





Bangchak Sriracha Public Company Limited

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



Bangchak Sriracha Public Company Limited (BSRC) applied the TCFD framework in the management of climate-related risks and opportunities. We have integrated the TCFD in the process following TCFD recommendations in 2017 and in line with the TCFD's 2021 "Annex: Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures" https://assets.bbhub.io/company/sites/60/2021/07/2021-TCFD-Implementing_Guidance.pdf. The disclosure areas and requirements following the TCFD framework are as below.

Disclosure Area	Disclosure Requirement
Governance  Disclose the Company's governance around climate-related risks and opportunities	a) Describe the board's oversight of climate-related risks and opportunities b) Describe management's role in assessing and managing climate-related risks and opportunities
Strategy  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	a) Describe the climate related risks and opportunities the Company has identified over the short, medium, and long term b) Describe the impact of climate-related risks and opportunities on the Company's businesses, strategy, and financial planning c) Describe the resilience of the Company's strategy, taking into consideration different climate-related scenarios , including a 2°C or lower scenario
Risk Management  Disclose how the Company identifies, assesses, and manages climate-related risks	a) Describe the Company's processes for identifying and assessing climate related risks b) Describe the Company's processes for managing climate related risks c) Describe how processes for identifying, assessing, and managing climate related risks are integrated into the Company's overall risk management
Metrics & Targets  Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material	a) Disclose the metrics used by the Company to assess climate-related risks and opportunities in line with its strategy and risk management process b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks c) Describe the targets used by the Company to manage climate-related risks and opportunities and performance against targets



Governance

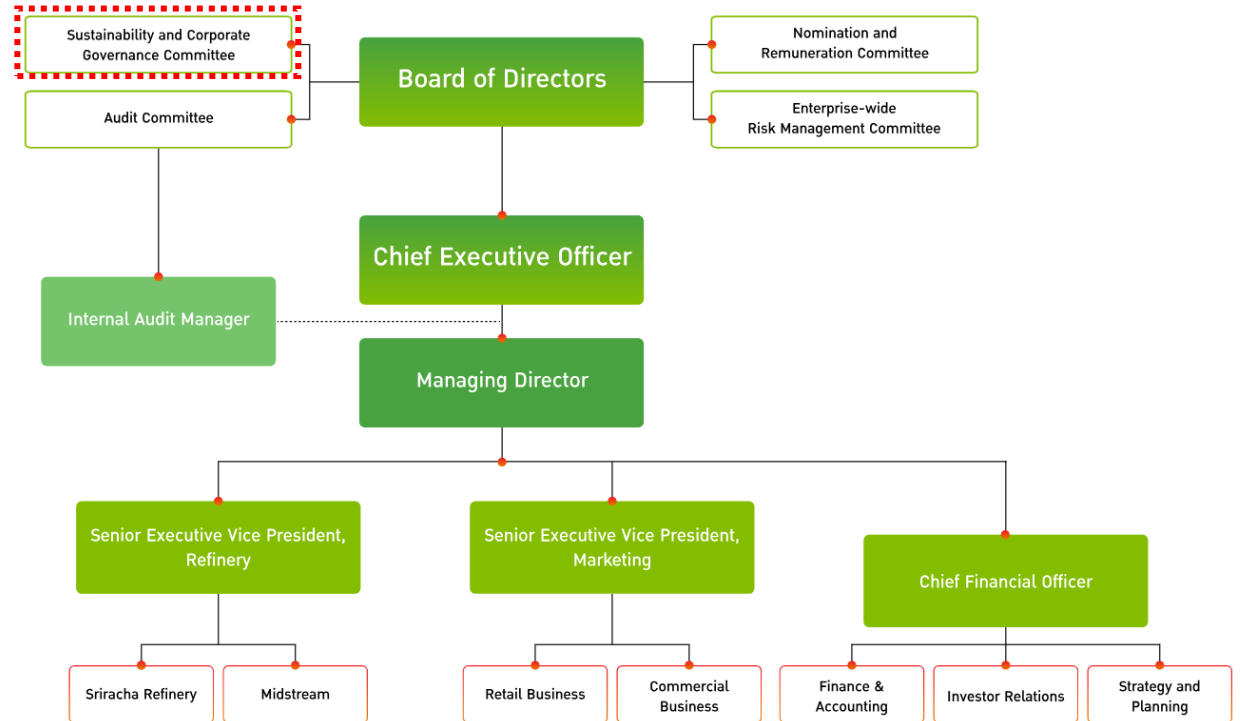
Governance

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

Board Oversight of Climate-Related Risks and Opportunities

The Board of Directors of Bangchak Sriracha Public Company Limited (BSRC) recognizes the significance of climate-related risks and opportunities and their potential impact on the company's long-term performance and resilience. The Board has committed to providing effective oversight of these risks and opportunities, ensuring they are integrated into BSRC's overall strategic decision-making process, while assigned Sustainability & Corporate Governance Committee (SCGC) on monitoring progress against Company goals and targets.

The Board normally holds monthly meeting, while the SCGC holds quarterly meeting. Additional meetings may be scheduled as required.



- **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 change guideline using TCFD for enhancement task Force on Climate-Related Financial impact**.
- Perform duties as assigned by the Board of Directors.

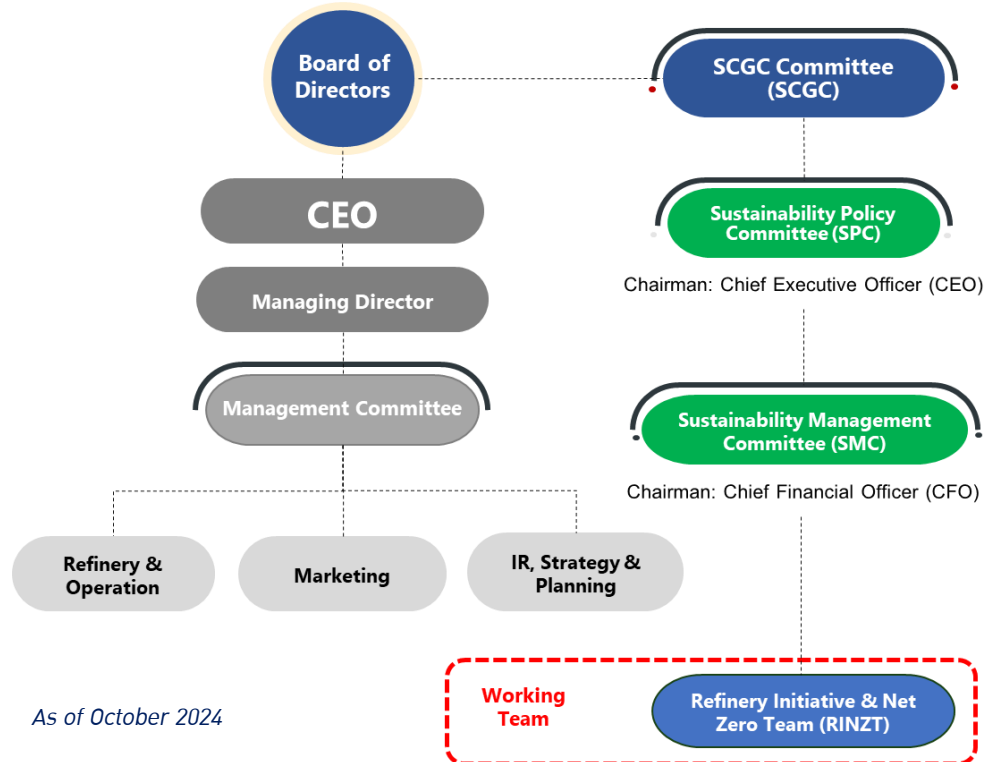
Governance

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

Management's Role in Assessing and Managing Climate-Related Risks and Opportunities

BSRC's management is responsible for assessing and managing climate-related risks and opportunities. A **Sustainability Policy Committee (SPC)** and a **Sustainability Management Committee (SMC)** have been established to lead these efforts. These two Committees conduct climate change policies and strategies, assess climate-related risks and opportunities, and manage GHG emission reductions to pursue the Company's Carbon Neutrality and Net Zero GHG emission targets.

The GHG emission has been included in both CEO and Management KPI for performance assessment.



At the policy level: Sustainability Policy Committee (SPC) set the direction, policy and strategies associated with climate change and climate-related risks and opportunities for sustainable business development for BSRC in response to SDGs, guidelines of corporate sustainability assessment as well as needs and expectations of the shareholders.

At the management level: Sustainability Policy Committee (SMC) conducts climate change policies and strategies, climate-related risks and opportunity assessment, and GHG emission reductions in order to pursue the Company target of Carbon Neutrality and Net Zero GHG emission.

Refinery Initiative & Net Zero Team (RINZT): RINZT drives the Net Zero initiatives and planning, aligns with Company carbon neutrality and Net zero target.

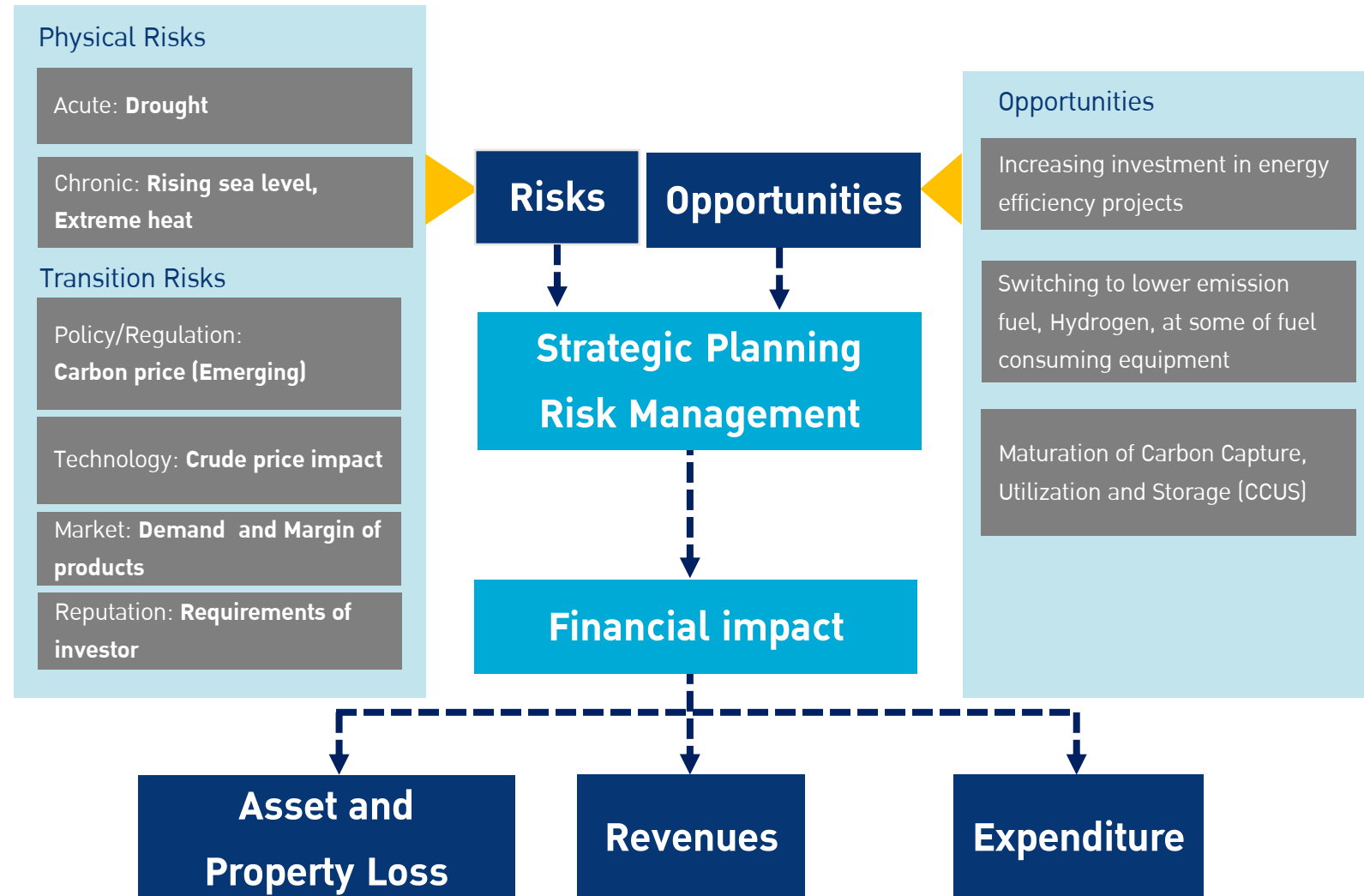


Strategy

Climate-Related Risks and Opportunities

BSRC identified key climate change risks and integrates climate drivers into environmental scanning, to identify factors that could potentially impact the Company. BSRC evaluated climate-related risks across short-term (0-2 years), medium-term (2-10 years), and long-term (>10 years) horizons, and incorporated them into the TCFD report.

The Company applied both qualitative and quantitative climate-related scenario analyses, considering physical scenarios like SSP1-2.6 (below 2°C) and SSP5-8.5 (above 2°C) and transition scenarios based on the IEA World Energy Outlook 2023. These scenarios help BSRC understand the potential impacts of climate change on its business, strategy, and financial planning.



Strategy

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



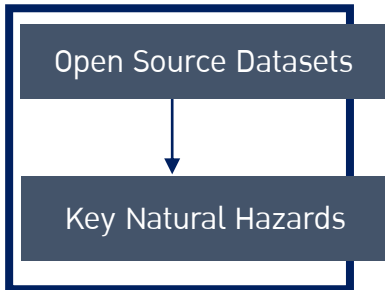
Physical Risks

Physical Risk Assessment Process

BSRC has identified the physical risk hazard using qualitative assessment methodology.

Geospatial Information

1 Define Baseline Natural Hazards



Applied ThinkHazard! developed by World Bank Group to provide a general view of the hazards for a given location that should be considered in climate resilience. The hazard levels provided are based on published hazard data, provided by a range of private, academic and public organizations.

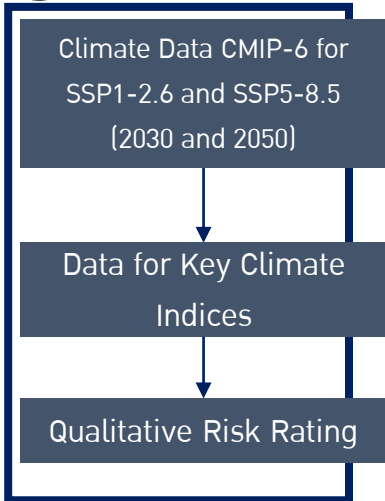
An initial baseline hazard evaluation was conducted for Bangchak Sriracha Public Company Limited using Thailand and Sriracha (Si Racha) District database to analyze key natural hazard for **Bangchak Sriracha Refinery location**

For more information on ThinkHazard!, please access ThinkHazard!

ThinkHazard!

Identify natural hazards in your project area and understand how to reduce their impact

2 Climate Change Projections



Extract the hazard risk data from Climate Change Knowledge Portal

- Time period: Historical period (1950-2014), 2030, 2040 and 2050
- Scenario: SSP1-2.6 and SSP5-8.5 in 2030 and 2050

Data extracted from Climate Change Knowledge Portal. Example of data extraction include:

- Time period: Historical period (1950-2014), 2030, 2040 and 2050

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, please access:

<https://climateknowledgeportal.worldbank.org/country/thailand/climate-data-projections>

Climate projection data is modeled data from the global climate model compilations of the Coupled Model Inter-comparison Projects (CMIPs), overseen by the World Climate Research Program. Data presented is CMIP6, derived from the Sixth phase of the CMIPs. The CMIPs form the data foundation of the IPCC Assessment Reports. CMIP6 supports the IPCC's Sixth Assessment Report.

Strategy

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

Physical Risks

Baseline natural hazard*

*data map as of 24 May 2024 from <https://thinkhazard.org/en/report/26540-thailand-chonburi-si-racha>



ThinkHazard!

Hazard level

High

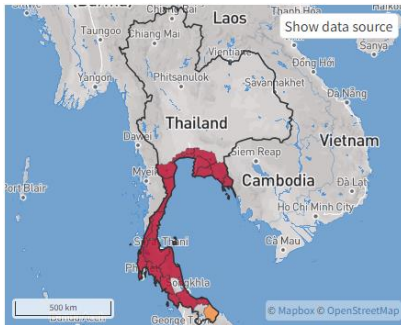
Medium

Low

Very low

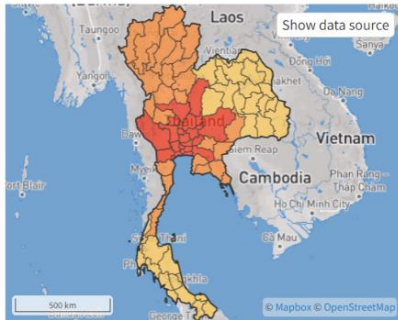


Coastal Flood



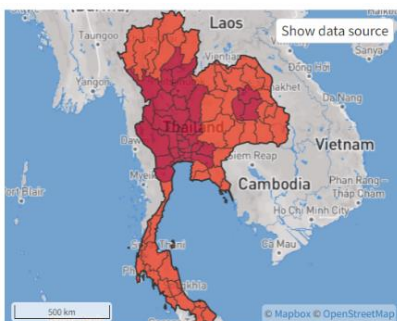
In Sriracha, coastal flood hazard is classified as **medium** according to the information that is currently available. **This means that there is more than a 20% chance of potentially-damaging coastal flood waves occurring in the next 10 years.**

Drought



In Sriracha, water scarcity is classified as **low** according to the information that is currently available to this tool. This means that **there is a 1% chance drought will occur in the coming 10 years.**

Extreme Heat



In Sriracha, extreme heat hazard is classified as **medium** based on modeled heat information currently available to this tool. This means that there is **more than a 25% chance that at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years.**

Strategy

Climate change projection and Selection top risks

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



Physical Risks



Think Hazard!		World Bank Group - Climate Change Knowledge Portal For Development Practitioners and Policy Makers					
		SSP5-8.5			SSP1-2.6		
		2030	2040	2050	2030	2040	2050
At Sriracha, Chonburi, Thailand (Cover Refinery Business)							
Extreme Heat	 Medium	Moderate Increase	Moderate Increase	Moderate Increase	Moderate Increase	Moderate Increase	Moderate Increase
Drought	 Low	Slight Decrease	Slight Decrease	Slight Decrease	Slight Decrease	Slight Decrease	Slight Decrease
Coastal flood	 Medium	Slight Increase	Slight Increase	Slight Increase	Slight Increase	Slight Increase	Slight Increase

Note: SSP5-8.5 scenario: A pathway delivers a temperature increase of about 4.4°C by 2100, relative to pre-industrial temperatures.

Note: SSP1-2.6 scenario: Sustainable development scenario. A pathway which is representative of a scenario that aims to keep global warming stays below 2.0°C and above pre-industrial temperatures by 2100.

Legend and Hazard Score

Category	Drought (Change in annual drought probability)	Riverine & Urban Floods (change in 1 day and 5 day maximum rainfall)	Coastal floods and sea level rise	Extreme Heat (Change in annual average maximum temperature)	
3	Significant Increase	<-1	>10%	>50cm	>2°C
2	Moderate Increase	<-0.5	>5%	>25cm	>1°C
1	Slight Increase	<0	>0%	>0cm	>0°C
0	No Change	0	0%	0cm	0°C
-1	Slight Decrease	>0	<0%	<0cm	<0°C
-2	Moderate Decrease	>0.5	<-5%	<-10cm	<-1°C
-3	Significant Decrease	>1	<-10%	<-20cm	<-2°C

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



Extreme Heat: The temperature projection from Climate Change Knowledge Portal showed moderate **increase in all** scenarios. This situation has been selected to do risk assessment.



Drought:

The SPEI Drought Index projection from Climate Change Knowledge Portal showed slight decrease **in all** scenarios. We use seawater for our refining process, hence minimum impact from drought.



Coastal Flood: The sea level projection showed a **slightly increase** in all scenarios. This situation has been selected to do risk assessment.

Strategy

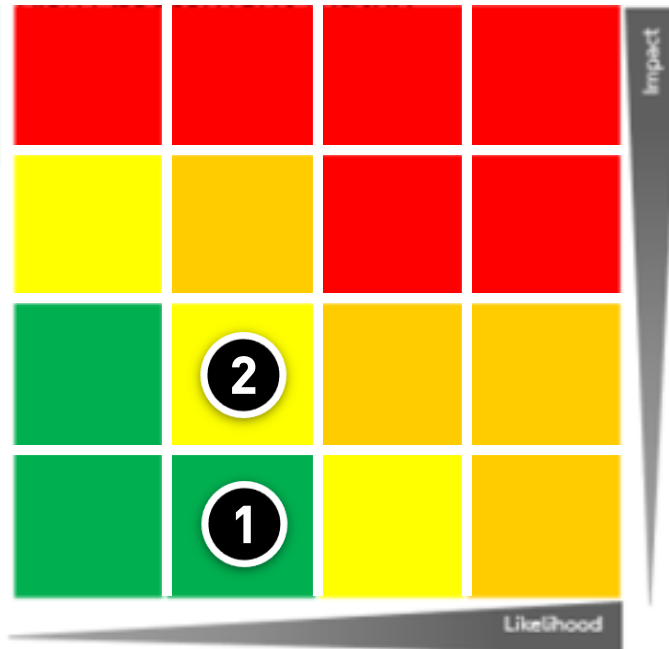
Describe the **impact** of climate-related risks and opportunities on the Company's businesses, strategy, and financial planning

Physical Risks

Physical Risk Prioritization Matrix

Our risks are prioritized using our Enterprise Risk Management definitions for impact and likelihood.

This prioritization had helped us understand what parts of our strategy we should pursue first. These risks are described below.



Risk levels

- High
- Medium
- Low
- Very low

1. Coastal Flood and sea water level increase

- Rising sea level forecasting from 2014 up to 2050 at Koh Si Chang is less than 0.25 m. BSRC Sriracha refinery is located about 3.85 m above mean sea level, hence we have not foreseen significant impact to refining operation from coastal flood.
- In addition, our operation at Berth islands (BI) is limited at maximum 25 knot wind speed. Therefore, no significant impact to cargo discharge or loading has been foreseen.
- Increasing in sea level could enable deeper draft for vessel operation at BI and Multi-Buoy Mooring (MBM), however the opportunity in this deeper vessel draft is insignificant.

2. Extreme heat

- The temperature projection from Climate Change Knowledge Portal showed potential increase of 1.9°C in worst case scenario. There is a potential of worker prolonged exposure to extreme heat, resulting in heat stress which required the medical treatment from licensed health care professional. The work productivity could be reduced by 10%. Reduction of productivity could resulting in 10-25% higher in overall maintenance activity including labor and equipment cost. In critical maintenance work e.g. turnaround it may cause of delay start up.
- Potentially increasing in maximum temperature could lead to higher sea water temperature. BSRC Sriracha refinery use seawater in heat exchangers, so increase in inlet temperature could result in lower efficiency of heat exchange.
 - In addition, increasing of air temperature could result in poor heat exchange between hot seawater and air, potential of higher evaporation lost, hence equipment modification may be required to maintain operation run rate.

Strategy

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



Physical Risks

Physical Risk Implications

Risk levels

- High
- Medium
- Low
- Very low

Bangchak Sriracha Physical Risk Assessment in Time Horizon timeframes

Risk Type	BSRC's Risk Driver	Impact in time horizon		
		Short term (0-2 years)	Medium term (2-10 years)	Long term (>10 years)
Chronic	Extreme Heat :			
	Sea Level Rise:			



Extreme heat Impact:

Minimum productivity impact , labor may increase due to more rest time required during prolonged extreme heat exposure



Flood & Sea Level Rise Impact:

No financial impact

Physical Risks

Based on Bangchak Sriracha climate risk assessment, we set up overall plan to mitigate and adapt to response.

Strategic Response of Sea Level Rise



Refinery Business

- No action is required based on predicted 0.25 m sea level increasing VS 3.85 m of current refinery elevation from mean sea level.

Strategic Response of Heat stress



Refinery Business

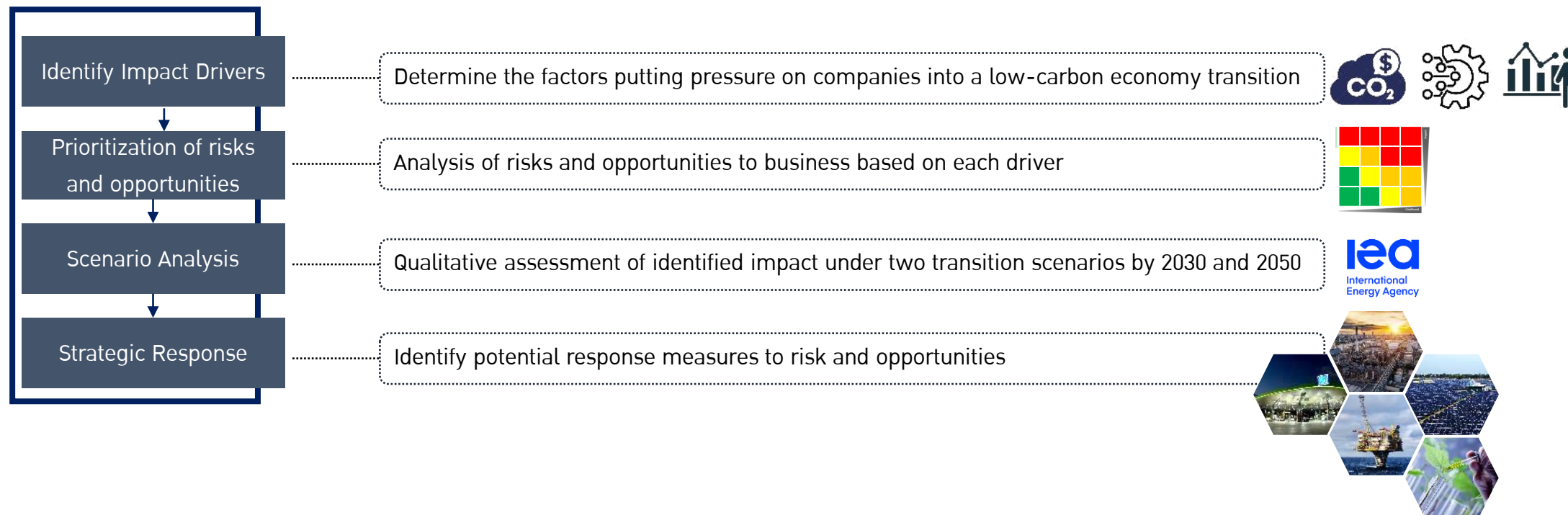
- Follow site practice to prevent workers from heat exposure e.g. increase mechanical ventilation, monitor air temperature, provide regular break, change work schedule from daytime to nighttime, provide worker rest shed and etc.
- Keep monitor performance of cooling towers and heat exchangers and maintenance program per current site practices.

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

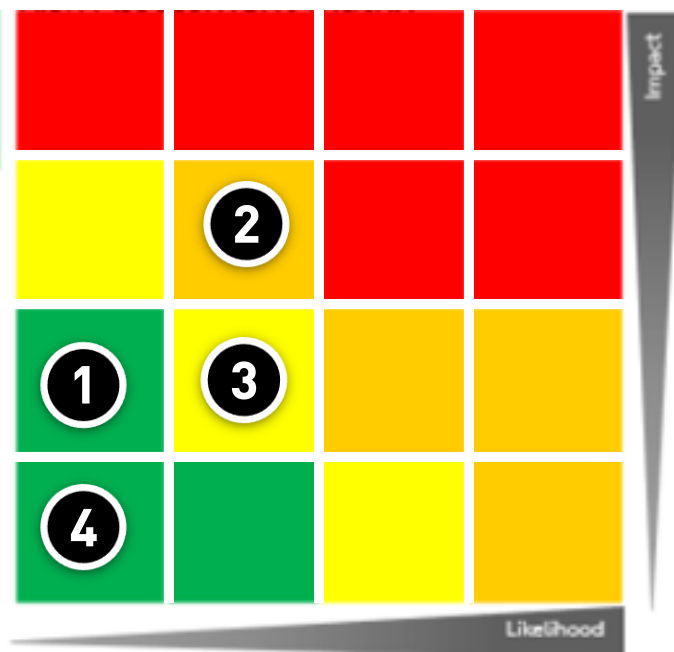


Strategy

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

Transitional Risks

Transition Risk Prioritization Matrix – Matrix shows **Short Term Risk**



Risk levels

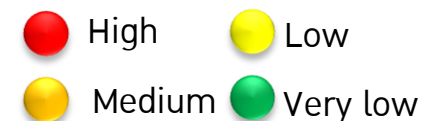
- High
- Low
- Medium
- Very low

Climate Risk Hazards	Risks Consideration
Policy & Legal	<p>1. Carbon price</p> <p>As BSRC business is energy-intensive, the future implementation of a carbon pricing mechanism will have impact on BSRC operating costs and consequently revenue.</p>
Technology	<p>2. Crude oil price</p> <p>New technology may drive to alternative energy sources which resulted in less demand on crude hence drive to lower crude price which will affect to inventory gain/loss.</p>
Market	<p>3. Demand and Margin of Product</p> <p>The demand on Bio-fuel as well as other alternative energy sources are expected to increase as consumers are seeking to decarbonize and meet GHG reduction target. Sale volume might decrease according to the lower demand according to the sustainability trend, or lower margin according to lower fuel price.</p>
Reputation	<p>4. Reputation</p> <ul style="list-style-type: none"> Shifts in consumer preferences Stigmatization of sector Increasing stakeholder concern or negative stakeholder feedback

Strategy

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

Risk levels



Transitional Risks

Bangchak Sriracha Transitional Risk Assessment in Time Horizon timeframes.

Category	Driver	Driver Description	Impact in time horizon			Impacts
			Short term (0-2 years)	Medium term (2-10 years)	Long term (>10 years)	
Policy and Legal	Carbon Price	As BSRC business is energy-intensive, the future implementation of a carbon pricing mechanism will have impact on BSRC operating costs and consequently revenue.	●	●	●	Increasing OPEX from mandatory carbon prices

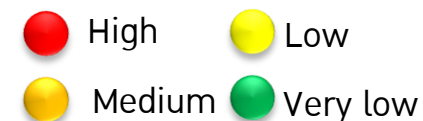
Strategic Response of Carbon Price

BSRC has **been improving the efficiency of operation processes, using low-emission fuels, and implementation of energy efficiency projects** to achieve company target on carbon emission reduction 30% by 2036 and Net-Zero GHG emission target by 2050. We have also **participated the Carbon Markets Club to promote carbon credit trading** accelerating the transition into low carbon society.

Strategy

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

Risk levels



Transitional Risks

Bangchak Sriracha Transitional Risk Assessment in Time Horizon timeframes.

Category	Driver	Driver Description	Impact in time horizon			Impacts
			Short term (0-2 years)	Medium term (2-10 years)	Long term (>10 years)	
Technology	Crude oil price	New technology may drive to alternative energy sources which resulted in less demand on crude hence drive to fluctuation in crude price which will affect to inventory gain/loss.				Fluctuation of crude oil price cause gross refining margin decreased

Strategic Response of Crude oil price

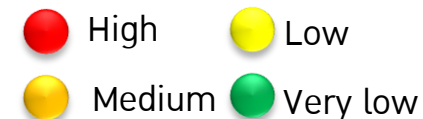
Price of fossil fuel might be decreased due to the lower demand which will affect to inventory gain/loss. There are three main strategies to cope with volatility.

- (1) Enhance flexibility of crude sourcing** via the service provider (BCPT)
- (2) Refinery optimization** via the establishment of Refining Optimization and Synergy Enterprise (ROSE) which utilize various optimization programs to maximize BSRC benefit.
- (3) Product diversification** to the uplift product value. We has modified the refinery to more diverse products to the market. There are Solvent product for Chemical business, Propylene for Petrochemical, Special grade Asphalt.

Strategy

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

Risk levels



Transitional Risks

Bangchak Sriracha Transitional Risk Assessment in Time Horizon timeframes.

Category	Driver	Driver Description	Impact in time horizon			Impacts
			Short term (0-2 years)	Medium term (2-10 years)	Long term (>10 years)	
Market	Demand and margin of product	The demand on Bio-fuel as well as other alternative energy sources are expected to increase as consumers are seeking to decarbonize and meet GHG reduction target. Sale volume might decrease according to the lower demand according to the sustainability trend, or lower margin according to lower fuel price.	Low	Low	Low	Decreasing of demand cause sale volume and margin decreased

Strategic Response of Demand and Margin of Product

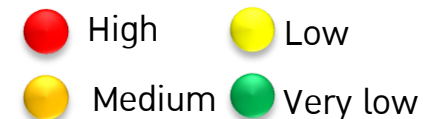
Sale volume might decrease according to the lower demand according to the sustainability trend, or lower margin according to lower fuel price.

- BSRC, as subsidiary of Bangchak Corporation, is using Bangchak Brand for retail business.
- Bangchak Corporation has **developed service station model** to enhance return, not only to maintain high quality fuel but also new value proposition to our value customer as a "Greenovative Destination", a lifestyle destination for intergeneration, to fulfilled customers' needs and meet their changing behavior. The model has included on-site offering of variety food and beverage services from well-known brands, Grab & Go delivery services, unique design service station.

Strategy

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

Risk levels



Transitional Risks

Bangchak Sriracha Transitional Risk Assessment in Time Horizon timeframes.

Impact in time horizon

Category	Driver	Driver Description	Impact in time horizon			Impacts
			Short term (0-2 years)	Medium term (2-10 years)	Long term (>10 years)	
Reputation	Poor public perception of an industry, program, or policy	<ul style="list-style-type: none"> Shifts in consumer preferences Stigmatization of sector Increasing stakeholder concern or negative stakeholder feedback 	●	●	●	<ul style="list-style-type: none"> Reducing revenue from decreased demand for goods, decreased production capacity (e.g., delayed planning approvals, supply chain interruptions and etc.) Reducing revenue from negative impacts on workforce management and planning (e.g., employee attraction, retention and etc.)

Strategic Response of Reputation

- BSRC has processes for stakeholder engagement to increase stakeholder trust and get their needs/expectations.
- BSRC Retail business as part of Bangchak brand has clear strategy to maintain sale volume.
- BSRC has deployed employee engagement program.

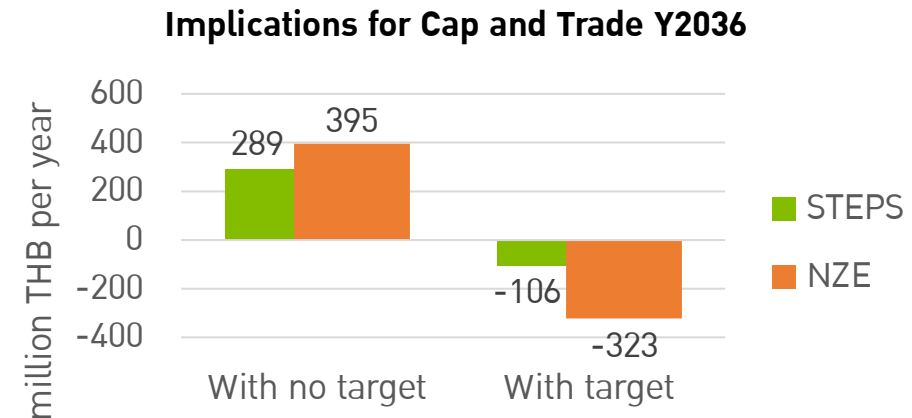
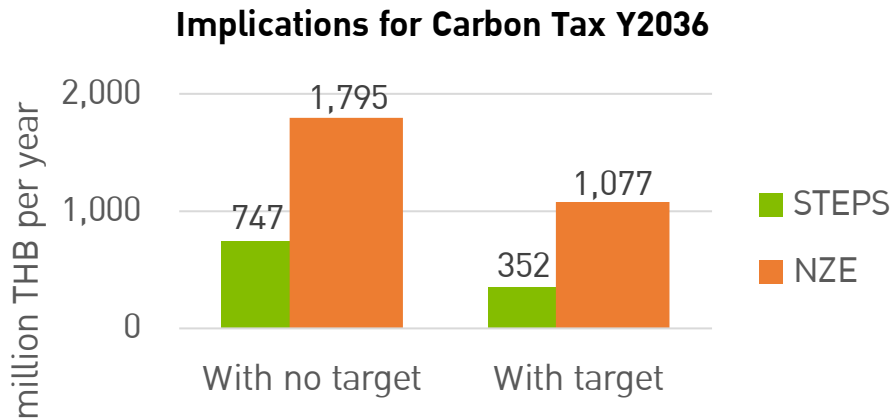
Strategy

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



Transitional Risks

BSRC had **compared the impacts for carbon price in different scenario** that reflect current real-world conditions and starting points of the International Energy Agency (IEA): World Energy Outlook (WEO) 2023. First, **The Stated Policies Scenario (STEPS)** which is an outlook based on the latest policy settings **and the Net Zero Emissions by 2050 Scenario (NZE)** which is additional progress is still required to meet the objectives which limits global warming to 1.5°C. BSRC assumed that 40% GHG reduction (30% from efficiency and process improvement and 10% from reforestation) will be achieved by 2036 and 60% carbon sequestration technology will be achieved by 2050 in line with BSRC Strategy "Pathway to Net Zero 2050". With these targets, BSRC will have **additional revenue from trading allowances (Cap and Trade) and lower impact comparing with no target set in Carbon Tax mechanism.**



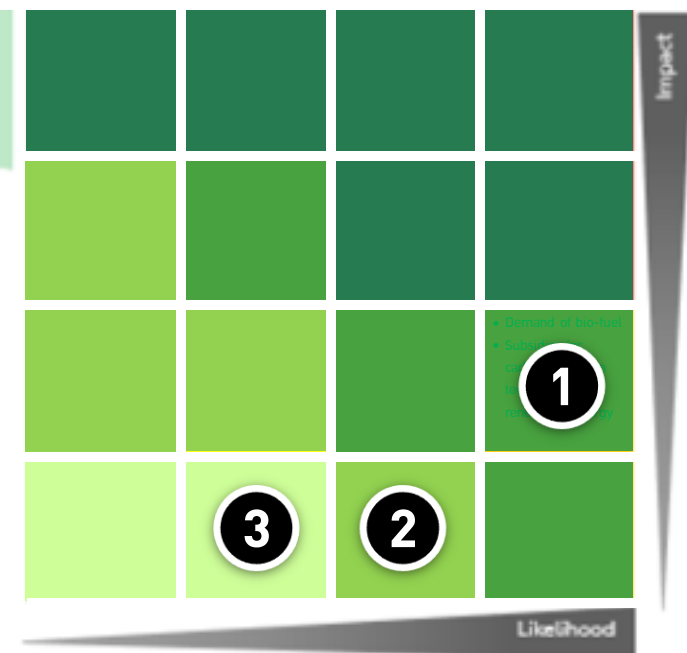
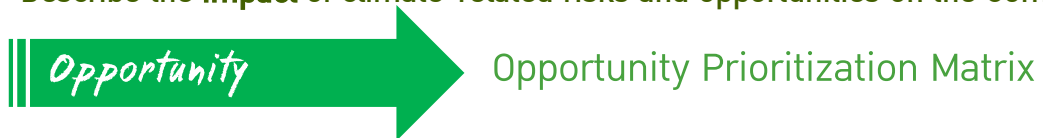
* Negative means additional revenue from trading allowances

Assumptions:

- Carbon tax in Thailand will be implemented before 2036
- For Cap and Trade, the cap reduction will be 2% per year in line with EU-ETS
- BSRC's business will grow according to current plans
- Conservative assumption of carbon tax on both Scope 1 and 2, typically governments only put carbon price on Scope 1, however in some jurisdictions such as Japan a carbon price is placed both on Scope 1 and 2

Strategy

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



Opportunity levels

- High
- Low
- Medium
- Very low

Climate-Related Opportunity	Opportunity Description
Resource Efficiency	1. Reduce Operating Cost by improving energy efficiency, align with strategy BCP316Net. Potential NPV@9.5% at 8 MUS\$
Energy Source	2. Opportunity to switch to lower emission fuel, Hydrogen, to reduce the OPEX related to Climate Change Regulations such as Carbon Tax
Technology	3. Cut down on operational costs as the cost (USD/tCO ₂) of CCUS technologies drops below the price of carbon (USD/tCO ₂ e). This technology will help reduce the amount of money paid to the government regarding emissions by cutting down on emissions (without a carbon price, CCUS will not be feasible from a cost perspective).





Strategy

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










Opportunity

Bangchak Sriracha Opportunity Assessment in Time Horizon timeframes.

Opportunity levels

-  High
-  Low
-  Medium
-  Very low



		Impact in time horizon			Impacts	Strategic Response
Opportunity Driver		Short term (0-2 years)	Medium term (2-10 years)	Long term (>10 years)		
Resource Efficiency	Increasing investment in energy efficiency projects				<ul style="list-style-type: none"> Potential NPV@9.5% at 8 MUS\$ 	<ul style="list-style-type: none"> Discipline Capital investment consideration the overall business objectives
Energy Source	Opportunity to switch to lower emission fuel, Hydrogen, to reduce the OPEX related to Climate Change Regulations such as Carbon Tax				<ul style="list-style-type: none"> Reducing Operating Cost (OPEX) related to Climate Change Regulations 	<ul style="list-style-type: none"> Discipline Capital investment consideration the overall business objectives
Technology	Maturation of Carbon Capture, Utilization and Storage (CCUS)				<ul style="list-style-type: none"> Reducing CAPEX for CCUS Reducing carbon cost 	<ul style="list-style-type: none"> Seek collaboration with strategic partners to pilot and assess CCUS applications

Strategy



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

“Shaping sustainable future with premier energy through innovative solutions” is the Company’s Vision. Our high-quality products are essential to the wellness of the people of Thailand. Our Company exists to strive to find solutions that optimize energy challenges (affordability, security, and sustainability), and to create a sustainable and resilient energy system for the future. To achieve such goal, we commit to operating our businesses in a responsible and sustainable manner, supporting society, and supplying our high-quality products to meet evolving demand while working towards low-carbon solutions.



Environmental Care: Care for the Environment and Community

Efficient Operations: Operate with Highest Efficiency

Empathetic : Do Business with Ethics, Empathy, and Human Rights

Evolving by Innovation: Innovate and Explore New Technology

Our Sustainability Strategy

Company Vision	Shaping sustainable future with premier energy through innovative solutions			
Sustainability Strategy	Environmental Care Care for the Environment and Community	Efficient Operations Operate with Highest Efficiency	Empathetic Do Business with Ethics, Empathy, and Human Rights	Evolving by Innovation Innovate and Explore New Technology
Sustainability Strategic Goal	Net Zero, Low Emission Fuels (LEF), Partner of choice for the community, Clean Society	Operational Eco-Efficiency, Circular Economy	Good Governance, Role Model Universal Human Rights	Low Carbon Solutions, Climate Technology and Greenovate Procurement

Strategy

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



BSRC acknowledges the potential risks posed by climate change and is taking proactive measures to ensure the resilience and sustainability of its operations. The Company recognizes the importance of aligning its strategies with global climate goals, such as **limiting global warming to 2°C or lower**.

The Company set targets to achieve **Carbon Neutrality by 2036 and Net-Zero operated Scope 1 and 2 greenhouse gas emissions by 2050**. Actions needed are incorporated into its medium-term business plans, which are updated annually. The future planned development activities will follow Bangchak Corporation strategy, **BCP316 Net**.



Strategy

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



BSRC utilizes an **internal carbon price**, a hypothetical cost assigned to each ton of CO₂ emissions, to identify potential risks and opportunities across its operations and supply chain. This, along with internal fees, quantifies the capital investment needed to achieve climate-related targets. We implement these programs company-wide, **leveraging external resources** like price projections from the International Energy Agency (IEA) and internal consultations to establish pricing.

This core element is continuously integrated into our strategy and has become the standard practice in business planning. It **serves to test strategic and investment assumptions**, with the internal carbon price acting as a planning tool to identify revenue opportunities, assess risks, and incentivize energy efficiency to reduce costs and guide capital investment decisions.





Risk Management

Risk Management

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

Our assessment focus on own operations activities. Time horizons climate risk assessment covered short-term (0-2 years), medium-term (2-10 years) and long term (> 10 years).

Risk management policy:

- **Mandates managers and employees** in various departments **take responsibility for risk management**. They must play a role and participate 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 **implement and 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



1. Evaluate factors that may impact the goal



2. Assess how various factors impact in which aspect

ThinkHazard!

Hazard level

High	Medium
Low	Very low

Risk type: Transition
Risk sub-category: Policy
Climate risk/opportunity driver: Increase price of emissions, Other climate policy and regulation, Litigation for non-compliance, Geopolitical risk, Increased cost of compliance, Poor public perception of an industry, program or policy, Low emissions energy supply, Capital cost of new technology, Resilience opportunities through technology, Changing public preference and behaviours, Increased supply chain costs, Investment opportunities to enable future technologies, Stranded assets from fossil fuels, Trade exposure risks (carbon border tariffs, etc.), Workforce requirement, Circular economy opportunities

Identify the Risks and Opportunity

Assess the Risk

Priorities the Risk

Plan and Take Action

Monitor, Evaluate and Communicate

5. Define Key Risk Indicators (KRIs)

Key Risk Indicator (KRI) : Operational Risk

Operation Risk	KRI	Current Status	Risk Appetite / Risk Tolerance		
			ไม่ยอมรับ	ไม่ยอมรับ	ไม่ยอมรับ
การดำเนินงานที่ไม่สอดคล้อง	ระดับความเสี่ยง	ระดับความเสี่ยง < 0.3	ระดับความเสี่ยง < 0.3	ระดับความเสี่ยง > 0.3	ระดับความเสี่ยง > 0.5
การดำเนินงานที่ไม่สอดคล้อง	% Operation Availability	Operation Availability 90%	Operational Availability > 90.4%	Operational Availability > 90.4%	Operational Availability < 90.4%

4. Develop a risk management plan to reduce the impact or likelihood of risk occurrence

57 Risk Mitigation Plan : ธุรกรรมประกาศยกเลิกการใช้น้ำมันแกลีโพล 91

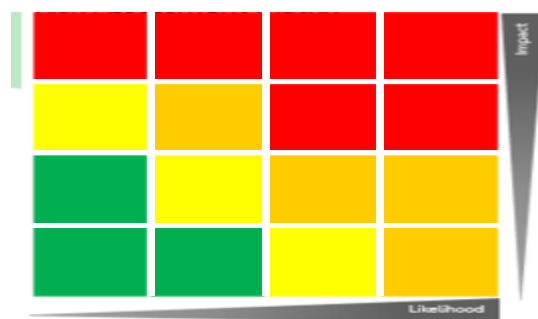
Risk Event : ธุรกรรมประกาศยกเลิกการใช้น้ำมันแกลีโพล 91
Root Cause Analysis : นโยบายภาครัฐ
Risk Impact : EBITDA ลดลง X จำนวนสินค้าเป็น Y% ของปริมาณ
Risk Owner : RFBG
Target : ลดลงจาก (4,3) เป็น (3,2)
Degree of Acceptance : Mitigating

Existing Risk Response

- เข้าร่วมกับพันธมิตรในการเจรจาภาครัฐ
- สื่อสารถึงนักลงทุน/โรดโชว์ เพื่อลดผลกระทบจากภาครัฐ

Required Risk Response	Cost (M\$)/MH	Due Date	Owner	Progress
1. สื่อสารกับพันธมิตรในการเจรจาภาครัฐ	-	ต่อเนื่อง	xx	ดำเนินการตามแผน

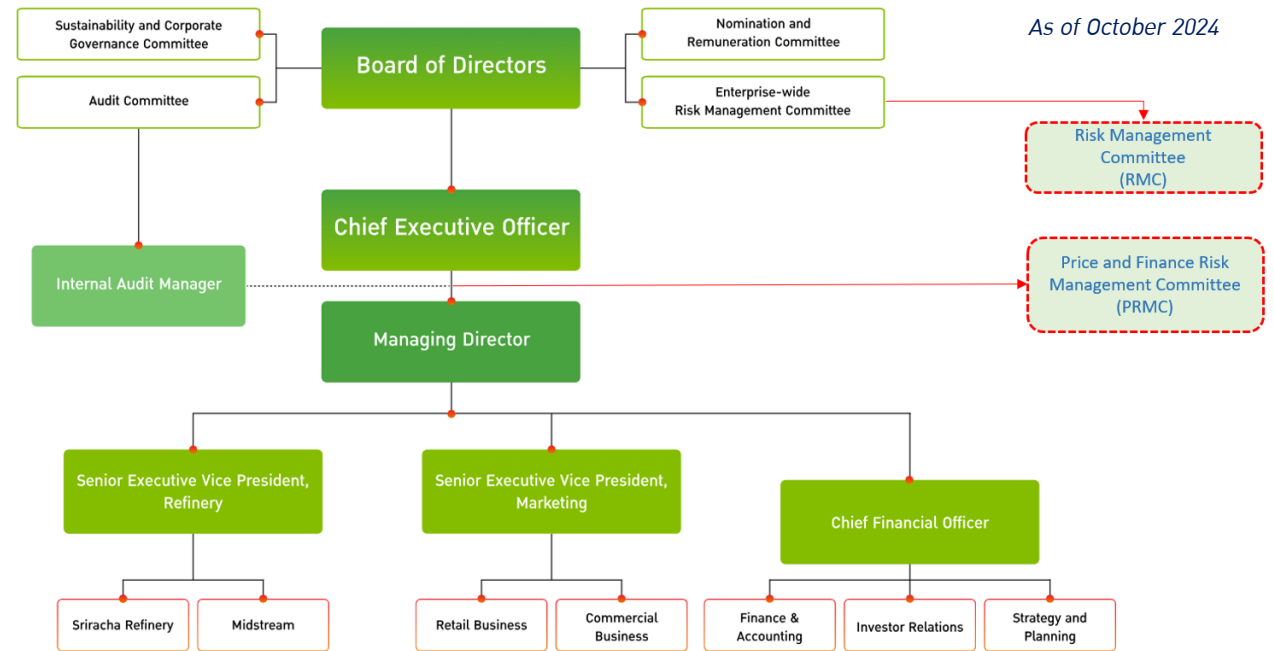
3. Evaluate the impact and likelihood of risk occurrence



Risk Management

Describe the Company's processes for managing climate related

Bangchak Sriracha 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.



Multiple internal and external risk factors that may affect Bangchak Sriracha'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. In addition, we have conducted scenario analysis of our own internal carbon price. Carbon tax (aligned with well below 2 degrees Celsius and 1.5 degrees Celsius scenarios) as well as Thailand's cap-and-trade scheme, were considered to identify the financial impact and plan the response strategy in different scenarios. Bangchak Sriracha has been implementing internal carbon shadow prices for new investment decision-making and energy efficiency projects. Examples of actions to mitigate transition risks include reducing GHG emissions through energy efficiency improvement projects to lower emission used in production. Bangchak Sriracha has been enhanced green procurement for products and services through supply chain management.

Risk Management

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

BSRC has a Climate Risk Management process and Integrated into multi-disciplinary company-wide risk management processes of the Company's centralized enterprise risk management program covering physical risk (acute and chronic) and transitional risk (current regulation, emerging regulation, technology, legal, market and reputation) including opportunity. The Framework and the principles for risk management that Bangchak Corporation has been utilized to systematize the management of risks linked with climate change throughout the Company. The purpose of this is to incorporate climate-related risk management into BSRC internal management to ensure that the Company can preserve and generate long-term value.





Metrics, Targets and Performance

Metrics and Targets (2023)



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

Metrics Used to Assess Climate-Related Risks and Opportunities

BSRC utilizes a range of metrics to assess climate-related risks and opportunities, aligning with its strategy and risk management process. Examples of the key metrics are such as: **Energy Intensity Index (EII), Greenhouse Gas (GHG) Emissions, Water Consumption, Waste Management, etc.**

In 2023
the Company have invested
about **1,000** million Baht
of environmental conservation expenditure



In 2023
the refinery's EII
of **85.3**



In 2023



92%
Waste to Reuse



Maintain efforts to reduce and reuse operational waste, 92% of Operational Hazardous Waste sent for External Reuse

In 2023




Desalination and reverse osmosis units can reduce Fresh water requirement around

1.3 Million Cubic Meter per year



Equivalent water required for **65,000** heads or **13,000** households

In 2023




The project to reduce leakage and water loss in 2023

enabled efficient and rapid repairs of leakage points,

resulted in reducing water loss by up to

10,000 tons per year,

which is equivalent to saving approximately **8,800** MW-hr of energy.



Metrics and Targets (2023)

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



Progress Towards Climate-Related Targets

Sustainability Development Goals

- The goal is to achieve **carbon neutrality by 2036**
- The goal is to achieve **Green House Gas emission (Scope 1 and Scope 2) GHG Net Zero by 2050**

In 2023

9%

Absolute GHG reduction

Absolute GHG Scope 1 and Scope 2 reduce from **1.07 tCO₂e** in 2022 to **0.97 tCO₂e** 2023.

BSRC has made significant progress towards its climate-related targets. In 2023, the Company achieved a **9% reduction in absolute Scope 1 and Scope 2 GHG emissions compared to 2022**. The refinery's energy intensity index (EII) of **85.3** demonstrates its commitment to energy efficiency.

While BSRC has made notable progress, the Company acknowledges that further efforts are needed to achieve its ambitious targets. The Company is **continuously evaluating new technologies and strategies to reduce its environmental impact and enhance its resilience to climate-related risks**.

Statement Registration No.: CFO ECEE 24-016

ECEE
ECEE CO.,LTD.

Carbon Footprint for Organization Verification Statement

The Verification Body of ECEE CO., LTD. Thailand attests that GHG inventory reported by

Bangchak Sriracha Public Company Limited

Site address verified:
3195/21-29 Rama IV Road, Klong Ton, Klong Toey District, Bangkok 10110

has been verified in accordance with ISO 14064-3 as meeting the requirements of

TGO Guidance of Carbon Footprint for Organization, 2022 [SCOPE 1+2]

The agreed level of assurance is LIMITED at materiality of 5%

Direct GHG emissions [SCOPE 1] :	964,190 tonnes CO ₂ e
Energy GHG emissions [SCOPE 2] :	5,311 tonnes CO ₂ e
Total GHG emission [SCOPE 1&2] :	969,501 tonnes CO₂e (GWP AR5)

Verification Period : 2023-01-01 to 2023-12-31

Mr. Monchai Jittipanyakul
Managing Director
ECEE Company Limited
February 20, 2024



Corporate Separateness Notice

Nothing in this material is intended to override the corporate separateness of entities. Working relationships discussed in this material do not necessarily represent a reporting connection, but may reflect a functional guidance, stewardship, or service relationship. Where shareholder consideration of an entity matter is contemplated by this material, responsibility for action remains with the entity.

In this report, all references to:

Company, BSRC, Bangchak Sriracha, we, us, or our refers to Bangchak Sriracha Public Company Limited

Bangchak, Bangchak Corporation, BCP or BCPT refers to any one or more of BANGCHAK CORPORATION PUBLIC COMPANY LIMITED and/or any of its subsidiaries or affiliates, as the context may require.

