



Regenerative
Happiness

ส่งต่อ...ความสุขไม่สิ้นสุด

ก้าวสู่ทศวรรษที่ 5

Biodiversity Management 2024

Standard and Guideline

The company collects data, assesses biodiversity risks, and develops measures using **GRI standard-304** biodiversity which is a standard for reporting requirements on the topic of biodiversity. Topic-specific disclosures including ;

Disclosure 304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas

Disclosure 304-2 Significant impacts of activities, products, and services on biodiversity

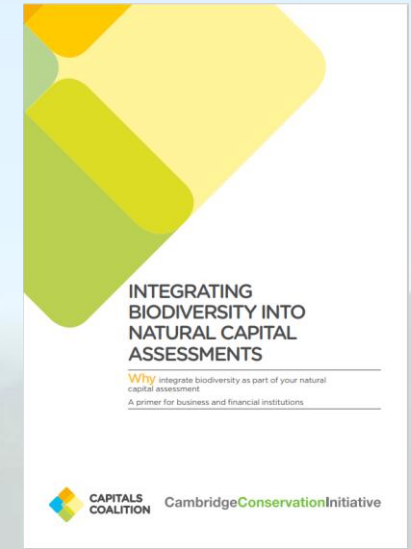
Disclosure 304-3 Habitats protected or restored

Disclosure 304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations

Furthermore, the company is employing the "**Integrating Biodiversity into Natural Capital Assessments**" framework, which was developed as a guideline for the private sector by the Cambridge Conservation Initiative and the Capitals Coalition. This framework helps companies develop biodiversity strategies, aiming to minimize impacts and effectively manage dependencies on nature.



<https://www.globalreporting.org/standards/media/1011/gri-304-biodiversity-2016.pdf>



https://capitalscoalition.org/wp-content/uploads/2020/10/Biodiversity-Guidance_COMBINED_single-page.pdf

Biodiversity Management

Bangchak Group recognizes the importance of balancing the ecosystem and biodiversity to ensure sustainable business operations and all stakeholders can utilize ecosystems and biodiversity fairly and equitably.

Encourage executives and employees at all levels to be aware of the risks and impact arising from business operations on biodiversity.



Refinery Oil Terminal Service stations
business operations

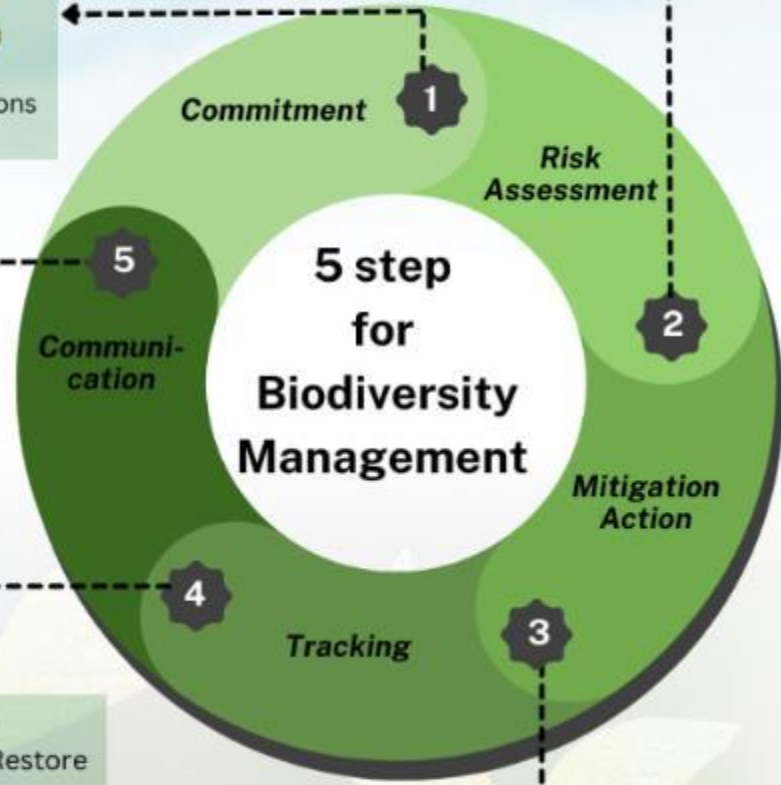
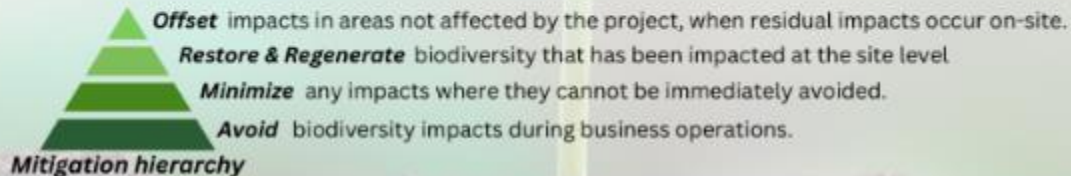


Bangchak Biodiversity Management and Anti-Deforestation Policy

Communicate progress and strategies and engage with Key stakeholders.

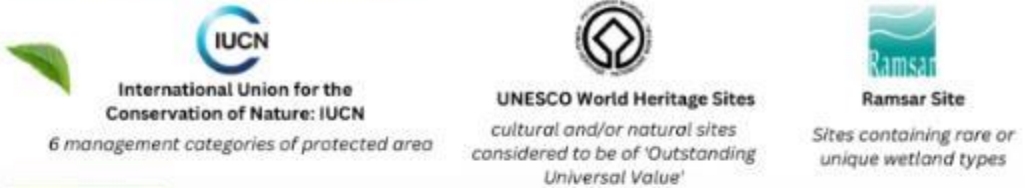
Measure & Monitor results of mitigating action.

Minimize any impacts in accordance to Mitigation Hierarchy "Avoid, Minimize, Restore & Regenerate and Offset.



Assess impacts at all stage of business operations throughout the business value chain via below methodology :

Location: To identify the impact of operational sites owned and managed in located in or near the Protected Area by "satellite maps (ArcGIS)."



Dependency: To evaluate the significance of its business's dependency on biodiversity by utilizing data sourced from the "ENCORE tool."



Impact Pollutions: To assess business impacts base on the impact of pollution at the business operations.



1. Biodiversity Management and Anti-Deforestation Policy and Commitment

Biodiversity Management and Anti-Deforestation Objectives;

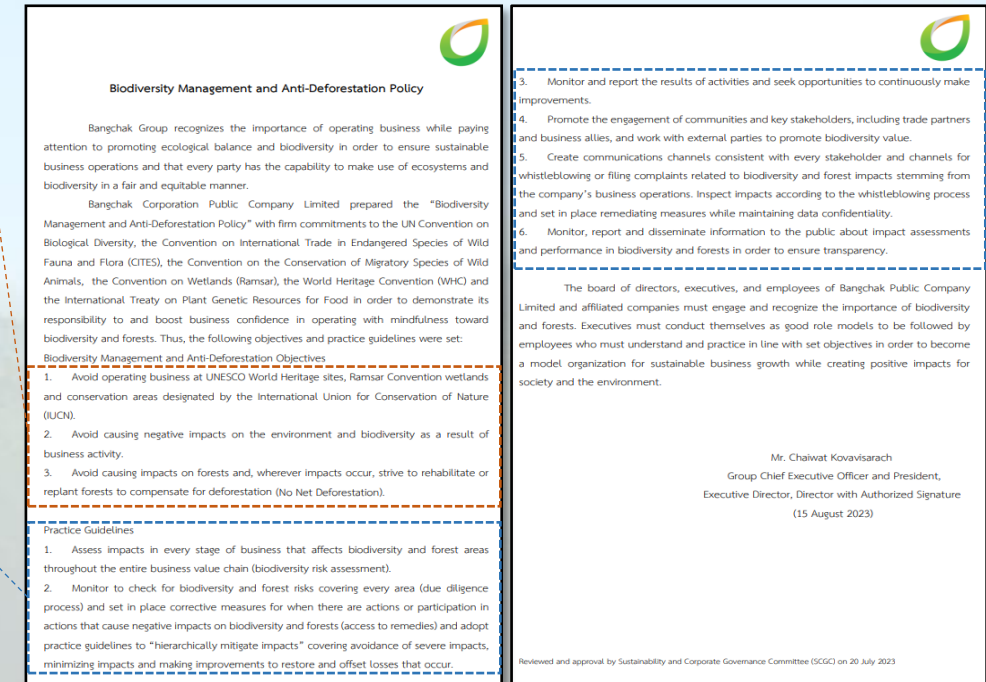
1. Avoid operating business at UNESCO World Heritage sites, Ramsar Convention wetlands and conservation areas designated by the International Union for Conservation of Nature (IUCN).
2. Avoid causing negative impacts on the environment and biodiversity as a result of business activity.
3. Avoid causing impacts on forests and, wherever impacts occur, strive to rehabilitate or replant forests to compensate for deforestation (No Net Deforestation).

Practice Guidelines

1. **Assess impacts** in every stage of business that affects biodiversity and forest areas throughout the entire business value chain (biodiversity risk assessment).
2. **Monitor** to check for biodiversity and forest risks covering every area (due diligence process) and set in place corrective measures for when there are actions or participation in actions that cause negative impacts on biodiversity and forests (access to remedies) and adopt practice guidelines to “**hierarchically mitigate impacts**” covering avoidance of severe impacts, minimizing impacts and making improvements to restore and offset losses that occur.
3. **Monitor and report** the results of activities and seek opportunities to continuously make improvements.
4. **Promote** the engagement of communities and key stakeholders, including trade partners and business allies, and work with external parties to promote biodiversity value.
5. **Create communications channels** consistent with every stakeholder and channels for whistleblowing or filing complaints related to biodiversity and forest impacts stemming from the company’s business operations. Inspect impacts according to the whistleblowing process and set in place remediating measures while maintaining data confidentiality.
6. **Monitor, report and disseminate information** to the public about impact assessments and performance in biodiversity and forests in order to ensure transparency.

Anti-Deforestation Commitment; Avoid causing impacts on forests and maintain zero deforestation and no conversion of forested areas into operational areas.

Biodiversity Management and Anti-Deforestation Policy



Biodiversity Management and Anti-Deforestation Policy

Bangchak Group recognizes the importance of operating business while paying attention to promoting ecological balance and biodiversity in order to ensure sustainable business operations and that every party has the capability to make use of ecosystems and biodiversity in a fair and equitable manner.

Bangchak Corporation Public Company Limited prepared the “Biodiversity Management and Anti-Deforestation Policy” with firm commitments to the UN Convention on Biological Diversity, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals, the Convention on Wetlands (Ramsar), the World Heritage Convention (WHC) and the International Treaty on Plant Genetic Resources for Food in order to demonstrate its responsibility to and boost business confidence in operating with mindfulness toward biodiversity and forests. Thus, the following objectives and practice guidelines were set:

Biodiversity Management and Anti-Deforestation Objectives

1. Avoid operating business at UNESCO World Heritage sites, Ramsar Convention wetlands and conservation areas designated by the International Union for Conservation of Nature (IUCN).
2. Avoid causing negative impacts on the environment and biodiversity as a result of business activity.
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4. Promote the engagement of communities and key stakeholders, including trade partners and business allies, and work with external parties to promote biodiversity value.
5. Create communications channels consistent with every stakeholder and channels for whistleblowing or filing complaints related to biodiversity and forest impacts stemming from the company’s business operations. Inspect impacts according to the whistleblowing process and set in place remediating measures while maintaining data confidentiality.
6. Monitor, report and disseminate information to the public about impact assessments and performance in biodiversity and forests in order to ensure transparency.

The board of directors, executives, and employees of Bangchak Public Company Limited and affiliated companies must engage and recognize the importance of biodiversity and forests. Executives must conduct themselves as good role models to be followed by employees who must understand and practice in line with set objectives in order to become a model organization for sustainable business growth while creating positive impacts for society and the environment.

Mr. Chaiwat Kovavisarath
Group Chief Executive Officer and President,
Executive Director, Director with Authorized Signature
(15 August 2023)

Reviewed and approval by Sustainability and Corporate Governance Committee (SCGC) on 20 July 2023

Link to Biodiversity Policy :

<https://www.bangchak.co.th/storage/document/biodiversity/2023/biodiversity-management-policy-en.pdf>

1. Biodiversity Management and Anti-Deforestation Commitment

The Biodiversity Management and Anti-Deforestation Policy has received endorsement from the Board of Directors.

It undergoes preliminary approval by the **Sustainability Management Committee (SMC)** acts as a main coordinator to monitor, collect, evaluate and report on progress and performance outcomes to the Sustainability Policy and subsequently by the **Sustainability Policy Committee (SPC)**. The SPC is chaired by Bangchak Group's Chief Executive Officer and President, with executives of business groups and functions working as committee members. The Sustainability Policy Committee is responsible for establishing goals, directions, policies, and strategies for sustainability development within Bangchak Group. The final approval is granted by the **Board of Directors** through the **Sustainability and Corporate Governance Committee (SCGC)** as illustrate in the management structure.

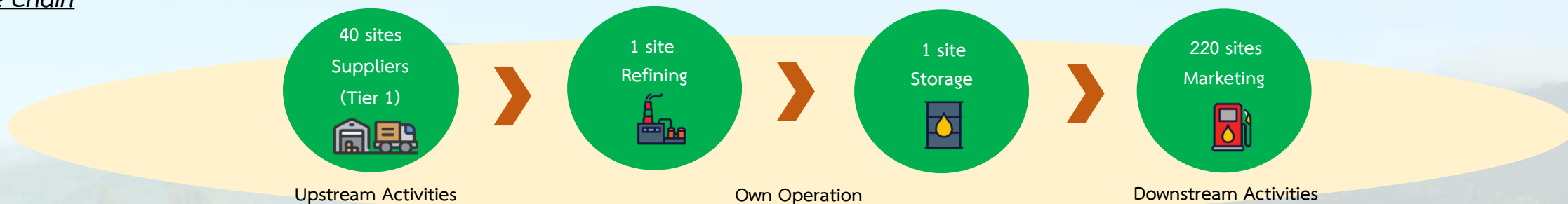
Management Structure



2. Scope of Assessment

In 2024, the Company evaluated biodiversity impacts across its entire value chain at 262 sites. These assessments covered **1 site of the Bangchak Phra Khanong oil refinery and oil depot, 1 site of Bang Pa-in oil depot**, and the risk assessment has been integrated into the risk management process for **220 sites of Company-Owned, Company-Operated (COCO) service stations** which are managed by Bangchak Green Net Co., Ltd. (BGN), a stakeholder of the company. Among these, 7 new sites were assessed this year. **The total area of the Company's own operations, where it conducts its primary activities, is 325.2 hectares.** Additionally, the company has expanded risk assessment to suppliers, **Tier 1 suppliers** have undergone initial biodiversity risk assessments **totaling 40 sites.** The below table is summary of the operation areas that would be included in the assessment.

Value Chain



Type of Business	Number of Sites	Site's Name	Location	Total Areas (Hectares)
Own Operation Sites				
Oil Refinery & Oil Depot	1	Bangchak Phra Khanong Oil Refinery & Oil Depot	Bangkok, Thailand	76.80
Oil Depot	1	Bang Pa-in Depot	Ayutthaya, Thailand	24.96
Value Chain Sites				
Upstream Activities/Suppliers	40	Significant Suppliers (Tier 1)	Thailand	-
Downstream Activities/Service Stations	220 (Data as of 31.12.2023)	COCO service stations	scattered in 6 regions of Thailand (Central, Northern, Southern, North-East, Western and Eastern)	223.44
Total Own Operation Sites	262			325.2

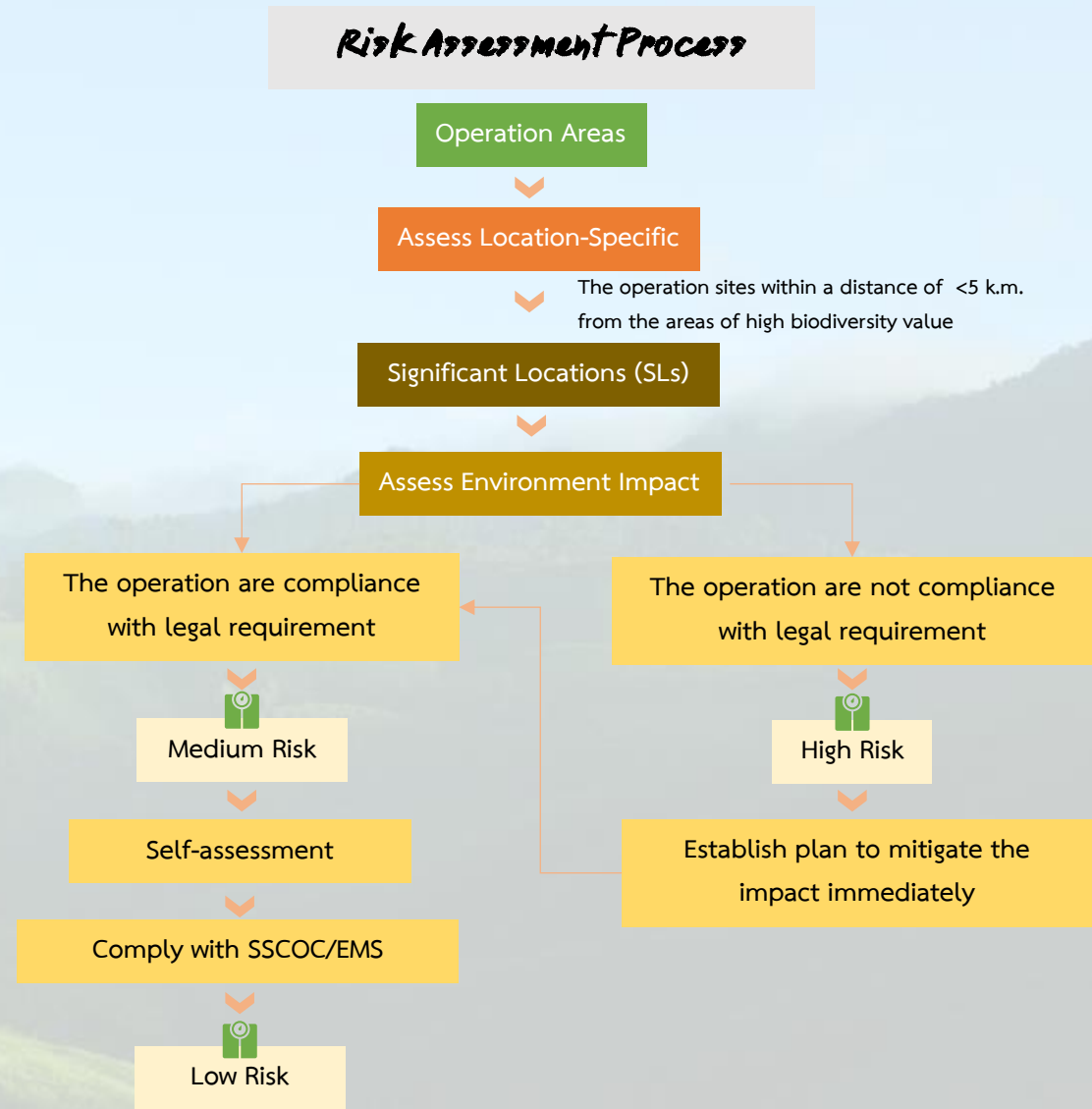
3. Risk Assessment > Location-Specific & Impact

Assessment of the location-specific and impact on biodiversity from business operations

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

After conducting the location-specific assessment, we will identify areas known as Significant Locations (SLs), which are defined as areas located within a radius of 5 kilometers of the areas of high biodiversity value. These SLs will undergo environmental impact assessments based on regulatory compliance criteria. If any SLs does not comply with legal requirements, it will be classified as high risk and must be urgently rectified to meet these legal standards. Once they comply with the regulations, all SLs will be considered medium risk and will require further self-assessment.

For the service station group, we have developed the Service Station Code of Conduct (SSCOC) to provide guidelines for all service stations. They are required to participate in both online self-assessment and onsite audits at a rate of 100% to evaluate any gaps. The company will provide consulting support to address these gaps, with the goal of achieving 100% closure of identified gaps. For refineries and oil depots, we will implement an Environmental Management System (EMS) to ensure compliance. If the SLs meet the specified criteria, they will be classified as low risk.



3. Risk Assessment > The Areas of High Biodiversity Value

Area to Consider

1. The International Union for Conservation of Nature (IUCN). The definition of six management categories are summarized below.

Ia Strict nature reserve	Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values
Ib Wilderness area	Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition
II National park	Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities
III Natural monument or feature	Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove
IV Habitat/species management area	Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category
V Protected landscape or seascape	Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values
VI Protected areas with sustainable use of natural resources	Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims

3. Risk Assessment > The Areas of High Biodiversity Value

Area to Consider

2. **UNESCO World Heritage sites** is a natural or cultural site that demonstrates influence or significance in a global context and has been inscribed on the World Heritage List by the United Nations Educational, Scientific, and Cultural Organization's (UNESCO) World Heritage Committee. In 2023, the World Heritage Committee (WHC) inscribed the "Ancient Town of Si Thep" as the seventh World Heritage site in Thailand, bringing the total number of sites in the country to seven.



1. Thungyai-Huai Kha Khaeng Wildlife Sanctuaries (1991)



2. Dong Phrayayen-Khao Yai Forest Complex (2005)



3. Kaeng Krachan Forest Complex (2021)



7. The Ancient Town of Si Thep and its Associated Dvaravati Monuments (2023)



6. Historic City of Ayutthaya (1991)



4. Historic Town of Sukhothai and Associated Historic Towns (1991)



5. Ban Chiang Archaeological Site (1992)

3. Risk Assessment > The Areas of High Biodiversity Value

Area to Consider

3. Ramsar Convention wetlands. The government of Thailand signed the Ramsar Convention in 1998, promising to work toward wetland conservation. Today, there are 15 Ramsar Sites.

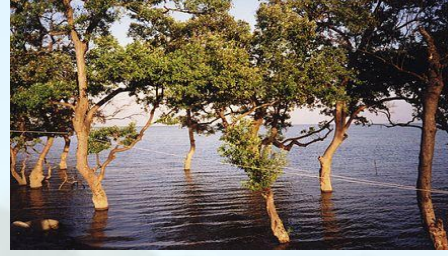
1. Kuan Ki Sian of the Thale Noi Non-Hunting Area



2. Bueng Khong Long Non-hunting Area



3. Don Hoi Lot



4. Krabi River Estuary



5. Nong Bong Kai Non-hunting Area



6. Princess Sirindhorn Wildlife Sanctuary (Pru To Daeng Wildlife Sanctuary)



7. Hat Chao Mai Marine National Park -Ko Libong Non-Hunting Area -Trang River Estuaries



8. Kaper Estuary - Laem Son National Park - Kraburi Estuary



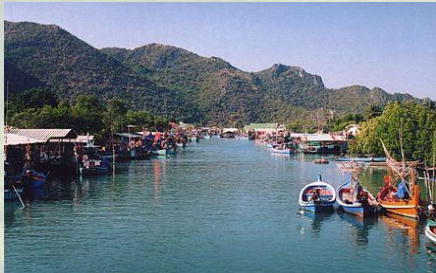
9. Mu Ko Ang Thong Marine National Park



10. Ao Phang Nga National Park



11. Khao Sam Roi Yot National Park



12. Kut Ting Marshland



13. Ko Kra Archipelago



14. Ko Ra-Ko Phra Thong Archipelago

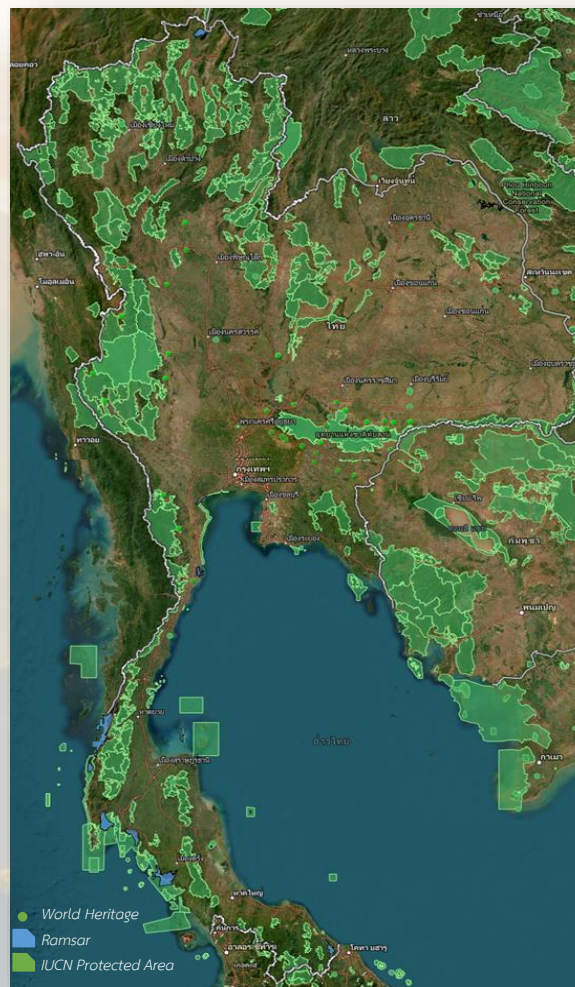


15. Lower Songkhram River

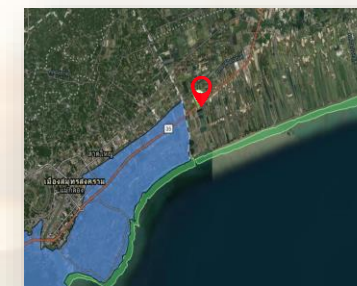


3. Assessment Result > Location-Specific & Impact

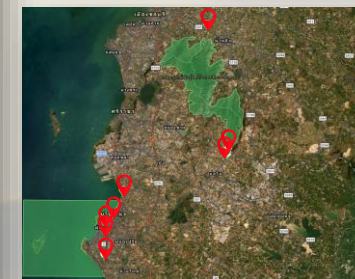
The assessment results regarding the distance between the business's own operational areas and adjacent areas with the areas of high biodiversity value within a radius of less than 5 kilometers revealed that 19 service stations (38.11 hectares) are located within this distance. This includes service stations in Central region comprising 1 service stations in Samut Sakhon provinces with 2.09 hectares total area, Eastern region comprising 8 service stations in Chonburi province with 18.43 hectares total area, Western region comprising 1 service station in Prachuap Khiri Khan province with 3.37 hectares total area, Northern region comprising 5 service stations in Chiang Mai province with 5.99 hectares total area, Southern region comprising 4 service stations in Krabi, and Phuket provinces with 8.23 hectares total area as shown on the map. These are considered Significant Locations (SLs) that will undergo further assessment to evaluate Environmental Impact. The results of environmental Impact assessment showed that all 19 SLs are comply with legal requirements. Consequently, they shall participate in the self-assessment according to the SSCOC criteria. The results indicated that all 19 SLs also comply with the SSCOC, thus classifying them as low risk for creating severe impacts on biodiversity; hence, further monitoring and surveillance will continue.



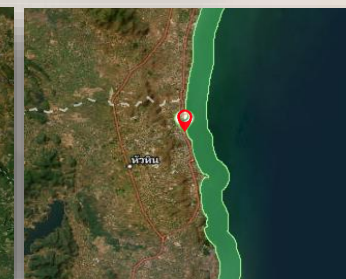
The map illustrated the location of IUCN protected area , UNESCO World Heritage sites and Ramsar Convention wetlands in Thailand.



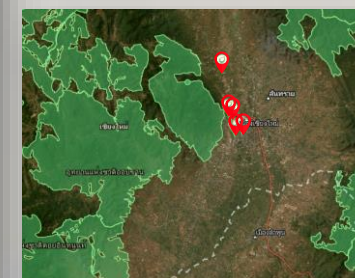
Central Region



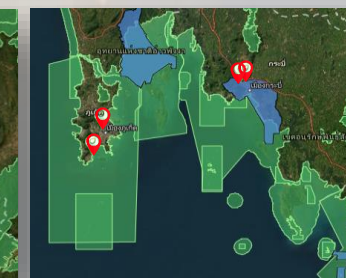
Eastern Region



Western Region



Northern Region



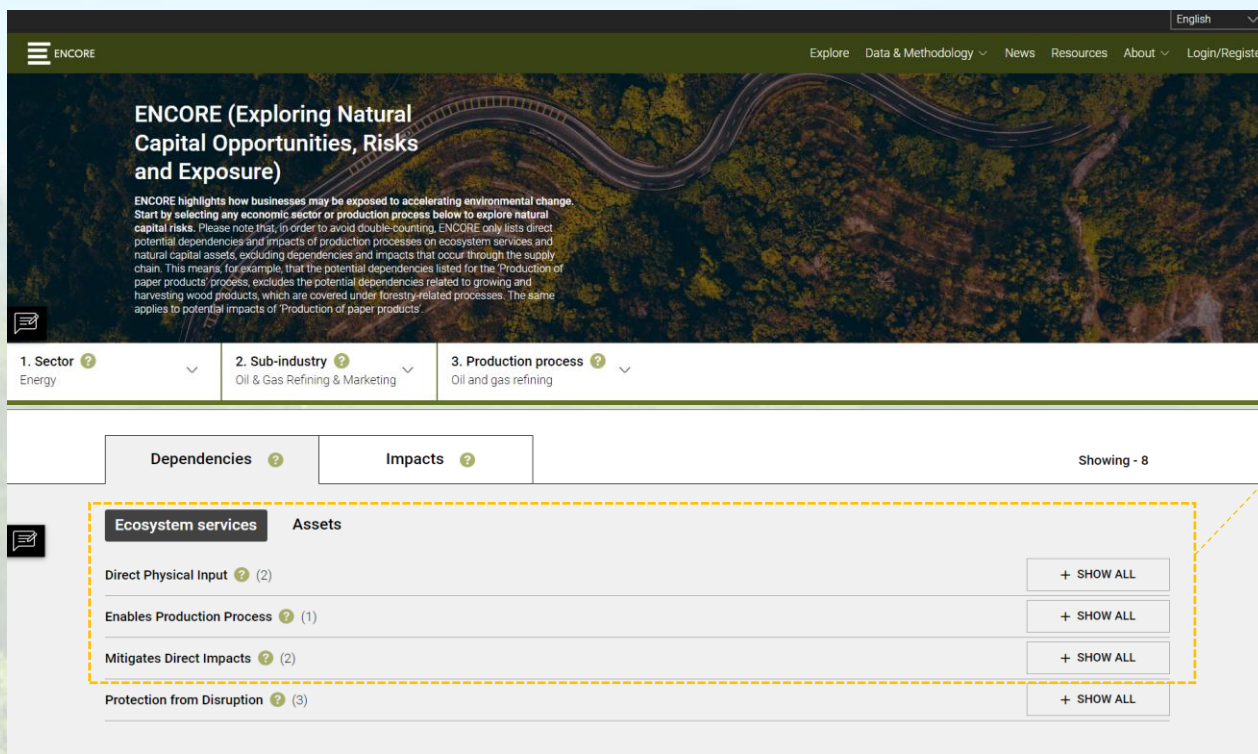
Southern Region

4. Risk Assessment ➤ Dependencies

Assessment of dependencies on nature in business operations

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

Business Dependencies exploring by Encore



ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure)

ENCORE highlights how businesses may be exposed to accelerating environmental change. Start by selecting any economic sector or production process below to explore natural capital risks. Please note that, in order to avoid double-counting, ENCORE only lists direct potential dependencies and impacts of production processes on ecosystem services and natural capital assets, excluding dependencies and impacts that occur through the supply chain. This means, for example, that the potential dependencies listed for the 'Production of paper products' process, excludes the potential dependencies related to growing and harvesting wood products, which are covered under forestry-related processes. The same applies to potential impacts of 'Production of paper products'.

1. Sector [?] Energy

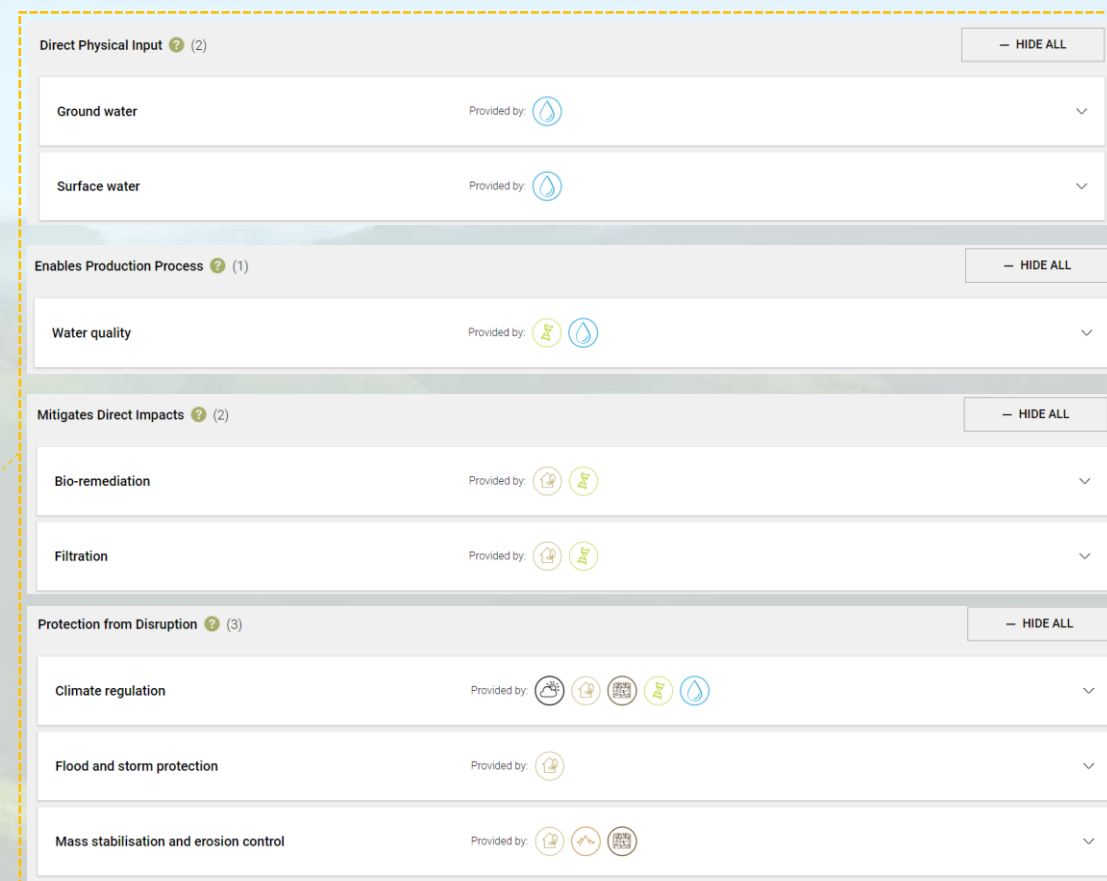
2. Sub-industry [?] Oil & Gas Refining & Marketing

3. Production process [?] Oil and gas refining



Dependencies [?] Impacts [?] Showing - 8

Ecosystem services Assets



- Direct Physical Input [?] (2) + SHOW ALL
- Enables Production Process [?] (1) + SHOW ALL
- Mitigates Direct Impacts [?] (2) + SHOW ALL
- Protection from Disruption [?] (3) + SHOW ALL







Direct Physical Input [?] (2) — HIDE ALL

- Ground water Provided by: 
- Surface water Provided by: 










Enables Production Process [?] (1) — HIDE ALL

- Water quality Provided by:  

Mitigates Direct Impacts [?] (2) — HIDE ALL

- Bio-remediation Provided by:  
- Filtration Provided by:  

Protection from Disruption [?] (3) — HIDE ALL

- Climate regulation Provided by:     
- Flood and storm protection Provided by: 
- Mass stabilisation and erosion control Provided by:   

See the definition of each parameter by click link ; <https://encore.naturalcapital.finance/en/explore>

4. Assessment Result ➤ Dependencies

The assessment results of the dependencies on nature in business operations found that the refining and marketing sub-industry within the energy sector, ENCORE identifies bioremediation, filtration, and climate regulation as having a very low materiality rating. Groundwater, surface water, water quality, and mass stabilization and erosion control are assigned a low materiality rating, while flood and storm protection receive a medium materiality rating. Within the oil depot context, using data from the oil and gas storage and transportation sub-industry, ENCORE rates climate regulation and mass stabilization and erosion as having very low and low materiality ratings, respectively. However, flood and storm protection are assigned a medium materiality rating. Hence, the business operations rely on nature to protect against floods and storms. The Company prepares a crisis management plan for the case of acute flooding and closely monitors the flood situation and water levels in the operating area.

Table 1 : Materiality Rating of Dependencies of Oil Refining & Marketing

No.	Ecosystem services	Rating
1.	Direct Physical Input	
	Groundwater	Low materiality rating
	Surface water	Low materiality rating
2.	Enables Production Process	
	Water Quality	Low materiality rating
3.	Mitigates Direct Impacts	
	Bio-remediation	Very low materiality rating
	Filtration	Very low materiality rating
4.	Protection from Disruption	
	Climate Regulation	Very low materiality rating
	Flood and Storm protection	Medium materiality rating
	Mass stabilization and erosion control	Low materiality rating

Table 2 : Materiality Rating of Dependencies of Oil Storage

No.	Ecosystem services	Rating
1.	Protection from Disruption	
	Climate Regulation	Very low materiality rating
	Flood and Storm protection	Medium materiality rating
	Mass stabilization and erosion control	Low materiality rating

5. Risk Assessment > Suppliers

Assessment of Suppliers on Biodiversity

Supplier Code of Conduct (SCOC)

Bangchak Corporation Public Company Limited has been managing its supply chain sustainability from upstream to downstream, incorporating the principles of the UN Global Compact framework to guide its operations with partners and considering sustainable business practices in terms of the Environmental, Social, and Governance (ESG) aspects. Every new registered supplier must adhere to the SCOC, and continuous adherence to ethical business practices is emphasized with the goal to integrate procurement processes into the Company's business strategy, aligning with international standards for sustainable procurement to mitigate business disruptions and delays caused by unforeseen circumstances. One aspect in SCOC which related to the Biodiversity is **4.2 Efficient resource allocation and environmental-friendly management.**

The company collaborated with suppliers to conduct an initial biodiversity assessment through the Suppliers Code of Conduct Assessment, focusing on significant suppliers by evaluating risks on their operational areas and adjacent areas surrounding their operation areas within a radius of 5 kilometers. The initial phase of the biodiversity assessment aims to enhance the company's understanding of biodiversity practices among its suppliers. This effort is crucial for advocating and advancing future biodiversity project initiatives.



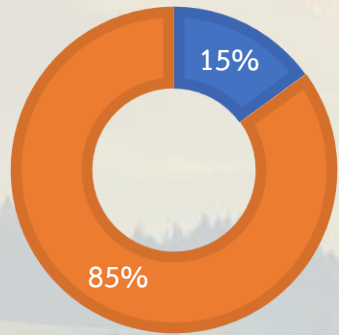
Please see BCP's SCOC for more detail : <https://www.bangchak.co.th/storage/document/sustainability/2023/bcp-supplier-code-conduct-en.pdf>

5. Assessment Result ➤ Suppliers

The assessment of suppliers on biodiversity revealed that in the initial phase through the Suppliers Code of Conduct, The results was pointed out that

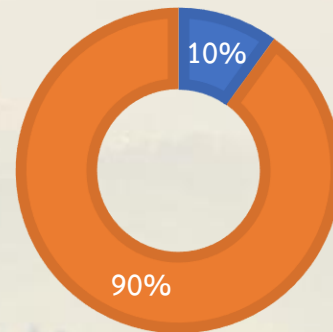
- 15% of the suppliers are aware of the importance of biodiversity as one of the factors that may affect their business.
- 10% of the suppliers have conducted a risk assessment related to biodiversity.
- 10% of the suppliers have assessed the impact of their activities on biodiversity.
- 12.5% of the suppliers have activities or projects related to biodiversity.

Awareness on biodiversity



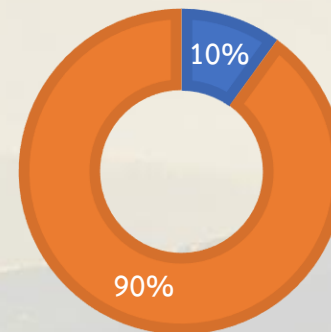
■ Yes ■ N/A

Conduct risk assessment related to biodiversity



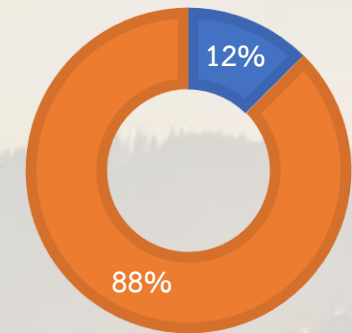
■ Yes ■ N/A

Assess the impact on biodiversity



■ Yes ■ N/A

Activities/projects related to biodiversity



■ Yes ■ N/A

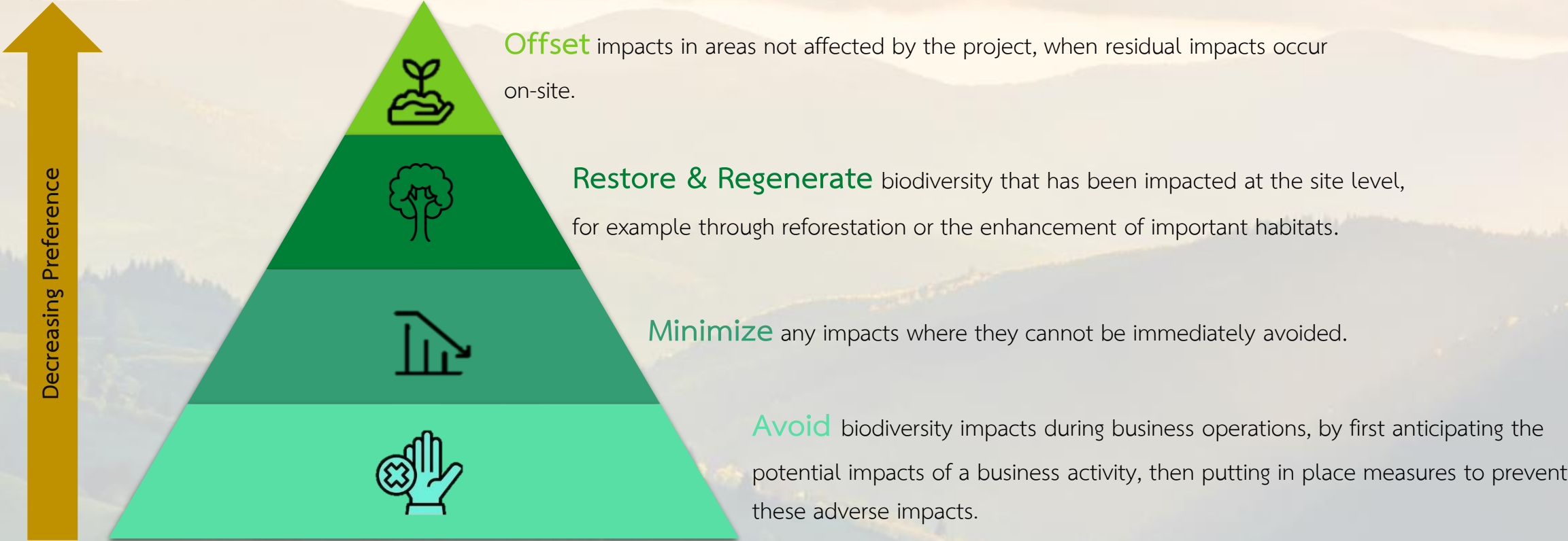
Strategy Respond to Support Our Suppliers :

Based on the results, it was found that most of the suppliers have not yet implemented operations with awareness or understanding of the risk, impact and contribution to biodiversity conservation. The company plans to support and promote biodiversity efforts among suppliers through the initiatives :

Training and Knowledge Dissemination on Biodiversity : Provide training programs focused on developing skills and enhancing understanding of the importance of biodiversity, risk assessment, and the potential impacts of activities, as well as activities to support biodiversity. These workshops should emphasize practical solutions to biodiversity-related challenges specific to their localities. These measures aim to increase supplier awareness and encourage actions that benefit the environment and local communities in the long term.

6. Mitigation Action & Tracking

Mitigation action - the management plan are relied on the mitigation hierarchy that mention in the Integrating Biodiversity into Natural Capital Assessments framework. The mitigation hierarchy consist of 4 stages compromising a sequence of actions, in order of priority, to anticipate and mitigate impacts on biodiversity



Tracking - Monitor and report the results of operations, and identify opportunities for continuous improvement and development.

Mitigating Actions and Tracking (Cont.)



The screening own operation areas and adjacent areas with location-related risks, it was found that 19 out of 222 sites are situated near areas of high biodiversity value within a 5-kilometer radius. However, upon further consideration of environmental impacts, it was found that all 19 sites have a low risk of causing significant harm to biodiversity. Nevertheless, the company still maintains continuous monitoring and surveillance to avoid or minimize impacts on biodiversity in the area. (see Table 7). Additionally, there are medium risk related to dependency of flood and storm protection. The company also has the mitigation action as shown in Table 6.

Table 6 : Mitigation Action to Minimize the Dependency of Flood and Storm protection

Risk	Mitigating Action		Results Tracking	
Dependency/ Flood and Storm protection	Minimize	Bangchak Phra Khanong Oil Refinery & Oil Depot	<ul style="list-style-type: none"> • Monitor flood situation and the sea water level at pier front. Bangkok metropolitan flood • Protection could support equivalent to 2.23 m water level above the sea. • Empty the rainwater drainage. • Installed flood prevention equipment • Basic design of the dam for flood refinery area • Business Continuity Management Plan (BCM) • Crisis Management Plan (CMP) 	<ul style="list-style-type: none"> • Based on data collected over the past 5 years, the oil refinery area has never had to halt operations due to flooding.
		Bang Pa-In Oil Depots	<ul style="list-style-type: none"> • Closely monitor the flood situation and cooperate with the transportation team to prepare the adjusted transportation plan. • Regularly inspecting the readiness of protection equipment and the barrier dike (5.5 m high) around the depot. • Business Continuity Management Plan (BCM) • Crisis Management Plan (CMP)/ BPT 507 	<ul style="list-style-type: none"> • Based on data collected over the past 5 years, the oil depot area has never had to halt operations due to flooding.
		Service Stations	<ul style="list-style-type: none"> • Selected and designed service stations for flood prevention. • Monitor flood situation in high potential hazard area • Prepare the protection equipment • In case of flooding, protect the important equipment according to the measure and do the oil quality check before returning to normal operation. 	<ul style="list-style-type: none"> • Based on data collected over the past 5 years, the service station area has never had to halt operations due to flooding.

Mitigating Actions and Tracking (Cont.)

Table 7 : Mitigation Action to Avoid and Minimize the Impact from Pollutions

Risk	Mitigating Action		Results Tracking						
Pollutions	Avoid	<table border="1"> <tr> <td data-bbox="438 349 749 496">Bangchak Phra Khanong Oil Refinery & Oil Depot</td> <td data-bbox="749 349 1979 496"> <ul style="list-style-type: none"> The Safety, Security, Occupational Health, Environment, and Energy Policy, SHEE Policy Environmental Impact Assessment ISO14001, ISO45001, ISO50001 </td> </tr> <tr> <td data-bbox="438 496 749 608">Bang Pa-In Oil Depots</td> <td data-bbox="749 496 1979 608"> <ul style="list-style-type: none"> The Safety, Security, Occupational Health, Environment, and Energy Policy, SHEE Policy ISO14001, ISO45001, ISO50001 </td> </tr> <tr> <td data-bbox="438 608 749 795">Service Stations</td> <td data-bbox="749 608 1979 795"> <ul style="list-style-type: none"> Safety, Security, Occupational Health, Environment, and Energy Policy of Marketing Business Group, SHEE-MK policy The Announcement of the Ministry of Natural Resources and Environment on the Standard for Controlling the Discharge of Wastewater controlled by the Pollution Control Department </td> </tr> </table>	Bangchak Phra Khanong Oil Refinery & Oil Depot	<ul style="list-style-type: none"> The Safety, Security, Occupational Health, Environment, and Energy Policy, SHEE Policy Environmental Impact Assessment ISO14001, ISO45001, ISO50001 	Bang Pa-In Oil Depots	<ul style="list-style-type: none"> The Safety, Security, Occupational Health, Environment, and Energy Policy, SHEE Policy ISO14001, ISO45001, ISO50001 	Service Stations	<ul style="list-style-type: none"> Safety, Security, Occupational Health, Environment, and Energy Policy of Marketing Business Group, SHEE-MK policy The Announcement of the Ministry of Natural Resources and Environment on the Standard for Controlling the Discharge of Wastewater controlled by the Pollution Control Department 	<ul style="list-style-type: none"> Complying with the legal requirements <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>SHEE Policy</p> </div> <div style="text-align: center;">  <p>SHEE-MK Policy</p> </div> </div>
	Bangchak Phra Khanong Oil Refinery & Oil Depot	<ul style="list-style-type: none"> The Safety, Security, Occupational Health, Environment, and Energy Policy, SHEE Policy Environmental Impact Assessment ISO14001, ISO45001, ISO50001 							
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Minimize	<table border="1"> <tr> <td data-bbox="438 806 749 936">Bangchak Phra Khanong Oil Refinery & Oil Depot</td> <td data-bbox="749 806 1979 1342"> <p>Water – Install Wastewater Treatment Unit and Water Recycle Unit to treat the wastewater from refinery systems, production process, laboratory and rest room</p> <ul style="list-style-type: none"> – Establish COD Online for real-time monitoring and sending results to Department of Industrial Works and communities around the refinery <p>Air – Use clean fuel in all production process</p> <ul style="list-style-type: none"> – The Vapor recovery unit (VRU) technology with up to 99% effectiveness has been installed to reduce VOCs – Monitors air quality through 7 Continuous Emission Monitoring System (CEMs) units. This system sends real-time data to Department of Industrial Works <p>Waste – Manage waste according to the 3Rs principle to minimize the quantity of waste sent for disposal</p> <ul style="list-style-type: none"> – Operate business according to circular economy to focus on making worthwhile use of resources, raw materials and products, and green economy </td> </tr> </table>	Bangchak Phra Khanong Oil Refinery & Oil Depot	<p>Water – Install Wastewater Treatment Unit and Water Recycle Unit to treat the wastewater from refinery systems, production process, laboratory and rest room</p> <ul style="list-style-type: none"> – Establish COD Online for real-time monitoring and sending results to Department of Industrial Works and communities around the refinery <p>Air – Use clean fuel in all production process</p> <ul style="list-style-type: none"> – The Vapor recovery unit (VRU) technology with up to 99% effectiveness has been installed to reduce VOCs – Monitors air quality through 7 Continuous Emission Monitoring System (CEMs) units. This system sends real-time data to Department of Industrial Works <p>Waste – Manage waste according to the 3Rs principle to minimize the quantity of waste sent for disposal</p> <ul style="list-style-type: none"> – Operate business according to circular economy to focus on making worthwhile use of resources, raw materials and products, and green economy 	<ul style="list-style-type: none"> Zero complaint about pollution from community The results in EIA monitoring report are within acceptable standards 					
Bangchak Phra Khanong Oil Refinery & Oil Depot	<p>Water – Install Wastewater Treatment Unit and Water Recycle Unit to treat the wastewater from refinery systems, production process, laboratory and rest room</p> <ul style="list-style-type: none"> – Establish COD Online for real-time monitoring and sending results to Department of Industrial Works and communities around the refinery <p>Air – Use clean fuel in all production process</p> <ul style="list-style-type: none"> – The Vapor recovery unit (VRU) technology with up to 99% effectiveness has been installed to reduce VOCs – Monitors air quality through 7 Continuous Emission Monitoring System (CEMs) units. This system sends real-time data to Department of Industrial Works <p>Waste – Manage waste according to the 3Rs principle to minimize the quantity of waste sent for disposal</p> <ul style="list-style-type: none"> – Operate business according to circular economy to focus on making worthwhile use of resources, raw materials and products, and green economy 								

Mitigating Actions and Tracking (Cont.)

Table 7 : Mitigation Action to Avoid and Minimize the Impact from Pollutions (Cont.)

Risk	Mitigating Action		Results Tracking
Pollutions	Minimize	Bang Pa-In Oil Depots	<ul style="list-style-type: none"> Zero complaint about pollution from community
		Service Stations	<ul style="list-style-type: none"> Zero complaint about pollution from community

Mitigating Actions and Tracking (Cont.)

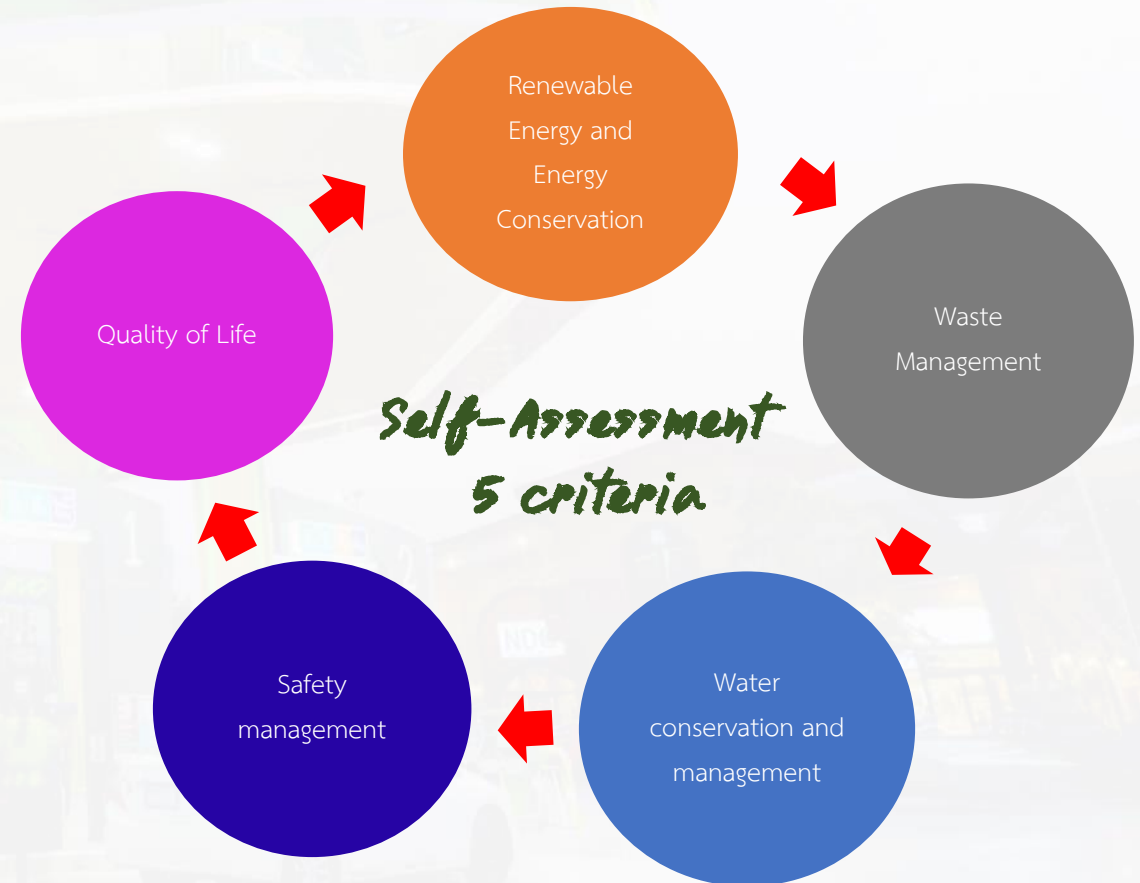
Service Station Code of Conduct (SSCOC)

The company has established guidelines for service stations to conduct self-assessments in terms of efficiently and innovated in ESG based on the following five criteria:

1. Renewable energy and energy conservation
2. Waste management
3. Water conservation and management
4. Safety management
5. Quality of life

The criteria for the SSCOC self-assessment align with the INNO Green service station criteria, a collaborative project between Bangchak and the Thailand Environmental Institute (TEI), aimed at developing standards for Greenovative Stations to promote service stations as environmental prototypes.

These criteria will be used for the self-assessment of service stations classified as Significant Locations (SLs).



Mitigating Actions and Tracking (Cont.)

Target:

All service stations have achieved platinum-level certification, which is the highest level.



Rating for SSCOC self-assessment:

Service stations that meet the audit criteria according to SSCOC self-assessment will be ranked based on scores, which are divided into the following categories:

Level	Scores
Platinum	80.00% or above
Gold	70.00-79.99%
Silver	60.00-69.99%

2023 Performance:

- The company conducted the SSCOC self-assessment for service stations that are classified as Significant Locations (SLs). All SLs must first comply with the legal requirements before they can proceed to the SSCOC self-assessment, which includes criteria that exceed the legal standards.
- Based on the results of the 2023 risk assessment, there are **18 service stations** that participated in the self-assessment.
- The self-assessment results of all 18 service stations revealed that there are 5 service stations that achieved a silver level, 8 service stations that achieved a gold level, and 5 service stations that achieved a platinum level.
- The company aims to encourage service stations that have received a silver or gold level to close the gaps and improve their scores to achieve a platinum level by providing support to address the gaps, with the goal of achieving 100% closure of identified gaps



Biodiversity Supporting Projects in Own Operation Area

The company support the projects to restore and regenerate of biodiversity and ecosystem in own operation area as following:

Green Areas and Birdwatching Activities at Bangchak Phra Khanong refinery

The company has prioritized the conservation of green spaces and implemented tree planting projects to preserve biodiversity within the operating areas. Dead trees are promptly replaced with new plantings, and additional planting initiatives are undertaken in suitable areas. The variety of areas within the refinery includes large gardens, marshes, trees, and flowers. The air quality is continuously monitored and reported transparently, meeting acceptable standards. As a result, Bangchak Phra Khanong Refinery and Oil Depot has become another safe area for birds including both resident and migratory. The refinery area is not only used for business operations, but also serves as a small ecosystem that still embraces the people involved as well as small living organisms. Like the birds that take shelter, so the refinery is known as a place for great birdwatching in the heart of the city. The birdwatching activity is related to surveying the number of bird within the refinery premises, which serves as one of biodiversity index in the area. The company has a plan to conduct annual bird surveys to monitor changes in biodiversity. Simultaneously, it raises awareness about environmental conservation among both employees and the surrounding community.



Green Areas and Birdwatching Activities at Bangchak Phra Khanong refinery

Results Tracking :

- Maintaining the size of the green area within the project site at approximately 72.21 rai, or about 15.63% of the total project area of around 462 rai, involves the cultivation of various tree species. This ensures the preservation of biodiversity and contributes to the ecological balance of the area.
- According to the survey of bird species and population within the operational area on Jan 2024, a total of 42 bird species were identified, comprising more than 336 individuals, including both resident and migratory birds as the lists below.

The bird species found at Bangchak Oil Refinery in Phra Khanong		
<i>Little Cormorant</i>	<i>Yellow-vented Bulbul</i>	<i>Brown-throated Sunbird</i>
<i>Chinese Pond-Heron</i>	<i>Streak-eared Bulbul</i>	<i>Olive-backed Sunbird</i>
<i>Little Egret</i>	<i>Ashy Drongo</i>	<i>Scarlet-Backed Flowerpecker</i>
<i>Little Heron</i>	<i>Black-naped Oriole</i>	<i>Eurasian Tree-Sparrow</i>
<i>Asian Openbill</i>	<i>Large-billed Crow</i>	<i>House Sparrow</i>
<i>Peregrine Falcon</i>	<i>Arctic Warbler</i>	<i>Scaly-breasted Munia</i>
<i>Pink-necked Pigeon</i>	<i>Inornate Warbler</i>	<i>Blue Rock-Thrush</i>
<i>Rock Pigeon</i>	<i>Plain Prinia</i>	<i>Vinous-breasted Starling</i>
<i>Red Turtle-Dove</i>	<i>Common Tailorbird</i>	<i>Common Myna</i>
<i>Spotted Dove</i>	<i>Oriental Magpie-Robin</i>	<i>White-vented Myna</i>
<i>Zebra Dove</i>	<i>Asian Brown Flycatcher</i>	<i>Asian Palm-Swift</i>
<i>Common Koel</i>	<i>Red-throated Flycatcher</i>	<i>Common Iora</i>
<i>Blue-tailed Bee-eater</i>	<i>Pied Fantail</i>	<i>Black-collared Starling</i>
<i>Indian Roller</i>	<i>Brown Shrike</i>	<i>Coppersmith Barbet</i>

Listed in Red List Category

- Red List Category :** it was found that out of 42 species, 37 species are listed in the Red List and categorized as "least concern".

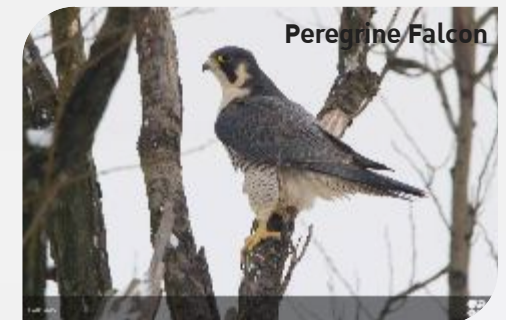
37
Species



Least Concern (LC)

A taxon is **Least Concern (LC)** when it has been evaluated against the Red List criteria and does not qualify for **Critically Endangered, Endangered, Vulnerable** or **Near Threatened**.

Species categorized as Least Concern (LC)



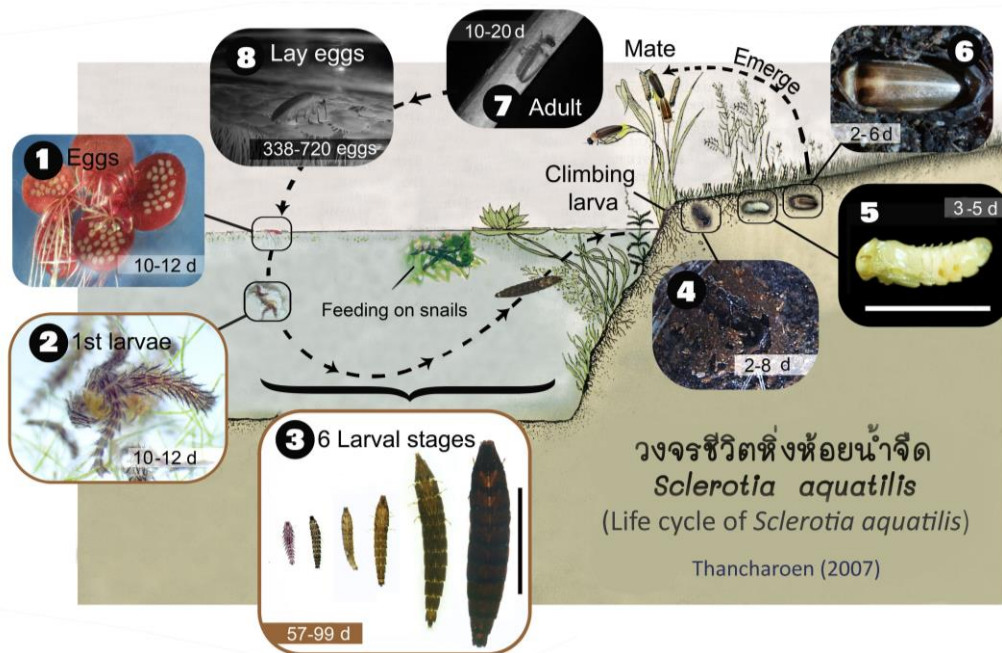
Source: <https://www.iucnredlist.org/>

Biodiversity Supporting Projects in Adjacent Areas of Bangchak Phra Khanong refinery

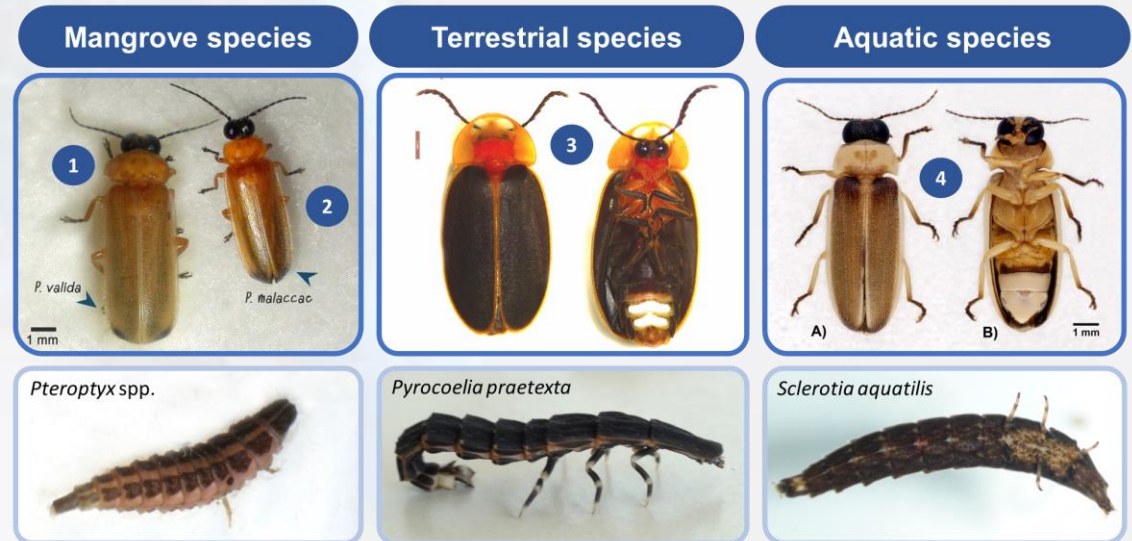
The company support the projects to restore and regenerate of biodiversity and ecosystem in adjacent area and external company boundary as following:

The Path of Fireflies Conservation Project at Kung Bang Ka Chao

The company works to support, promote, develop and care for biodiversity in collaboration with communities and neighbors around refinery areas in 6 sub-districts in the Khung Bang Ka Chao area, namely, Bang Nam Phueng Sub-district, Bang Ka Chao Sub-district, Bang Krasop Sub-district, Bang Yo Sub-district and Song Khanong Sub-district, Phra Pra Daeng District, Samut Prakan Province, and has been doing so from 2014 up to the present. The life cycle of firefly, their species, the factors affecting the firefly population and explore the firefly population are studied in this project. This area is an abundant area with a high level of biodiversity, and the company prioritizes taking care of the firefly population in the area, which currently is unstable and increases and decreases according to the environment.



Firefly species in Bang Kachao area



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The Path of Fireflies Conservation Project at Kung Bang Ka Chao

Results Tracking :

- Four different types of fireflies were discovered in the area as follows:
 - 1) *Sclerotia quailis* (Thancharoen)
 - 2) *Pyrocoelia* sp.
 - 3) *Pteroptyx malacca* (Gorham)
 - 4) *Pteroptyx valida* (Olivier).
- The average firefly population was 50,526 fireflies/year
- Firefly survey/counting teams numbering 60 people along with 78 youths participating in activities from 6 sub-districts.
- The main threats to firefly population ; land conversion, aquatic plant removal, anti mosquito spray, embankment construction, water gate construction and light and water pollution.
- Organize projects activities:
 - Support for continuous landscape improvement
 - Training in conservation knowledge, junior guides
 - Lamphu forest planting activities; creating walkways, bridges, embankments
 - Media and public announcement for World Firefly Day; academic seminar “A Gathering of Firefly Lovers”

The main threats to firefly populations



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

The company supported, promoted, developed and supervised the raising of stingless bees on the basis of environmental conservation and biodiversity in conjunction with promoting the community economy in a participatory manner. Accordingly, the company operated the project in collaboration with large-plot farmers raising stingless bees and farmer groups involved in the raising of stingless bees at Bang Nam Phueng Sub-district, Phra Pra Daeng District, Samut Sakhon Province. The project has been ongoing since 2019 and continues to be operated today. Stingless bees are indicators of environmental abundance and biodiversity in the local area and also benefit the community economy.

Results Tracking :

- The natural population of stingless bees in the area (estimated) is >1,000 bees, while the and farmed stingless bees numbering >350,000 bees.
- 600 bee hives being cultivated
- Number of flowers and fruit that serve as food sources for the bees ≥ 12 types, such as coconut, xanthostemon chrysanthus, banana, mango, lime, langsat, orange, etc. (research from samples of stingless bee honey by KMUTNB, Rayong Campus) The productivity has improved, and some areas have trees/plants that have never fruited before, such as kaffir lime, bilimbi, etc
- Products from stingless bee honey and others, totaling 8 types: 1. Honey 2. Soap (bar) 3. Premium soap (bar) 4. Shower cream 5. Shampoo 6. Lotion 7. Balm 8. Mosquito spray (herbal)



Our Khung Bang Ka Chao Project

The company became a member in support of the Our Khung Bang Ka Chao Project of the Chaipattana Foundation in collaboration with other public and private agencies numbering over 34 organizations to jointly drive development in the Khung Bang Ka Chao area to build upon the speech and royal wish of His Late Majesty the King Bhumibol Adulyadej and Her Royal Highness Princess Maha Chakri Sirindhorn and the operating guidelines of the Chaipattana Foundation to conserve and develop Khung Bang Ka Chao into an abundant green space and to improve the way of life and well-being and economic growth of the local people. Under 7 shared objectives, the company participated as a work committee to support work in 3 areas/shared objectives, namely, development/expansion of green spaces, sustainable tourism and development of youths, education and culture.

Results Tracking :

- Plant forests/trees for a total of 1,570 trees in an area of 19.71 rai, 11 plots (100%), by planting native tree species mixed with other suitable species, such as Lamphu, Kong Kang, Kluk, Ruang Phung, Takhian, Payom, Thong Lang, Makhamong, etc
- Organize activities for executives and employees to plant trees for four times in 2024, with 435 participating executives and employees



Punsook Urban Greenery Project

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



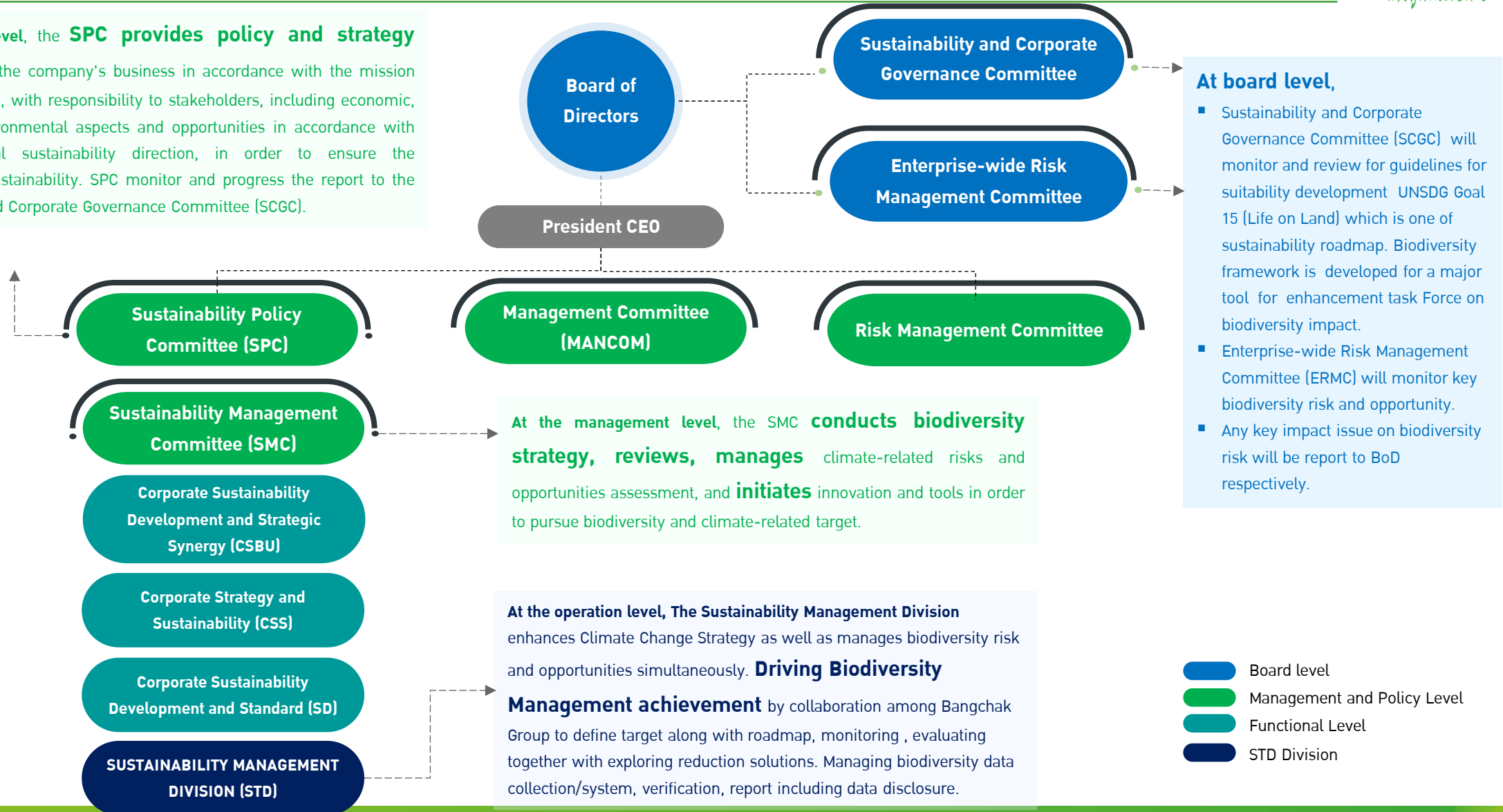
Results Tracking :

- Enhance green areas through the planting of trees in the vicinity of the Company’s operating area, Bangchak oil refinery, Phra Khanong District, and Bang Na District, totaling 15,550 trees. The tree species planted were selected for their suitability, in cooperation with the Phra Khanong District Office and Bang Na District Office. Example species include Ratchaphruek, Champi, Ruang Phung, Thong Urai, Cha Hok Kian, Kem, etc
- Enhance green areas through the planting of trees in the Company’s community relations operating area, Khung Bang Kachao area, Bang Nam Phueng Sub-district, Phra Pradaeng District, Samut Prakan Province, totaling 900 trees. The tree species planted were native species mixed with other species suitable for planting in the area, such as Pilangkasat, Kamphu, Yang Na, etc

Appendix

Governance

At the policy level, the **SPC provides 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 and opportunities in accordance with the international sustainability direction, in order to ensure the organization's sustainability. SPC monitor and progress the report to the Sustainability and Corporate Governance Committee (SCGC).



Board's Oversight of Biodiversity & Climate-related Risk and Opportunities

Body	Roles and Responsibilities	Meeting Frequency
Sustainability and Corporate Governance Committee (SCGC)	<ol style="list-style-type: none"> Propose corporate governance and sustainability development practices, including biodiversity and 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 biodiversity and climate change guideline. Perform duties as assigned by the Board of Directors. 	Twice per year at minimum
Enterprise-wide Risk Management Committee (ERMC)	<ol style="list-style-type: none"> Propose policy, strategy and goals for risk management including biodiversity and 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. 	Quarterly

Governance

Management's role in assessing and managing biodiversity & climate-related risks and opportunities

Body	Roles and Responsibilities	Meeting Frequency
Sustainability Policy Committee (SPC)	<ol style="list-style-type: none"> 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 biodiversity, 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 Carbon Neutrality by 2030 and Net Zero GHG emission by 2050 has been defined. Progress the report to the Sustainability and Corporate Governance Committee (SCGC) 	Minimum half year
Sustainability Management Committee (SMC)	<ol style="list-style-type: none"> 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 Carbon Neutrality in 2030 and Net Zero in 2050 Prepare biodiversity, climate strategy and manage opportunities and risks arising from biodiversity and climate change. Encourage work processes and development plans or events to increase awareness, knowledge, and understanding of sustainability including biodiversity, 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 and Corporate Governance Committee (SCGC) 	Minimum half year

Risk Management: Process

Business Environment

:: MANCOM Meeting ::

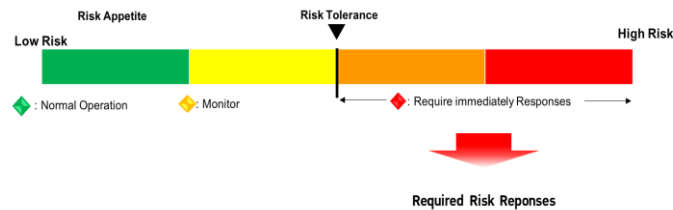


Strategy: Assumption, Scenario and Budgeting

:: SSS / MANCOM and BoD Meeting ::

KRI Monitoring

:: ERMC Meeting (Quarterly) ::

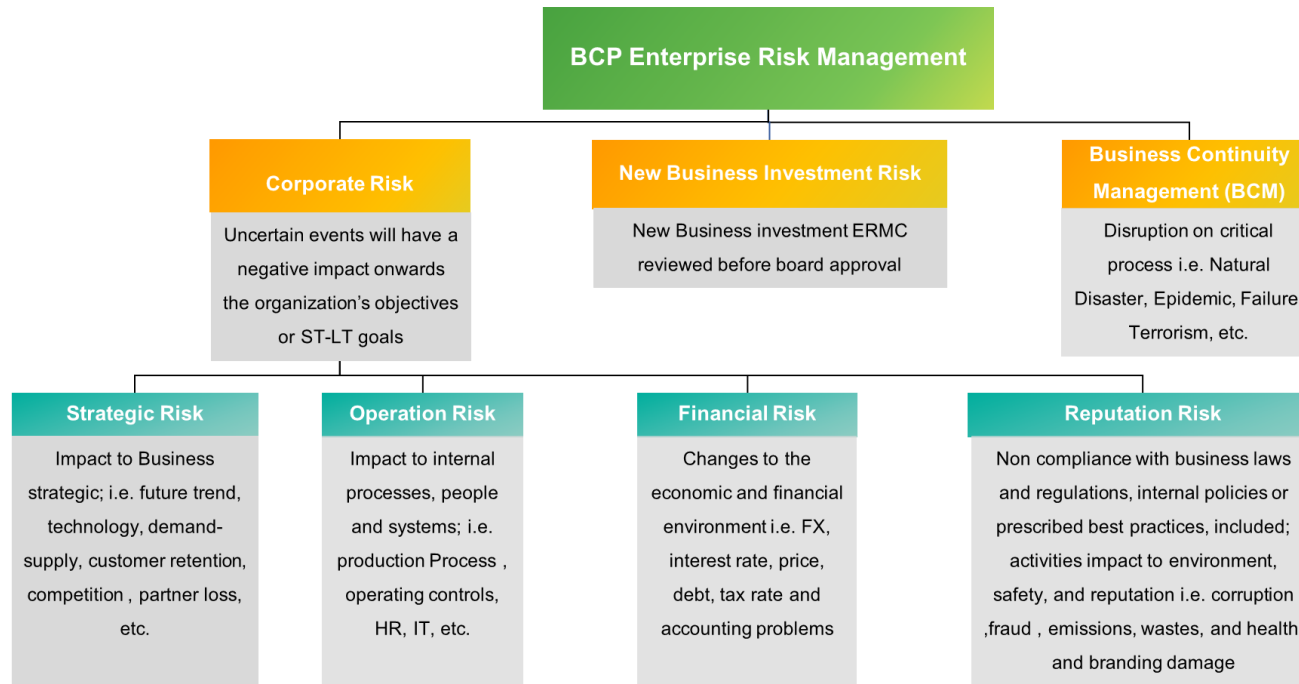


- Used to track the direction of the risk whether the trend has increase or decrease
- Be a warning sign that leads to improvements maintain track of situation
- To follow up on risk management results, whether they are on target or not to have further efficiency improvement

Corporate Risk & KPIs

:: RMC / MANCOM / ERMC and BoD Meeting ::

Risk Management: Enterprise Risk Management Policy



- Executives and all employees of the Company are required to manage risk matters by taking an active role and participating in the development of corporate risk management, as well as fully developing an understanding of their responsibilities.
- An effective risk management process must be established at all business stages with regard to the good corporate governance policy and be integrated with the IT management for superior management, with the goals to lower the probability of risk occurrence and their downside impact, mitigate the uncertainties of overall performance, and enhance the chance of success.
- The Company supports the implementation of risk management to achieve success in all parts, utilizing the limited resources to identify, assess and appropriately manage risks.
- The Company encourages and drives risk management to be a part of our corporate culture and be valued by all employees.
- Executives and employees of all levels, including affiliated companies, adhere to the standard risk management system in order to achieve corporate goals and comply with the Environmental, Social and Governance Policy.

Bangchak Corporation'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 in order to lessen potential impact and assist the accomplishment of our long-term goals and business plan.

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 Bangchak Corporation's internal management to ensure that the company can preserve and generate long-term value.

Crafting a Sustainable World with Evolving Greenovation

 <http://www.bangchak.co.th>

 Bangchak

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