience in used cooking oil-UCO collection for biofuel production and benefits from cost advantages by **utilizing existing refinery infrastructure**, **helping reduce both construction and operational costs**. **Create a hedge against NZE-driven pressures on fossil-fuel demand**. Bangchak joint venture agreement to establish BSGF Company Limited with a **THB 8,000-10,000 million investment**. BSGF

Research and development

Bangchak Reinforces "Accelerating Bangchak 100x" Strategy Learning e-Fuels in Japan, Pursuing Future Energy Development Plus Strengthening Non-Oil Marketing Business | Bangchak Corporation

Bangchak is actively **exploring complementary technological pathways, including co-processing and e-fuels**, as part of its long-term decarbonization and energy-transition strategy. This includes collaboration and knowledge-sharing with international technology leaders. For example, Bangchak executives visited ENEOS Holdings' e-fuel demonstration plant in Japan, which converts clean energy and captured CO2 into synthetic hydrocarbons that can serve as "drop-in" substitutes for fossil fuels. Such engagement reflects Bangchak's intention to assess the feasibility of future e-fuel development and integrate advanced low-carbon fuel technologies into its transition roadmap.

Bangchak is also considering R&D partnerships and investment structures to accelerate the development of e-fuel projects, supported partly by its innovation budget and planned research facilities. These actions complement the company's ongoing development of Sustainable Aviation Fuel (SAF) and further strengthen its diversified portfolio of low-carbon liquid fuels.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Research and development

Bangchak held a signing ceremony for a Memorandum of Understanding (MoU) with BIG to study the feasibility of utilizing carbon dioxide (CO_2 Utilization). The collaboration aims to explore ways to convert captured CO_2 into valuable resources, marking the continuation of Bangchak's partnership with the Asian Institute of Technology (AIT) and Mitico from the United States. The initiative represents Thailand's first refinery-level pilot project to study the utilization of carbon dioxide capture (Carbon Capture) technology, starting at the Bangchak Phra Khanong Refinery, to create tangible value from carbon emissions.

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Decarbonizing the Supply Chain through Dealer and Service-Station Collaboration

Bangchak Unites Service Station Operators Nationwide "One Team, One Future for Our Greenovative Destination" Advancing Together Toward Sustainable Growth | Bangchak Corporation

Bangchak collaborates closely with its nationwide network of more than **2,500 service-station operators** to advance a unified low-carbon direction across the downstream value chain. Through the annual "One Team, One Future for Our Greenovative Destination" forum, the company communicates ESG-aligned operational standards, promotes energy-efficient and modernized station operations, and strengthens the transition toward Greenovative Destinations integrating cleaner energy solutions, non-oil services, and improved logistics. This partnership-driven approach enhances operational efficiency and reduces energy use and emissions across dealer facilities, contributing directly to the decarbonization of Bangchak's downstream supply chain.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Capacity Building with value chain

To strengthen both internal and external capabilities including **franchise** in carbon footprint accounting (CFO), Bangchak implements initiatives aimed at enhancing understanding and awareness of climate change and greenhouse gas (GHG) reduction. These efforts include comprehensive training sessions and knowledge-sharing activities under the "Greenovative Station" program, which promotes proactive learning and preparedness to create new business opportunities.

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Value Chain Engagement, Indirect Mitigation Actions, and Current and Anticipated Outcomes

In 2025, Bangchak advanced its indirect greenhouse gas mitigation efforts through value-chain partnerships by collaborating with the Cooperative Promotion Department and agricultural cooperatives nationwide under the "**Cooperative Network** to Combat Global Warming" initiative. The program enables partner cooperatives to install solar power generation systems and Battery Energy Storage Systems (BESS) through leasing and Private Power Purchase Agreements (Private PPAs). To date, 18 cooperatives have joined the initiative, with the first five pilot cooperatives receiving installations totaling 2.12 megawatts of solar capacity and 1.63 megawatt-hours of storage. These installations lower electricity costs, enhance energy security, and reduce community-level emissions.

This initiative demonstrates the Company's engagement with downstream emissions and cooperative networks to drive clean-energy adoption. It also strengthens the adaptive capacity of cooperatives by reducing exposure to energy-related risks. Anticipated outcomes include increased renewable-energy penetration across rural communities, reduced Scope 2 and Scope 3 emissions, and a scalable foundation for future clean-energy expansion. These efforts support the Company's BCP NET pathway and long-term ambition toward a low-carbon society.

Value Chain Engagement, Indirect Mitigation Actions, and Expected Outcomes

In alignment with our climate strategy and transition plan, the Company undertakes indirect mitigation efforts by working closely with value chain partners to reduce lifecycle emissions and strengthen climate resilience. In 2025, we entered into a public–private collaboration with the Department of Industrial Promotion (DIPROM) and five major industry partners to establish a nationwide used cooking oil (UCO) supply chain network **as a key feedstock for Sustainable Aviation Fuel (SAF) production**. The initiative aims to integrate UCO collection, management, and logistics across industrial and service sectors, supporting a circular resource system while enabling large-scale production of low-carbon aviation fuels.

Current actions under this collaboration include the development of UCO collection mechanisms, joint awareness and education programs, and coordinated analysis of SAF demand, feedstock availability, and production capacity. These efforts not only facilitate decarbonization across the value chain but also prepare the ecosystem for broader commercial adoption of SAF. Anticipated outcomes include greater availability of certified, domestically sourced feedstocks; enhanced supply chain resilience through improved waste-to-value pathways; and measurable reductions in Scope 3 emissions associated with upstream feedstock procurement and downstream aviation fuel use. The collaboration also supports national goals under the Bio-Circular-Green (BCG) Economy model by promoting resource efficiency, strengthening energy security, and contributing to the long-term transition toward carbon neutrality and net-zero greenhouse gas emissions.

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Regional Carbon Market Collaboration and Indirect Mitigation Efforts

Bangchak advances its indirect greenhouse gas mitigation efforts by engaging in regional collaboration through its participation in the Carbon Markets Club (CMC) and the ASEAN Common Carbon Framework (ACCF). These engagements focus on developing a transparent and interoperable carbon market ecosystem for the ASEAN region, including joint efforts on knowledge sharing, market-design alignment, and the enhancement of Monitoring, Reporting and Verification (MRV) frameworks. Such collaboration strengthens the enabling environment required for effective decarbonization across industries.These activities reflect the Company's commitment to climate-related transition planning by reducing regulatory and market uncertainties, fostering new low-carbon business opportunities, and supporting the development of credible carbon-credit mechanisms. The Company's involvement in this regional initiative contributes to both current and anticipated indirect mitigation outcomes.

Invest in BCPG BCPG

Look beyond direct emissions and increasingly consider low-carbon products and avoid emission at our third parties in value chain to **contribution to a low-carbon economy**. Bangchak invests in the green power business via BCPG Public Company Limited (BCPG), a subsidiary established **to engage in the generation and distribution of green electricity from renewables and new forms of clean energy in Thailand and overseas**. BCPG . This **supports diversification and provides growth options under all climate scenarios NZE**, which emphasize a higher share of clean electricity and energy storage. In addition, Thailand's PDP direction, which promotes renewables and battery storage, is aligned with the Bngchak group's strategic pathway. It has set a target to achieve net-zero greenhouse gas emissions by 2050. The company aims to drive its operations through **three key strategies**:

1. **Greener Diversified Portfolio**: Expanding its portfolio by increasing investments in renewable energy, with a goal of achieving 70% renewable energy in its electricity production mix by 2030 and operating low-carbon natural gas power plants with a 30% reduction in emissions. Recently, the company signed agreements to acquire shares in two wind power plant projects in Vietnam, with a combined installed capacity of 99 MW and a total value of over THB 4.5 billion.
2. **Further than MW - Leading Climate Solutions**: Investing in renewable energy businesses that can generate carbon credits.
3. **Higher Value to Shareholders**: Enhancing returns by developing renewable energy projects and subsequently selling these projects to reinvest the proceeds into further expansion. For its 2025 operational plan, the company has allocated an investment budget of THB 32 billion and aims for an EBITDA growth of no less than 30% compared to 2024.

Newspaper

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Invest in WINNONIE WINNONIE

The investment in WINNONIE enhances the resilience of Bangchak's strategy under various climate-related scenarios by diversifying the Bangchak's portfolio away from fossil fuels toward low-carbon transportation solutions, expanding opportunities in the EV-mobility market, building a Net-Zero ecosystem, and reducing the risk associated with a rapid decline in oil demand under a 2°C or lower scenario. This helps Motorcycle Taxi cut GHG emissions while reducing the conventional costs of motorcycle installments, fuel, and maintenance.

Invest in BTSG BTSG

Bangchak's investment in LNG Refueling Stations through BTSG strengthens the resilience of its strategy under ≤2°C climate scenarios by diversifying its energy portfolio from oil toward lower-carbon fuels that are viable for heavy-duty transport, reducing risks associated with declining oil demand, building clean-fuel infrastructure that supports Net-Zero policies, and enhancing competitiveness in an era where the transportation sector increasingly requires cleaner fuel options.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Bangchak promote and encourage employee, we enhance knowledge and understanding to contribute to mitigating global warming. Bangchak initiate '**Bangchak 100X Climate Action**'. such as:

"Carbon Free Management Team" campaign to declare commitment of management team which comprise of 21 members, the collective greenhouse gas emissions rate is approximately 200 tons CO_2e per year. This emission will be offset by carbon credits and serve as a goal **to compensate personal carbon emissions** in the following years.

Encourage to reduce waste at the source to participate by sorting orphan waste and delivering for appropriate management through the mobile waste collection project by **N15 Technology** and turn into energy in finally. Through this initiative, orphan waste is turned into energy, **reducing the amount of waste sent to landfills, which emit methane, combatting global warming, and reducing coal-powered electricity generation**.

Support employee's commuting **to use public passenger transport systems** by integrating employee cards with the Rabbit card of Bangkok Mass Transit System (BTS).

In year 2024, we achieve carbon neutrality flight campaign by employee's business travel offsetting.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Bangchak support the community-based business service station network which operate by cooperative network to install solar cell systems on rooftops to save costs. Additionally, **supports the registration of carbon credits obtained from the installation of solar cell systems** with the Thailand Greenhouse Gas Management Organization (TGO).

We support Thai Rice NAMA which reduce GHG emission 30% from conventional cultivation by purchasing 40 tons of "climate-friendly rice" and distribute this products to Bangchak's customers at 133 service stations in Bangkok and its vicinity.

And supports Thongyod House's athletes who will be traveling to compete in various countries, totaling approximately 20 events. All their emissions from their travel and daily lives throughout the year 2023 will be offset by carbon credits **to compensate personal carbon emissions** of the athletes.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

To ensure action on climate change is consistent and strong. Bangchak supportive trade associations to align with net-zero by 2050. We found The Carbon Markets Club, Thailand's first environmentally conscious club focused on reducing greenhouse gases. Established in 2021, the club had 1,304 member organizations as of the end of October 2024. It has facilitated the trading of over 500,000 tons of carbon dioxide equivalent in carbon credits under the TVER program and more than 2.1 million megawatt-hours in RECs, equivalent to approximately 1.5 million tCO_2e.

Additionally, the club offers a carbon credit trading platform, a corporate carbon footprint assessment tool, and a personal carbon footprint assessment application called MyCF. It also raises awareness through regular activities and events. Looking ahead, beyond expanding its membership base and promoting the use of its tools to support Thailand's carbon market.

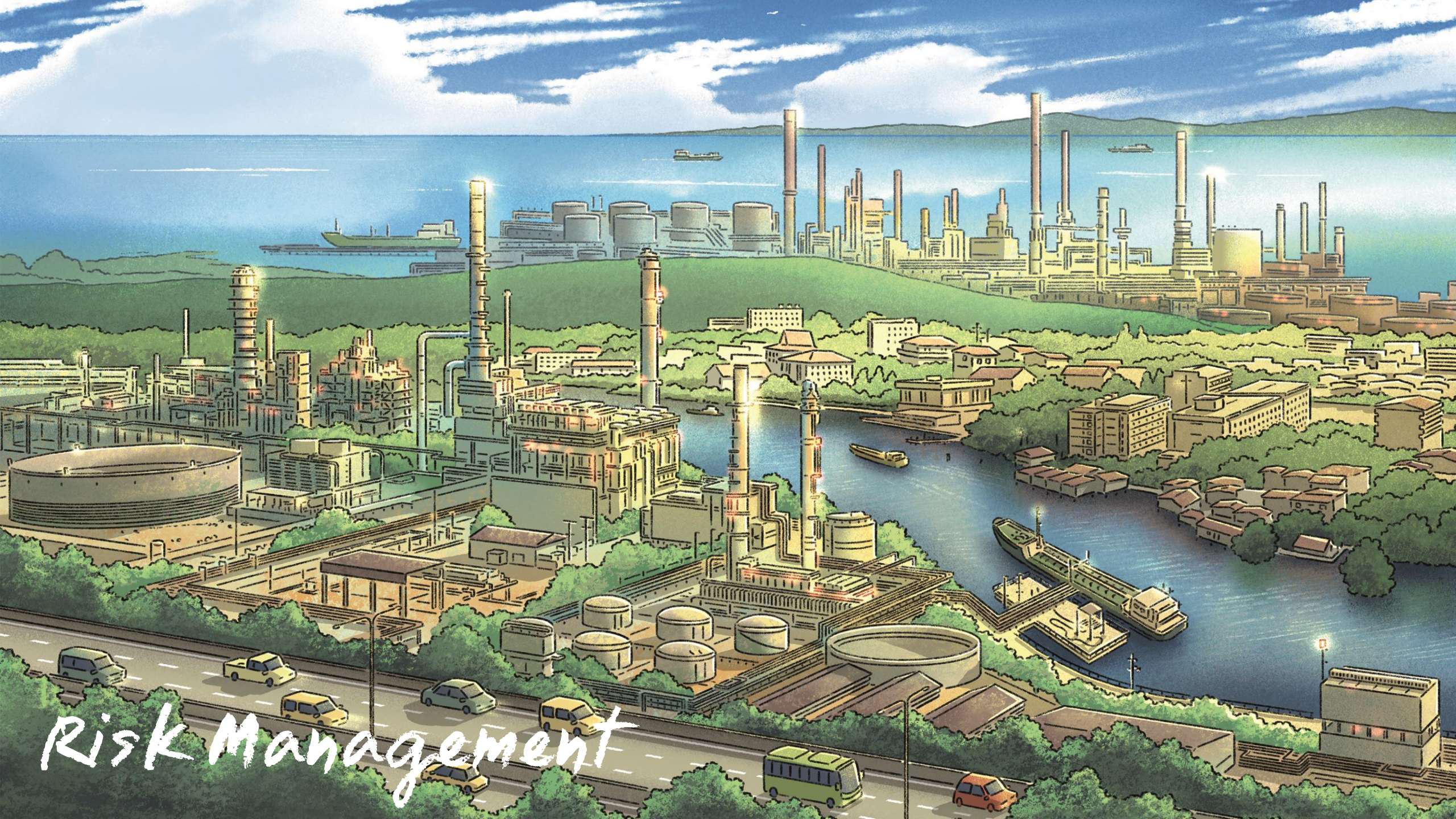
In 2024, Five major carbon market associations from Thailand, Malaysia, Indonesia, Singapore, and ASEAN signed a Memorandum of Collaboration (MoC) at the 29th Conference of the Parties (COP29) held in Baku, Azerbaijan. The collaboration supports the development of the ASEAN Common Carbon Framework (AACF), aimed at establishing standards and guidelines for carbon credit trading within the region to ensure efficiency and transparency in driving a low-carbon society. The signatories represent private-sector associations from ASEAN countries including Thailand Carbon Markets Club.

Strategy

Describe the **resilience of the company's strategy**, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

To make sure that Bangchak climate align with climate change policy positions. Bangchak has joined climate-related trade association.

- World Economic Forum Partnership
- Global Compact Network Thailand
- Thailand Business Council for Sustainable Development
- Thailand Carbon Neutral Network
- Thai Renewable Energy
- Thailand Management Association
- The federation of thai industries
- Thailand Environment Institute
- Thai Listed Companies Association
- Integrity Energy Solutions Group
- Council of trustees and member of Petroleum Institute of Thailand


Risk Management

Risk Management

Describe the company's **processes for identifying and assessing climate related risks**

Our assessment focus on own operations and cover some of upstream/downstream activities. Time horizons climate risk assessment covered short-term (0-1 years), medium-term (1-5 years) and long term (>5 years).

Bangchak **Risk management policy:**

- **Mandates managers and employees** in various departments **take responsibility for risk management**. They are required to have roles and involvement in developing the organization's risk management and understand their related responsibilities in risk management.
- **Efficient risk management processes** are established **at every stage of operations** following the principles of good corporate governance. There is **integration of risk management with the organization's strategic planning** and information technology management **to** facilitate effective risk management, **reducing the chances of negative impacts and increasing the opportunities** for success.
- Take an action to support successful organization-wide risk management, utilizing limited resources effectively for risk identification, assessment, and appropriate management.
- Promote and encourage the culture of organizational risk management, ensuring that everyone understands the importance of risk management.
- **Participate in standardized risk management systems** including managers and employees at all levels within the organization **and joint venture partners** to achieve common business goals, align with sustainable business development policies, align with environmental and social factors, and adhere to Environmental, Social, and Governance (ESG) principles.

Risk Management

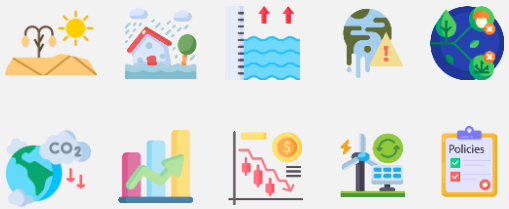
Describe the company's **processes for identifying and assessing climate related risks**

bangchak

1

Evaluate / Identify process

Evaluate/ Identify the climate-related factor that may cause an impact on the process or the company's goal.



2

Assessment process

Factors identified through the assessment process are evaluated based on their impact on the company, considering both the nature and the magnitude of the impact, using the company's impact and likelihood criteria.

3

Risk Management plan development

After completing the risk assessment, the risk owner should develop a mitigation plan to reduce the impact or likelihood of the risk. For physical risks, a crisis management plan may be used as an alternative.

4

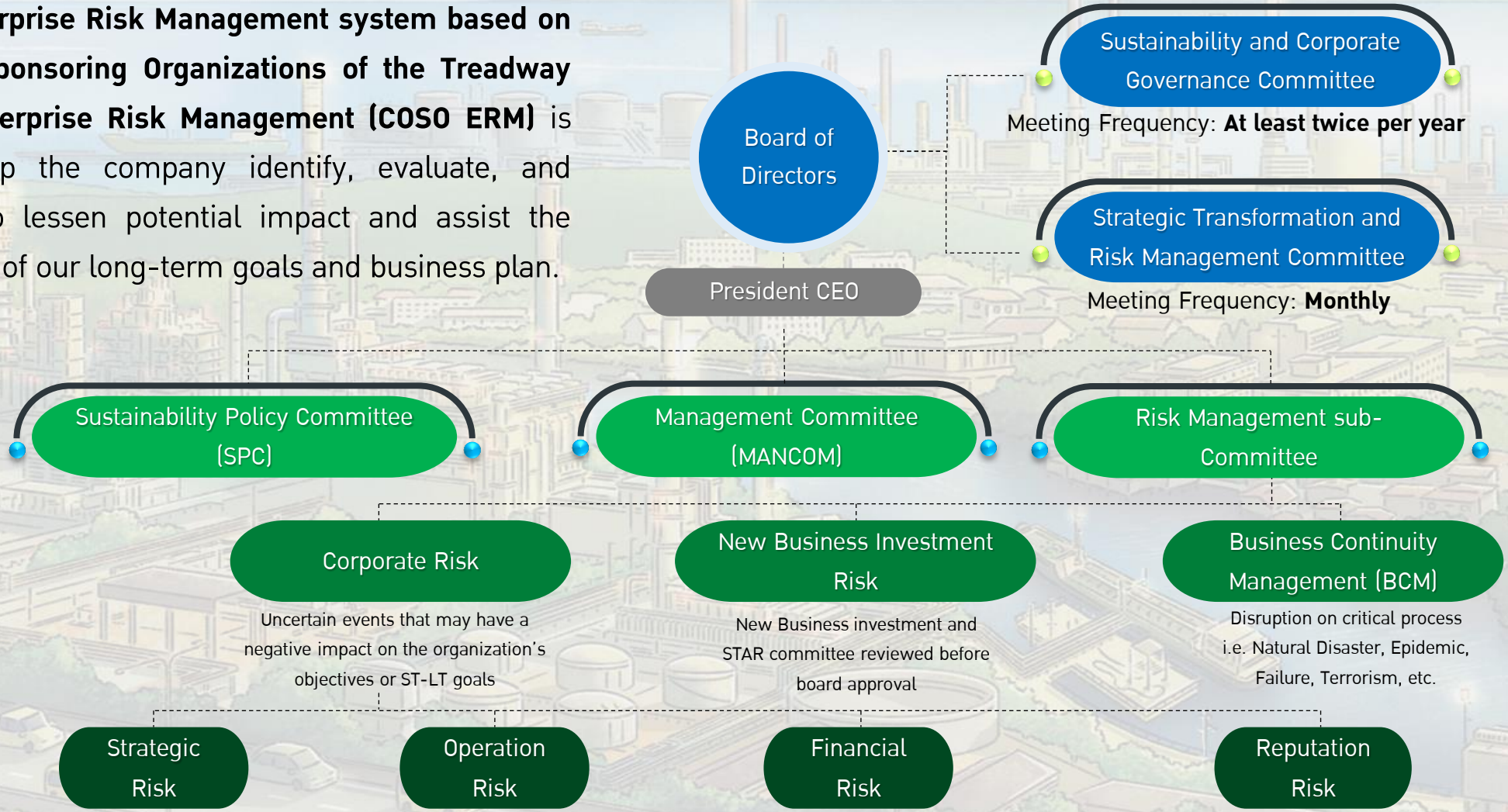
Monitoring and report process

Define the Key Risk Indicators (KRIs) to monitor and report the results to management and to the Strategic Transformation and Risk Management Committee on a quarterly basis for both corporate and business unit risks. For physical risks, the designated risk owner will monitor and report when the trigger point is reached

Risk Management

Describe the company's **processes for managing climate related risks**

Bangchak's Enterprise Risk Management system based on Committee of Sponsoring Organizations of the Treadway Commission Enterprise Risk Management (COSO ERM) is intended to help the company identify, evaluate, and manage risks to lessen potential impact and assist the accomplishment of our long-term goals and business plan.



Risk Management

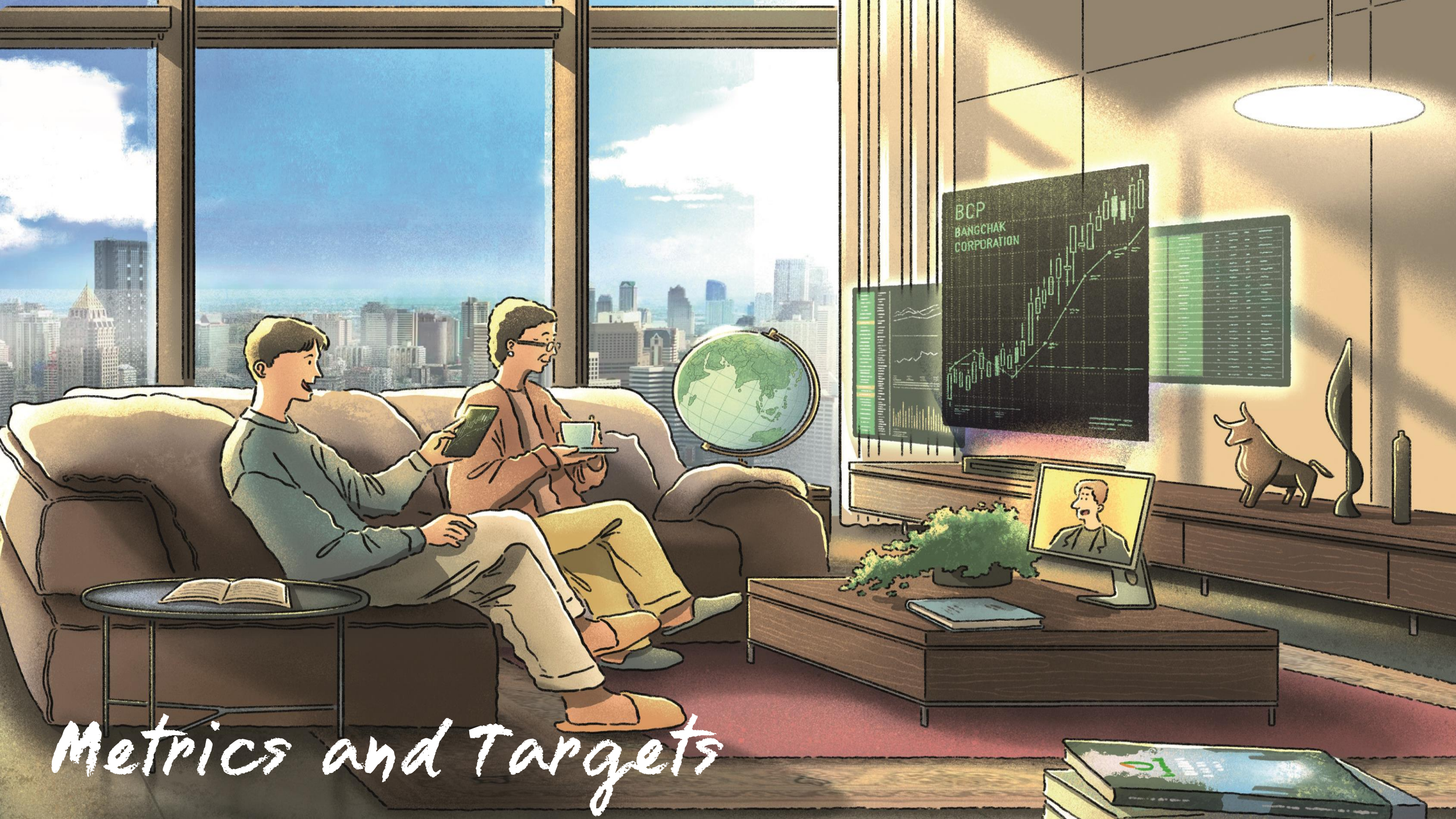
Describe **how processes** for identifying, assessing, and managing climate related risks are **integrated into the company's overall risk management**

Bangchak's Climate Risk Management process is integrated into the company's enterprise risk management system. This multidisciplinary approach **covers both physical risks (acute and chronic) and transitional risks (current and emerging regulations, technology, legal, market, and reputation), as well as related opportunities.**

The framework and principles adopted by Bangchak Corporation are designed to systematize the management of climate-related risks across the organization. The purpose is to embed climate risk considerations into internal management processes, ensuring the company can preserve and create long-term value.

Processes for Mitigating Climate-related Risks

- Multiple internal and external risk factors that may affect Bangchak Corporation's business operation have been analyzed both in short term, medium term and long-term period.
- The system incorporates risks in strategy and finance. It is managed with specific key risk indicators (KRIs) to monitor and track the likelihoods and severity of all identified risks and provides treatment plans to mitigate and minimize the risks and drive operations to succeed as planned.
- **The company promotes a culture of risk management in the organization and extends it to companies in the group by allowing all departments in the Bangchak Corporation of Companies to create a risk plan every year. With an action plan for climate change, Bangchak Corporation has invested in green energy business to use renewable energy and have been enhanced green procurement for products and services through supply chain management.**
- In addition, we have conducted our own internal carbon price. To be use as a shadow price reflecting on the investment evaluation process. Examples of actions to mitigate transition risks include reducing GHG emissions through energy efficiency improvement projects and implementing internal carbon shadow prices for new investment decision-making and energy efficiency projects.
- For physical risk, drought and flood pose a significant risk to Bangchak Corporation's businesses and its business partners' value chains. We have prepared measures to mitigate and manage these effects. The refinery plant located in Phra-khanong district was assessed the likelihood of hazards for physical risk as the refinery major receptor of our risks throughout our business.



Metrics and Targets

Metrics and Targets

Disclose the **metrics used** by the company to assess climate-related risks and opportunities in line with its strategy and risk management process

Bangchak considers the applicability of IFRSS2 cross-industry metrics and Industry-based (Extractive and Minerals Process) when setting climate-related targets and monitoring progress towards achieving those targets. The Company also discloses climate- and environmental-related metrics in alignment with the GRI Standards and the GHG Protocol, as presented in the Sustainability Report 2024., including

- GRI 305-1 (Direct (Scope 1) GHG emissions)
- GRI 305-2 (Energy indirect (Scope 2) GHG emissions, disclosed on a location-based basis)
- GRI 305-3 (Other indirect (Scope 3) GHG emissions)
- GRI 305-4 (GHG emissions intensity)
- GRI 305-5 (GHG emissions reduction)
- GRI 305-7 (Air emissions)
- GRI 303-3 (Water withdrawal)
- GRI 303-4 (Water discharge) including Percentage of water recycled
- GRI 303-5 (Water consumption)
- GRI 302-1: Energy consumption within the organization
- Operational metrics supporting climate performance assessment include refining throughput of crude oil and other feedstocks, as well as refining operating capacity.
- Historical comparisons of GHG emissions for Bangchak and its investees to demonstrate emissions trends over time.

For the 2025 data, Bangchak obtained an assurance statement from a third party (SGS (Thailand) Limited)

Metrics and Targets

Disclose the **metrics used** by the company to assess climate-related risks and opportunities in line with its strategy and risk management process

Internal Carbon Price

Objectives to Implement a Carbon Price:

Bangchak implements an internal carbon pricing (ICP) mechanism in **response to stakeholder expectations** and as a **core management tool to integrate climate-related considerations into corporate strategy, financial planning, and investment decision-making**. Bangchak applies ICP to **conduct cost–benefit analysis** for new investments by embedding the cost of greenhouse gas emissions into project-level financial evaluations. This approach supports capital allocation decisions by **prioritizing projects that enhance energy efficiency**, **reduce emissions, and expand low-carbon and clean energy businesses**, while incentivizing maximum energy efficiency to reduce operating costs. ICP is **embedded into Bangchak's enterprise-wide decision-making and business planning processes**, enabling the systematic **identification, assessment, and management of climate-related risks and opportunities**. The mechanism is **used to evaluate transition and regulatory risks, identify revenue opportunities, compare investment alternatives, and test the robustness of strategic and investment assumptions under different climate and policy scenarios**. To strengthen preparedness for regulatory developments, Bangchak aligns its internal carbon pricing assumptions with potential carbon pricing instruments, **including emissions trading schemes (ETS) and carbon taxes under climate change–related legislation in Thailand**.

Bangchak also collaborates with external stakeholders, including the Excise Department and academic institutions, to support research on carbon pricing mechanisms and their implications for fuel consumption behavior in a low-carbon society. Beyond direct operations, ICP is **applied to selected material Scope 3 emissions across the value chain**, **particularly upstream transportation and distribution activities**. Measures such as optimizing transportation modes and selecting more efficient logistics options contribute to upstream emissions reduction while delivering cost–benefit advantages under the shadow carbon price framework. **Bangchak has established clear climate-related targets**, including long-term commitments toward net-zero greenhouse gas emissions, which are embedded into corporate strategy and business planning. The systematic application of **ICP supports the achievement of these targets** by operationalizing climate objectives through financial discipline, strategic planning, and investment prioritization across the organization. In addition, Bangchak allocates dedicated resources to support its climate commitments**. In 2025, the Company allocated funding for carbon offsets to achieve carbon neutrality for Head Quarter offices and business centers office covering Scope 1, Scope 2, and Scope 3 emissions 1,450 tCO2e**, utilizing carbon credits from solar power generation projects of BCPG Public Company Limited. Through these objectives, **internal carbon pricing serves as a central mechanism to influence strategy and financial planning, navigate regulatory transitions, support emissions reduction across the value chain, and enhance the resilience of Bangchak's business portfolio under multiple climate transition scenarios**, including business-as-usual, national transition pathways, and net-zero aligned scenarios.

Metrics and Targets

Disclose the **metrics used** by the company to assess climate-related risks and opportunities in line with its strategy and risk management process

Internal Carbon Price

GHG Scope covered:

Bangchak applies an internal carbon pricing (ICP) program on a company-wide basis, **covering greenhouse gas emissions from Scope 1 and Scope 2, as well as selected material Scope 3 emissions across its operations and supply chain**. The scope and application of the program are informed by IEA price projections and an internal consultation-based price-setting approach, ensuring alignment with international climate pathways and business relevance.

Type of internal carbon price and Price (per metric tonne CO2e):

Bangchak adopts a **shadow carbon price approach**, whereby a hypothetical cost of carbon per metric tonne of CO_2e is assigned to emissions in order to identify and assess climate-related risks and opportunities associated with business activities and investment decisions. **Bangchak applies an ICP of THB 200 per tCO_2e**, equivalent to approximately USD 5 per metric tonne of CO_2e, which reflects prevailing national carbon pricing considerations and serves as a consistent planning assumption across the organization.

Application:

Internal carbon pricing is integrated on an ongoing basis into Bangchak's corporate strategy and business planning processes and has become a standard operating practice. ICP is **used as a planning and analytical tool to test strategic and investment assumptions, identify revenue opportunities, assess climate-related and regulatory risks, and incentivize maximum energy efficiency** to reduce operating costs. In practice, the ICP is **applied as part of the new investment** appraisal process, where it is **used to conduct economic cost–benefit analysis** by incorporating the cost of carbon into financial evaluations at the project level. This enables informed and disciplined capital allocation decisions and ensures that climate considerations are directly linked to actual investment decision-making.

GHG emission reduction projects

1. Energy efficiency
2. Solar rooftop

Exclude removal project that investment cost higher than 200 THB/tCO_2e such as direct air capture (DACSS)

GHG emission project

New projects with medium level of GHG emissions

Exclude excessive carbon cost project that high level of GHG emissions

Metrics and Targets

Disclose the **metrics used** by the company to assess climate-related risks and opportunities in line with its strategy and risk management process

GHG Emissions

UN SDG13 Climate action is our key concern due to top materiality topics of Bangchak's stakeholder are Climate Change Adaptation & Risk Management and GHG Emissions. To ensure focused implementation of climate change strategy, **GHG emission reduction is set as Corporate KPI in 2025** for the all-executive levels and relevant business unit including Group Chief Executive Officer, Presidents.

- **Bangchak considers the target to be science-based** to in-line with what the climate science deems necessary to meet the goals of the Paris Agreement-limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C. Bangchak focus and prioritize on own operational emission (**Operational control approach**).
- **BCP NET represents Bangchak's climate change strategy** to address climate-related risks and opportunities and to support Bangchak's transition toward a low-carbon economy. We have **corporate-level emission reduction target publicly** (quantitative and qualitative target) **in absolute target** related 2030-year as is near-term emissions target and 2050-year as is our long-term target reduction which compare base 2019-year calendar (**a gross GHG emission baseline is 908,999 tCO_2**). **Provision of Scope 1, 2 and 3 in line with GHG Protocol**: A Corporate Accounting and Reporting Standard, Revised Edition, March 2004, published by the World Resources Institute and the World Business Council on Sustainable Development (WRI/WBCSD) including GHG Protocol Scope 3 Standard, 2011. GHG emissions inventory covers the following greenhouse gases: carbon dioxide **(CO_2),** methane **(CH_4),** nitrous oxide **(N_2O),** hydrofluorocarbons **(HFCs),** perfluorocarbons **(PFCs),** sulphur hexafluoride **(SF_6) and** nitrogen trifluoride **(NF_3).** Emissions of all GHGs be consolidated and disclosed in metric tons of carbon dioxide equivalent (CO_2e) and calculated in accordance with published **100-year time horizon global warming potential (GWP) values. For GWP values is the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2014).** Boundary of GHG emission in this report include,
  - **Scope 1 and 2 (more than 95% covered)**: Phra Khanong Refinery, Headquarter and Regional Offices.
  - **Scope 3**: Phra Khanong Refinery, Headquarter and Regional Offices, Use of sold product by Marketing Business Group and Company Owned Service Station including other investees (BSRC, BFPL, BCPT, BCR and BGN).

Metrics and Targets

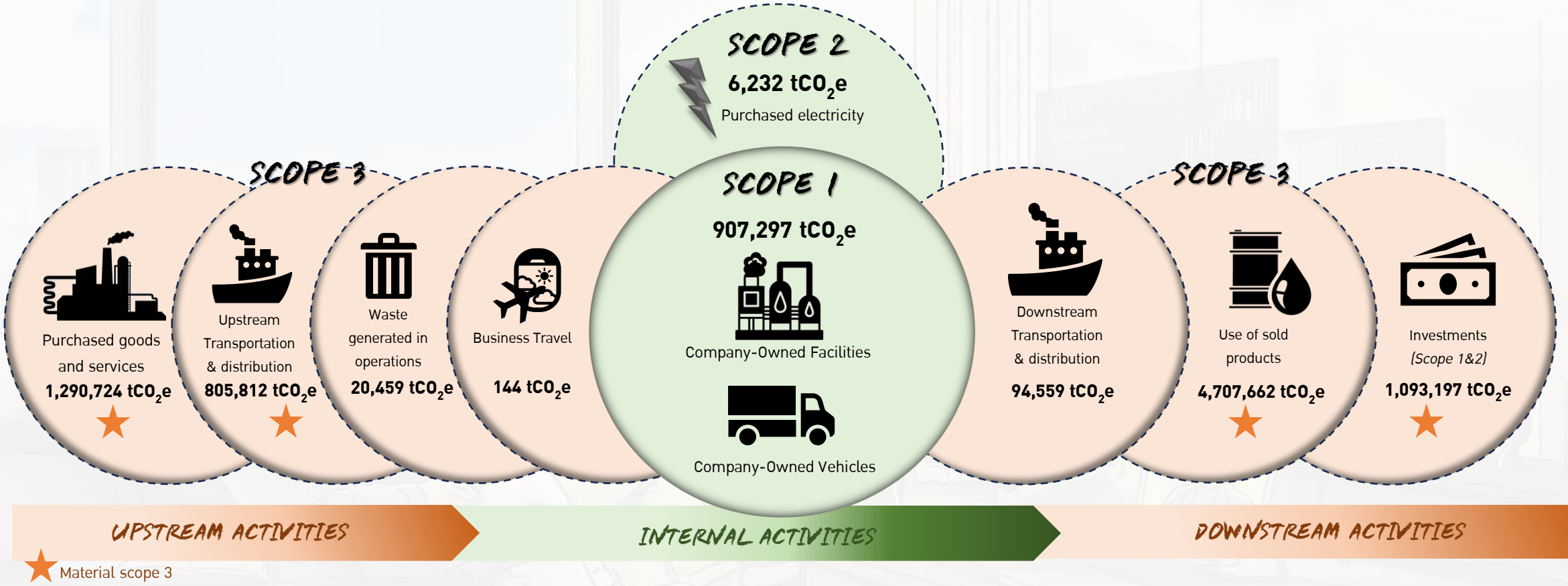
Disclose the **metrics used** by the company to assess climate-related risks and opportunities in line with its strategy and risk management process

GHG Emissions

- Bangchak's significant Scope 3 emissions comprise **Category 1** (Purchased goods and services), **Category 4** (Upstream transportation and distribution), and **Category 11** (Use of sold products). In the current reporting year, Bangchak has also accounted for **Category 15** (Financed emissions), which include emissions associated with its investments in subsidiaries and associates, namely BFPL (100% shareholding), BCPT (100% shareholding), BCR (100% shareholding), BSRC (99.72% shareholding), and BGN (49% shareholding).
- Bangchak has set a **2030 near-term target** to achieve a 30% reduction in Scope 1 and Scope 2 GHG emissions (**a gross GHG emission target is 636,299 tCO_2**)
- Bangchak has set a **2050 long-term target to achieve Net Zero GHG emissions** through a 90% reduction in Scope 1 and Scope 2 emissions (**a gross GHG emission target is 90,899 tCO_2**) and 10% offsetting using removal-type carbon credits. The use of removal-type carbon credits is intended to address residual emissions that remain after all technically and economically feasible GHG emission reduction measures have been fully implemented. Bangchak selects carbon credits that are verified or certified under nationally or internationally recognized standards, such as VCS, Gold Standard (GS), or TGO, to ensure the credibility and integrity of the offsets used. https://investor.bangchak.co.th/en/net-zero.
- **Emission factor and methodology** consist of Intergovernmental Panel on Climate Change (**IPCC**) National Greenhouse Gas Inventory Guidance 2006, **ISO 14064-1**, American Petroleum Institute (**API**) GHG Compendium 2009 and Thailand Greenhouse Gas Management Organization (**TGO**).
- **Absolute GHG emissions in 2025 (Scope 1 and Scope 2) increased by 0.5% compared with the 2019 base year, primarily due to higher refinery throughput.**
- Beyond mitigation efforts within Bangchak's value chain, the Company also addresses emissions beyond its value chain through its climate strategy, "NET: Net Zero Ecosystem." This strategy encompasses initiatives aimed at encouraging stakeholders across Bangchak's value chain, as well as Thai society more broadly, to enhance awareness and understanding of actions to avoid or reduce GHG emissions. Key initiatives under this strategy include investments in BSGF, BFPL, BTSG, and Winnonie, as well as the establishment of the Carbon Markets Club and the Seagrass Learning Center.

Metrics and Targets

Disclose **Scope 1, Scope 2, and, if appropriate, Scope 3** greenhouse gas (GHG) emissions, and the related risks



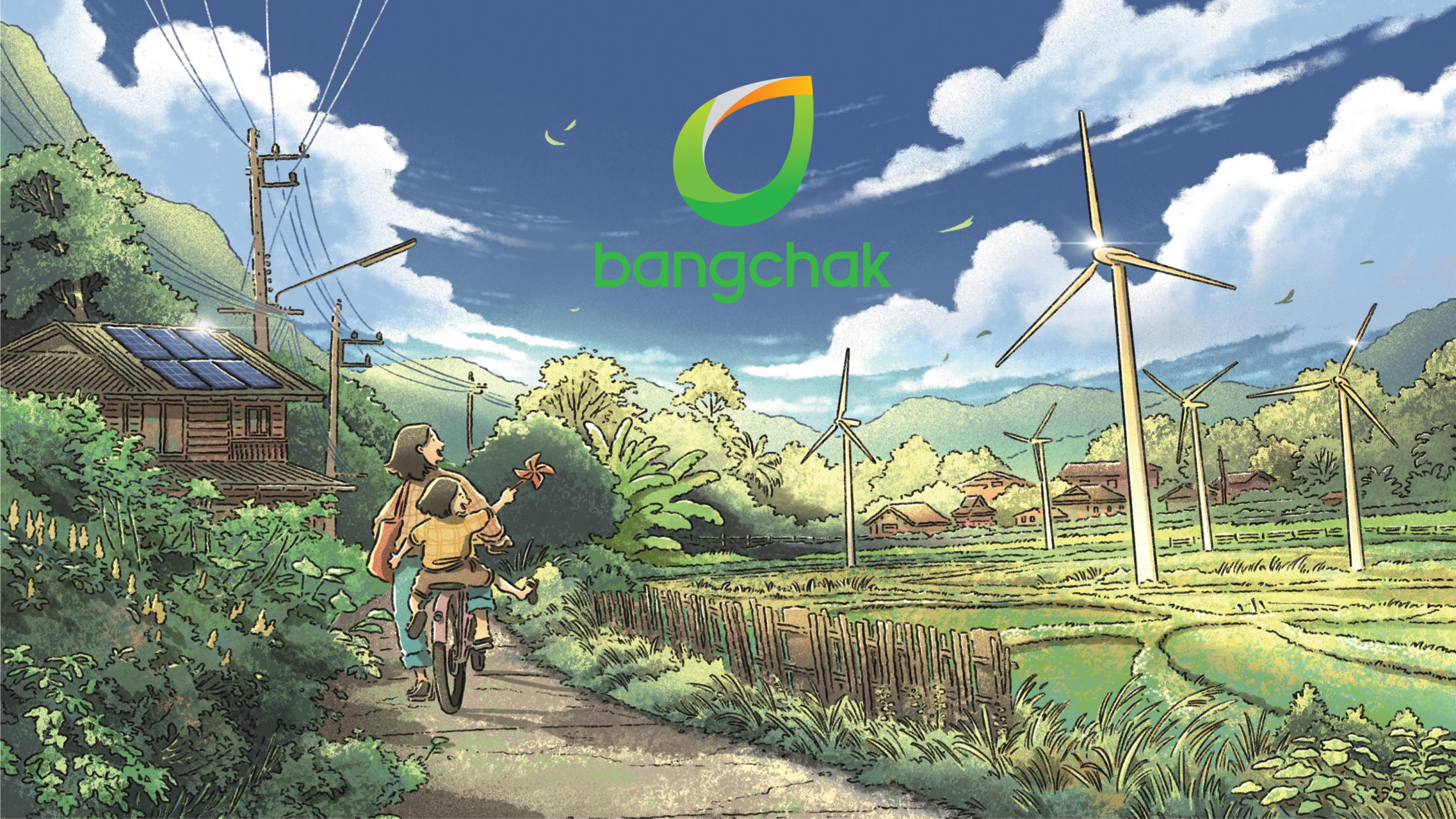
Bangchak's GHG emissions Boundary covers:

- Scope 1 and 2 of Phra Khanong Refinery, Headquarter and Regional Offices
- Scope 3: Phra Khanong Refinery, Headquarter and Regional Offices, Use of sold product by Marketing Business Group and Company Owned Service Station including other investees (BSRC, BFPL, BCPT, BCR and BGN)

Metrics and Targets

Disclose **Scope 1, Scope 2, and, if appropriate, Scope 3** greenhouse gas (GHG) emissions, and the related risks

GHG Emissions	Prior year (2024) tCO_2e	**Boundary/Method/Emission change in 2025**
Scope1	**976,281**	**-7%**
Scope2	**8,612**	**-28%**
Scope3	**4,626,843**	**+73%**
• Category 1: Purchased goods and services	1,125,034	Increased production capacity
• Category 4: Upstream transportation and distribution	703,251	Increased production capacity
• Category 5: Waste generated in operations	70,098	-71%
• Category 6: Business Travel	209	-31%
• Category 9: Downstream transportation and distribution	70,715	Increased production capacity
• Category 11: Use of sold product	2,642,061	Expansion of data collection from sales to Industry and B2B customer segments, in addition to service stations.
• Category 15: Investment (scope 1+2)	15,476	Inclusion of additional data collection from financed emissions (BSRC)


bangchak