



CP Aextra Public Company Limited TCFD Disclosures 2023

TCFD Report Rev.01 - 2023

23 August 2024

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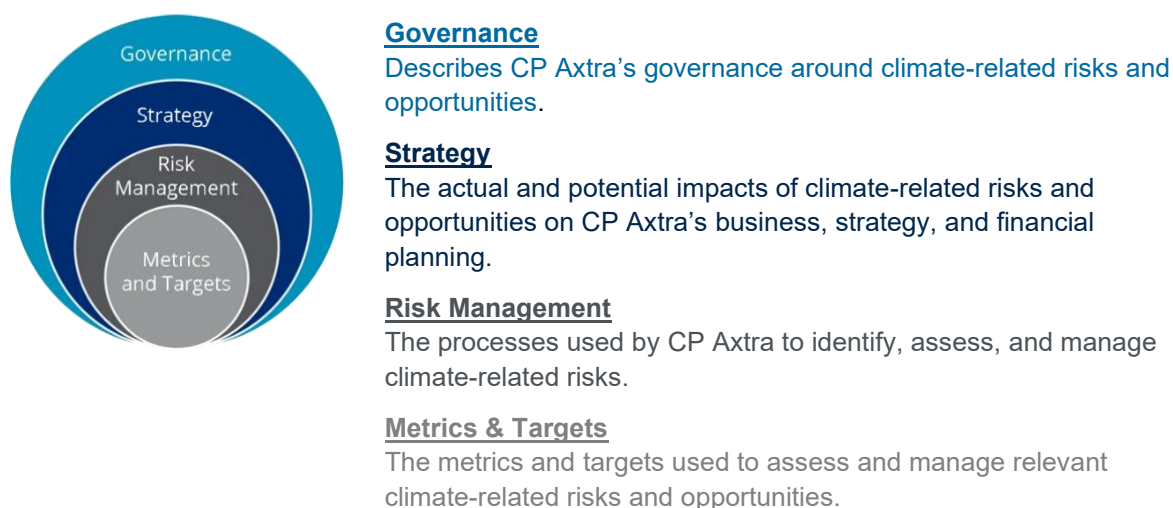
INTRODUCTION

Formerly Siam Makro PCL, CP Aextra Public Company Limited (the Company) operates two core businesses: member-based wholesale business and retail business. The Company has been continuously expanding to provide a wide range and assortment of products to professional members, business operators, and end consumers. Headquartered in Bangkok, the Company has over 2,800 branches with all types of store formats domestically and internationally. The Company's wholesale business includes wholesale stores operating under the Makro brand in Thailand and international markets (except in India, where the Company operates under "LOTS Wholesales Solutions") and the food service business. The Company's retail business is operated by Lotus's in Thailand and Malaysia. CP Aextra remains steadfast in its devotion to becoming an industry leader whilst expanding its scope of business operations, both online and offline, to be competitive at a regional level in Southeast Asia.

In doing its part towards meeting the Paris Agreement goals alongside the drive for business growth, climate resilience has been identified as one of the Company's overall 2030 sustainability strategies. To strengthen the Company's efforts in this regard, CP Aextra is determined to achieve its carbon neutral target by 2030 for its Scope 1 and Scope 2 emissions. In 2023, the Company assessed its exposures to climate-related risks and opportunities across scenarios and time horizons, and have developed a climate strategy framework to comprehensively manage their potential impact.

This report is the Company's first step in providing disclosure on its climate governance, strategy, climate-related risk management and metrics, and targets in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which serves as a foundation for the Company's climate journey through establishing a baseline, awareness, and structures. It also articulates on CP Aextra's commitments to combating climate change, integrating climate risks and opportunities into the Company's risk assessment process whilst reinforcing its three core sustainability pillars: "Heart - Living Right", "Health - Living Well", and "Home - Living Together". The scope of the report covers the operation of CP Aextra PCL, its subsidiaries, and selected assets in Thailand and overseas. With reference to the four core elements of the TCFD framework, the Company organizes this disclosure framework as follows (**Figure 1**):

Figure 1 Four Pillars of the TCFD Recommendations

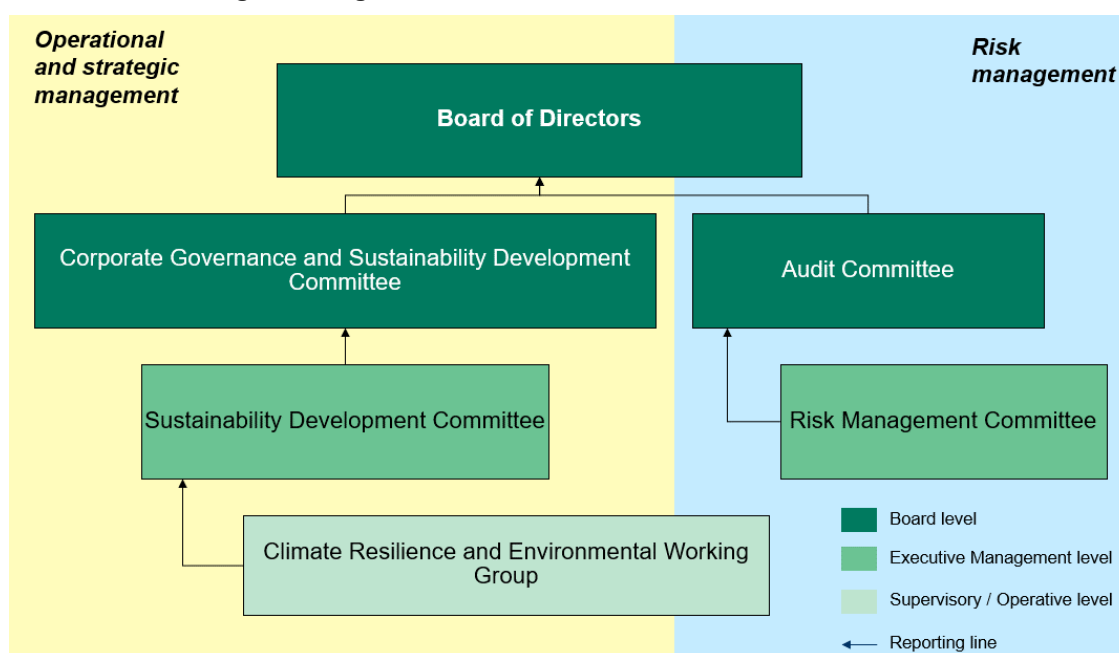


Moving forward, CP Aextra seeks to continually improve its climate risk and opportunity management in line with TCFD recommendations and global practices. The Company intends to regularly review its climate performance against the four pillars above and update this document on an as-needed basis.

GOVERNANCE

At CP Axta, a robust governance structure is in place to facilitate the oversight of climate-related issues. The Board of Directors (the Board) is the ultimate decision-making body and is responsible for the overall oversight of the Company, including overseeing and approving business strategic plans and managing approaches, driving response measures related to environmental, social, and governance (ESG) issues, which also covers the management of climate-related risks and opportunities. The Board considers and reviews its sustainability-related issues and performance as well as mission and strategic plans at least once a year, and assigns relevant functions to develop respective action plans to address these issues.

Figure 2 Organizational Structure of Climate Governance



Under the Board's oversight, several committees are established to assist the Board in the Company's management of climate-related risks and opportunities, as well as oversee daily operations and report back to the Board in a timely manner (**Figure 2**).

These committees include the following:

- Corporate Governance and Sustainability Development (CG&SD) Committee
- Sustainability Development Committee
- Risk Management Committee, under the Audit Committee

In addition, the Climate Resilience Working Team was established in June 2022 under the Sustainability Development Committee to enhance the implementation of climate strategy. The roles and responsibilities of each committee are summarized in **Table 1**.

Table 1 Roles and Responsibilities of Key Functions

CP Axta Functions	Composition	Climate-related Roles and Responsibilities
Board level		
CG & SD Committee	Chaired by an independent director and	▪ Identify and monitor material climate-related risks and opportunities

	consists of non-executive directors knowledgeable and experienced in sustainability issues	▪ Endorse policy, framework and strategies to promote sustainability development and climate resilience in the company for the Board's approval ▪ Supervise, monitor and review the Company's operations against its climate strategy, action plan and goals through corporate-level oversight ▪ Report directly to the Board
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Executive management level

Sustainability Development Committee	Chaired by one of the Board members, the committee consists of senior executives from all departments responsible for economic, social and environmental performance	▪ Oversee the efficiency and effectiveness of sustainability and climate performance throughout the Company ▪ Establish targets, develop strategies, management approaches, and performance indicators for climate-related issues ▪ Assign working groups to drive organizational performance to comply with the Company's objectives ▪ Monitor and review progress on climate actions on a quarterly basis, prepare annual action plans on materiality issues and ESG risks, for the CG & SD Committee's approval ▪ Communicate the progress and commitment of the climate dimension within sustainability strategies to internal and external stakeholders
Risk Management Committee	The committee consists of company executives and 12 executives with expertise and experience in risk management. It is structurally independent of the business lines and reports directly to the top management of the Company.	▪ Formulate a risk assessment framework and risk management policies covering environmental risks (including climate change) ▪ Oversee climate-related risk management ▪ Defines the direction of risk management of the Company according to its risk appetite and risk policy ▪ Review corporate strategies to ensure the adequacy and appropriateness of risk management for climate-related issues ▪ Report to the Audit Committee and the Board on its performance annually

Supervisory / Operative level

Climate Resilience Working Team	Chaired by a member of the Sustainability Development Committee and consists of 17 representatives across departments including Sales and Operations, Supply Chain Management, Construction and Facilities, Risk Management and Compliance, Sustainability, Finance Planning and Analysis, Corporate General Affairs, Account	▪ Establish operational targets related to climate resilience, such as increasing the share of renewable energy and low-carbon energy, in line with the company's sustainability strategy ▪ Implement GHG emissions reduction and offset programs and provide quarterly updates to the Sustainability Development Committee ▪ Examine technology options and identify solutions for emissions reduction and climate change mitigation that are suitable for the Company ▪ Monitor and ensure compliance with internal environmental policy and guidelines, as well as laws and regulations on GHG emissions ▪ Engage with stakeholders to raise awareness on climate issues, and collaborate with relevant stakeholders on climate change management and climate resilience
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		Communicate environmental performance to the Sustainability Development Committee and to other stakeholders via reports and other disclosure channels at least once a year
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Additional information on the governance framework of CP Axtra is detailed in [Section 2 Corporate Governance](#) in our 2022 Annual Report.

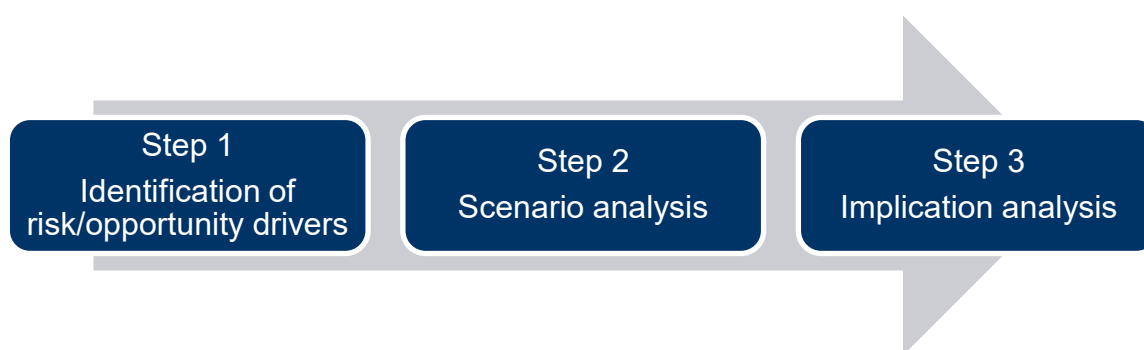
As an enabler towards meeting its climate ambitions and driving climate action within the company, CP Axtra has also included climate-related metrics as part of its senior executives' key performance indicators and as part of the Company's long-term incentive plan. Contributions of performance indicators for energy efficiency and other carbon neutral initiatives ranges from 10-25% of total performance indicators.

STRATEGY AND RISK MANAGEMENT

Climate Change Risk Assessment

To enable CP Axtra's strategy for the management of risks and opportunities associated with climate change and low-carbon transition, the Company conducted a climate change risk assessment in 2023. The assessment was conducted through a three-step approach as shown in **Figure 3 Three-step Climate Change Risk Assessment**, with each step explained below.

Figure 3 Three-step Climate Change Risk Assessment



Step 1: Identification of risk/opportunity drivers

CP Axtra conducted a desktop review of the latest climate-related policies, regulations, market trends and historical hazard events in the Company's countries of operation. CP Axtra also reviewed the risks and opportunities reported by its peers to identify and shortlist the risk and opportunity drivers potentially most relevant to the Company's business and operation. Note that the Company has taken into account the eight types of corporate risks from its [Enterprise Risk Management Manual](#) in the identification of climate-related risk and opportunity drivers to enhance the alignment of its climate risk management with the corporate's overall risk management system.

Step 2: Scenario analysis

Having shortlisted the climate-related drivers, CP Axtra conducted internal consultations through a workshop to seek people's views on the magnitude and likelihood of impact from each driver towards short-term, medium-term, and long-term time horizons. The exercise allows the Company to plot the drivers on a risk matrix that informs the comparative significance of each driver to CP Axtra's business between a base case (i.e., high-emissions) scenario and a low-emissions scenario.

Each driver was subsequently assigned with an indicator from external climate scenarios. Scenario data were fed into CP Axtra's assessment to allow for the integration of an objective perspective based on science. The results were normalized and presented as a heatmap to inform the relative materiality of each driver to CP Axtra's business.

Step 3: Implication analysis

Once the drivers and their materiality were identified and assessed, CP Aextra reviewed and identified the implications of each driver on various aspects of the Company's business, from the upstream supply chain to downstream customers. The Company also discussed the mitigation measures currently in place or planned in the future among internal stakeholders. The key findings of this discussion enabled CP Aextra to formulate a climate strategy framework and action plan. The following sub-sections provide more detail.

Selection of the Scenarios and Time Horizons

In accordance with TCFD recommendations, the scenario analysis was conducted using selected future-looking climate-related scenarios, as described below (**Table 2**).

Table 2 Climate-Related Scenarios

Type	Source	Scenarios		Time Horizons
Transition	World Energy Outlook 2022, International Energy Agency (IEA WEO2022)	Stated Policies Scenario (STEPS) Current trajectory based on the stated climate policy ambitions, represents 'business as usual' towards 2050.	Announced Pledges Scenario (APS) Aligned with the Paris Agreement to limit warming to "well below 2°C", assumes all climate commitments will be met.	Near term: 2025 Medium term: 2030 Long term: 2050
Physical	Sixth Assessment Report of the United Nations Intergovernmental Panel on Climate Change (IPCC AR6)	SSP1 – 2.6 Low-emissions scenario where warming is limited to 1.6°C by 2100 with net-zero emissions possibility.	SSP5 - 8.5 High-emissions scenario where warming reaches 2.4°C by mid-century and 4.4°C by 2100.	Near term: Baseline Medium term: 2030 Long term: 2050

Medium- and long-term time horizons were chosen to align with the company-wide emissions reduction targets.

Transition Risks and Opportunities Identification and Assessment

Following TCFD recommendations, CP Axtra categorized transition drivers into four types: **policy and legal**, **market**, **technology**, and **reputation**. As explained, the assessment was conducted in three steps. The tables below provide a summary of the results of these steps, including the identification of transition drivers, relative materiality of each driver based on the assessment, and potential financial implications.

It should be noted that the relative materiality was determined by incorporating CP Axtra's internal perspective on the magnitude and likelihood of impact from each driver and the external perspective informed by the International Energy Agency (IEA)'s World Energy Outlook 2022. Here, the Company focuses on the comparative significance of each driver between the base case and the low-carbon case, as it assumes that most transition drivers can be influenced by various factors not related to climate change or low-carbon economy transition. For example, the global energy crisis since 2022 was mainly driven by geopolitical conflicts rather than the low-carbon transition. By focusing on the comparative significance (or difference) between the base case (i.e., where low-carbon transition is lagged) and the low-carbon case (i.e., where the progress of low-carbon transition aligns with international climate commitments), CP Axtra can capture the precise impact of climate-related risks and opportunities have on its business.

Policy and Legal

Identified Transition Driver	Driver and impact description	Relative Materiality			Potential Financial Implications
		2025	2030	2050	
Carbon Pricing Mechanisms	<u>Risk factor:</u> Governments in CP Axtra's countries of operation are preparing for carbon pricing policies, such as carbon tax. The Company expects the phenomenon to escalate in the long term, resulting in a direct and/or indirect increase in operating expenditure (OpEx) for the business.	Limited	Low Risk	High Risk	Increase in OpEx directly from an explicit carbon price (e.g., direct purchase of carbon credits, payment of carbon tax) or indirectly from an increased energy/input cost due to a carbon price on our supply chain.
Increasing risk from climate change-related litigation	<u>Risk factor:</u> As of 2023, over 2,142 climate change litigation cases have been filed globally, where more than half of the cases filed against corporate actors were filed against non-fossil sectors, such as food and agriculture. CP Axtra expects that climate-related legislations will be strengthened in countries and operation where the Company is based, which may either have a direct impact on its business due to higher compliance obligations, or an indirect impact passed through from its value-chain.	No proxy indicator available			Increase in OpEx for compliance costs related to the emerging regulations in climate-related topics. Potential decrease in the company's valuation if any legal action is taken against the company.
Tightening restrictions on plastic products	<u>Risk factor:</u> While regulations on plastic packaging and products may not have direct impact on CP Axtra's core operations, they may place constraints on its value chain partners. Emerging and existing	Limited	Low Risk	Mod. Risk	Increase in OpEx for procuring raw material substitutes for plastic or developing low-carbon packaging alternatives to the market. Potential

	policies and regulations such as 'Thailand's Roadmap on Plastic Waste Management' (2018-2030), which aims to direct 100% of target plastic wastes into the Circular Economy by 2027, can translate into higher compliance cost in the supply chain.				decrease in revenue if the market is not conducive for increasing goods prices in line with increase expenditure. Regulations on plastic waste management, such as Extended Producer Responsibility (EPR) may require CP Axtra's wholesale and retail operations to take on active waste management responsibilities, including offering waste drop-off and sorting facilities at store locations.
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Market

Identified Transition Driver	Driver and Impact Description	Risk Scores			Potential Financial Implications
		2025	2030	2050	
Market-driven shift toward Green Consumerism	<u>Risk factor:</u> A shift in consumer behavior towards more sustainable or green products may lead to reduced revenue from lower demand from consumer behavior changes. The retail sector may need to increase investment in research and development in sourcing products with good sustainability profile to meet evolving customer preferences. In addition, increased public communications effort to highlight CP Axtra's sustainability performance and commitment to the market may be required. <u>Opportunity factor:</u> There is more room for growth for sustainability-focused products and services as the market matures and such products and service migrate from niche market to end consumers. <u>Overall impact direction:</u> Green consumerism implies challenges in engaging with supply chain partners and to constantly source low-carbon products and services. At the time of the assessment, this driver presents a higher risk than opportunity due to the potential cost increase and revenue decrease from the transition.	Limited	Limited	Low Risk	Potential increase in capital expenditure (CapEx) and OpEx due to increased expenditure on research and development of new product lines, environmentally friendly packaging, and sustainable production processes (e.g., low-carbon products). This may negatively impact revenue if customers expect product prices to remain constant but with increased positive environmental footprint.

Technology

Identified Transition Driver	Driver and Impact Description	Risk Scores			Potential Financial Implications
		2025	2030	2050	
Low-carbon logistics	<u>Risk factor:</u> Transportation is an important source of emissions across CP Axtra's value chain. Although the vehicles owned by the Company are limited, CP Axtra has engaged logistic partners for the transportation of goods across its distribution centers and stores. The transport sector is facing immense pressure to decarbonize, which involves disruptive technologies such as electric vehicles and renewable/clean fuels. Major capital investments for infrastructural replacement and upgrades as well as associate costs for operation and maintenance may become important cost items for our logistic partners, potentially impacting the Company indirectly.	Limited	Limited	Moderate Risk	Increase in CapEx for the investment of low-carbon transport solutions (e.g., electric vehicles and charging facilities). Increase in OpEx due to the pass-through effect where the third-party contractors pass its investment cost of low-carbon transport onto CP Axtra.
Low-carbon refrigerants	<u>Risk factor:</u> CP Axtra has initiated the adoption of cooling/refrigeration systems based on refrigerants with low global warming potential (GWPs) and made significant progress in this area. However, a sizable portion of CP Axtra's systems are still based on conventional refrigerants with high GWPs. In the medium to long term, those remaining high GWPs systems will need to be replaced by low GWPs systems, leading to an important capital investment and associated operating costs.	Limited	Low Risk	Moderate Risk	Increase in CapEx for cooling/refrigeration system retrofit and replacement. OpEx can be lower or higher than current systems due to efficiency differences, but maintenance costs may increase as new cooling/refrigeration systems based on refrigerants with low GWPs are not as commonly used as conventional systems that run on high-GWPs refrigerants.
Increased uptake of renewable energy	<u>Risk factor:</u> Deployment of renewable energy solutions can be carried out in various ways. CP Axtra has partnered with third party solution providers to avoid the potential risk from direct investment of renewable systems. <u>Opportunity factor:</u> The Company has used renewable energy through power purchase agreements (PPAs). Therefore, the investment cost of renewable systems is born by third party solution providers, while CP Axtra can enjoy steady and predictable energy cost. <u>Overall impact direction:</u>	Limited	Low Opp.	Mod. Opp.	CP Axtra leverages power purchase agreements to deploy the use of electricity generated from renewable sources (mainly solar power). This would slightly increase our OpEx in the short run due to higher green tariffs, and allows us to benefit from long-run economic gains as electricity generated from fossil fuels became more expensive in a low-carbon world.

	PPA is a common business model for renewable electricity. Based on the Company's experience, the expansion of renewable systems through this model can be expected to bring an increasing opportunity to manage operating costs.				
Higher energy efficiency for buildings and machinery	<u>Risk factor:</u> Some energy efficiency measures require the replacement of existing equipment, leading to an increase in capital expenditure (CapEx). <u>Opportunity factor:</u> According to the IEA, energy efficiency improvement can be achieved by two to three times with standards and labeling. This benefit can be translated into the reduction of energy bills. <u>Overall impact direction:</u> CP Axtra has progressively introduced energy efficient appliances and equipment across its operation. Given the amount of energy reduction potential, the Company believes the benefit will become tangible in the coming years.	Limited	Limited	Low Opp.	CP Axtra will need to increase CapEx in the short run to replace inefficient machinery. However, OpEx will be decreased in the long run due to energy efficiency improvement. The opportunity is considered limited by 2030 from the CapEx required for machinery replacement. In the long run, the opportunity may become more tangible due to reduced energy expenditure.

Reputation

Driver and Impact Description	Driver and Impact Description	Driver and Impact Description			Driver and Impact Description
		Driver and Impact Description	Driver and Impact Description	Driver and Impact Description	
Higher access to finance and capital due to stakeholder recognition	<u>Risk factor:</u> Stakeholder expectations on CP Axtra's climate responsibility along the value chain will impact the Company's reputation. Unfavorable climate-related performance could affect the Company's access to capital and reduce its valuation if stakeholder expectations are not met. <u>Opportunity factor:</u> Good management of climate-related topics can support the Company in gaining recognition from its stakeholders, raising its corporate valuation thus turning risk into opportunity. <u>Overall impact direction:</u> CP Axtra has been proactive in improving our climate performance through various initiatives as illustrated in this report. This has allowed the Company to tap into sustainable finance and will continue to facilitate its access to finance and capital.	No proxy indicator available			Increased valuation of CP Axtra if its climate performance is strong enough to gain recognition from relevant stakeholders, facilitating the Company's access to capital and finance.

Physical Risks Identification and Assessment

CP Aextra categorized physical risks into two types, **acute** and **chronic** hazards, and identified eight hazards that may pose a physical climate risk to the Company's assets and operations, value chain, and the health and safety of its staff and customers. These hazards include **extreme heat, riverine floods, extreme rainfall floods, coastal floods, extreme winds and storms, rainfall-induced landslides, water stress and drought, and wildfires**.

The coverage of this assessment includes 25 key assets selected from CP Aextra's portfolio across East and Southeast Asia. These involve two main asset types – firstly, the Company's wholesale and retail stores, and secondly, its distribution centers and warehouses. An overview of the screening results is summarized in **Table 3** across all the 25 assets under different scenarios and time horizons.

Table 3 CP Aextra's Physical Climate Risks

Type	Identified Physical Risk Driver	Baseline	SSP1-2.6		SSP5-8.5	
			2030	2050	2030	2050
Acute/Chronic	Extreme heat	Low Risk	Moderate Risk	High Risk	High Risk	Very High Risk
Acute	Riverine floods	Moderate Risk	Moderate Risk	Moderate Risk	Moderate Risk	Moderate Risk
Acute	Extreme rainfall floods	Limited	Limited	Limited	Limited	Limited
Acute/Chronic	Coastal floods	Limited	Limited	Limited	Limited	Limited
Acute	Rainfall-induced landslides	Limited	Limited	Limited	Limited	Limited
Acute	Extreme winds and storms	Limited	Limited	Limited	Limited	Limited
Acute/Chronic	Water stress and droughts	Moderate Risk	High Risk	High Risk	High Risk	High Risk
Acute	Wildfires	Moderate Risk	High Risk	High Risk	High Risk	Very High Risk

The findings suggest that the Company should prioritize its responses to extreme heat, wildfires, water stress and drought, and riverine floods. Certain sites are also at relatively higher risk from extreme rainfall floods and extreme winds and storms. Therefore, the Company has identified the business and financial implications of these hazards, alongside key adaptation measures specific to CP Aextra's business activities in the best case (SSP 1-2.6) and worst case (SSP 5-8.5) scenarios.

Extreme heat

Maximum temperatures and the frequency of extreme heat events are anticipated to rise globally due to climate change. A higher prevalence of this hazard may increase potential financial risk for CP Axta by increasing operating costs and/or reducing revenue. Over 90% of the assessed real estates and all the assessed distribution centers are potentially exposed to a 'High' or 'Very High' risk of extreme heat by 2050 under at least one climate scenario.

Scenario	Risk Level		Business Impact	Financial Implications	Adaptation Measures
	2030	2050			
Best case (SSP 1-2.6)			Upstream - Increased likelihood of product spoils during transportation but is manageable with mitigation measures implemented. Direct Operations - During extreme heat events, there may be an increased energy demand for cooling of indoor areas for equipment and personnel which can increase energy costs. Downstream - A moderate portion of customers may prefer to use e-commerce deliveries, resulting in significantly reduced foot traffic at stores.	Increased direct costs –increased use of energy for cooling of indoor areas for personnel or temperatures sensitive products which can increase costs. Decrease revenues due to reduced sales capacity – Customers may be less likely to use non-essential retail and commercial real estate during extreme heat conditions which can lead to business disruptions and loss in revenue.	- Determine whether extreme heat has been factored into design specifications for high-risk sites. - Identify sites that may be particularly prone to downtime during extreme heat due to a high proportion of outdoor operations, and devise business contingency plans (e.g., altering work schedules, introducing stop work procedures) if not already in place. - Provide training to employees to identify symptoms of heat stress and provide first aid.
Worst case (SSP 5-8.5)			Upstream - Increased likelihood of product spoils during transportation leading to product shortage in stores. Direct Operations - During extreme heat events there may be an increased energy demand for cooling of indoor areas.	Increased direct costs –increased use of energy for cooling of indoor areas for personnel or temperatures sensitive products which can increase costs, additional product procurement due to spoils during transportation. Decrease revenues due to reduced sales capacity – associated with	

		for equipment and personnel which can increase energy costs. - Extreme heat is expected to pose a high risk to solar power, where extreme temperatures can significantly reduce the cell efficiency and potentially damage the panels. Downstream - There may be health and safety issues, such as heat stroke and dehydration, for staff and customers if there is not enough cooling in place. - A significant portion of customers may prefer to use e-commerce deliveries, resulting in significantly reduced foot traffic at stores.	reduced efficiency or failure of temperature sensitive equipment, spoiling of products and decreased capacity of workforce due to heat related illnesses (e.g., heat stroke). Customers are noticeably less likely to use non-essential retail and commercial real estate during extreme heat conditions which can lead to business impact and loss in revenue.	
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Note: Risk level colors correspond to risk level ratings in Table 3

Floods, extreme winds, and storms¹

Extreme weather events, including high levels of precipitation and extreme rainfall are projected to increase due to physical climate change. This is likely to heighten both the frequency and intensity of flooding, increasing the risk of physical damage to infrastructure. CP Axta may experience increased capital expenditure and operating costs, and reduced revenue as a result. Around one third of the assessed real estates and over half of the assessed distribution centers are exposed to a 'High' or 'Very High' risk of flooding by 2050 under at least one emission scenario. However, there is a moderate increase from the baseline across both scenarios and both time horizons on an aggregate level.

Scenario	Risk Level		Business Impact	Financial Implications	Adaptation Measures
	2030	2050			
Best case			Upstream	Decrease revenues due to reduced production capacity – whilst repairs	Flood prevention and extreme wind management are

¹ For all other hazards in the category except riverine flood, limited risk was found across baseline, SSP 1-2.6, and SSP 5-8.5 scenarios and all timeframes. Consequently, this section will only focus on business impact, financial implications, and adaptation measures for riverine flood risk.

(SSP 1-2.6)		- Access to the affected assets (e.g., from suppliers to distribution centers/retail stores) may be interrupted by floods, causing supply chain delays. Direct Operations - Structural damage to buildings that is covered under insurance. - Debris and floodwaters may block key access routes for deliveries and staff for a short period of time. Downstream - Debris and floodwaters may reduce number of customers at physical stores.	are being carried out, or if electricity supply is interrupted. Production capacity may also reduce if materials or equipment in real estates or distribution centers become damaged, or deliveries from suppliers are delayed. Increased direct costs – associated with cleaning up floodwaters or debris, or rerouting deliveries of products, and insurance costs. Floods between 2020-2022, resulted in ~1 million THB in damaged goods across Makro stores in Lopburi and 2 million THB in lost revenue. Extreme winds and storms between 2020-2022, resulted in ~4.5 million THB in financial damages across Lotus's.	integrated into the store development process: store selection in low flood risk areas, preventive building design and material specifications to withstand extreme winds. - A business continuity plan (BCP) for flood risk has been developed and implemented for every asset, which includes training for the store managers to monitor rainwater levels, mobilizing a business continuity team and utilizing business continuity budget (e.g., sandbag purchases) for flood prevention in high-risk circumstances. The BCP includes coordination with local authorities and emergency personnel and provides for alternative transportation methods to assist customers, suppliers, and local community members during floods. - Warehouses/distribution centers built in multiple regions to distribute risk of flood.
Worst case (SSP 5-8.5)		Upstream - Access to the affected assets (e.g., from suppliers to distribution centers/retail stores) will be cut off by floods due to physical damage to roads, causing supply chain disruption. Direct Operations - Structural damage to buildings - Debris and floodwaters may block key access routes for deliveries and staff for extended periods of time (i.e., multiple days).	Increased capital expenditures – associated with covering repairs to damage and/or replacing equipment and infrastructure not covered by insurance. Decrease revenues due to reduced production capacity – during repairs, or if electricity supply is interrupted. Production capacity may also reduce if materials or equipment in real estates or distribution centers become damaged, or deliveries from suppliers are delayed.	

			- Flooding can pose a health and safety risk and evacuations may be necessary during a flooding event. Downstream - Debris and floodwaters, as well as extreme storm winds block access routes and discourage customers from traveling to physical stores.	Increased direct costs – associated with cleaning up floodwaters or debris, or rerouting deliveries of products to customers if key transport routes are blocked. Floods may result in ~10 million THB in damaged goods across Makro stores and 20 million THB in lost revenue. Extreme winds and storms may result in 45 million THB in financial damages across Lotus's. This totals to a potential of 75 million THB impact on CP Aextra's operations in the worst case scenario.	- Coordination with suppliers to supply directly to stores to reduce goods shortages. - Online ordering channel to provide alternative means for customer to shop for products without having to come to the store. - Our current adaptation measures cover 100% of total revenue. - Insurance subscriptions²
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Note: Risk level colors correspond to risk level ratings in Table 3

Water stress and drought

Higher temperatures and more extreme, less predictable, weather conditions under climate change are expected to affect water availability by altering the distribution of rainfall, river flows and groundwater. Water stress occurs when water withdrawals exceed the available water supply. Climate change may drive an increase in water stress by reducing water availability from altered rainfall patterns. A lower availability of water may heighten potential financial risk for CP Aextra by increasing operating costs and/or reducing revenue. Almost half of the assessed real estates and 10% of the assessed distribution centers are potentially exposed to a 'High' or 'Very High' risk of water stress and drought by 2050 under at least one climate scenario.

Scenario	Risk Level		Business Impact	Financial Implications	Adaptation Measures
	2030	2050			
Best case			Upstream	Increased direct costs – associated with higher	

² In the event the adaptation measures do not fully mitigate the impact, we use a risk-transfer mechanism in the form of natural disaster and business interruption insurance to lessen the overall financial risk to the Company.

(SSP 1-2.6)		- Food and beverage supply chain may be affected by water stress as the production is water intensive, e.g., from agricultural commodities. Direct Operations - The cost of water for domestic use may go up during times of water stress and droughts. - There may be concerns on food safety if hygienic conditions of the supply chain and stores is affected by water stress, causing a potential reputational risk. Downstream - None identified	water costs during periods of water stress and drought. Water stress may impact their supplies, causing a limited increase in the cost of sales. Decrease revenues due to reduced sales capacity – negative effects on sanitation, hygiene and food safety may lead to decreased sales.	- Adopt water efficient/saving technologies to reduce water usage. - Water storage infrastructures have been constructed near sites to ensure uninterrupted water supply during periods of water scarcity as well as the identification of alternate water source and supplies. - Explore opportunities for rainwater harvesting at site, recycle and reuse of wastewater.
Worst case (SSP 5-8.5)		Upstream - Agricultural commodities in CP Axta's value chains are significantly affected by water stress, leading to supply shortages and increased costs of alternative suppliers. Direct Operations - The cost of water for domestic use increases during times of water stress and droughts, while consumption in stores and distribution centers for employees and cooling systems also increase. - There may be concerns on food safety if hygienic conditions of the supply chain and stores is affected by water stress, causing a potential reputational risk. Downstream - None identified	Increased direct costs – associated with higher water costs during periods of water stress and drought. Water stress is anticipated to impact their supplies, causing a significant increase in the cost of sales (e.g., for alternative sourcing). Decrease revenues due to reduced sales capacity – negative effects on sanitation, hygiene and food safety may lead to decreased sales.	

Note: Risk level colors correspond to risk level ratings in Table 3

Wildfires³

Warmer and dryer conditions across the globe, induced by climate change, are fueling both the intensity and frequency of wildfires. Even where wildfires are man-made, studies have shown that the impact of climate change has increased the intensity and severity of such wildfires⁴. Direct heat, and smoke from these events may increase potential financial risk for CP Aextra by increasing capital expenditure and operating costs and decreasing revenue. Over 90% of the assessed real estates and around 80% of the assessed distribution centers are exposed to a 'High' or 'Very High' risk of wildfires by 2050 under at least one emission scenario.

Scenario	Risk Level		Business Impact	Financial Implications	Adaptation Measures
	2030	2050			
Best case (SSP 1-2.6)			Upstream - Potential disruption to agricultural supply chain - Health and safety impacts to supply chain workers due to haze, air pollution Direct Operations - During wildfire events there may be disruptions to operations if conditions are not appropriate to work in. Evacuations of staff from site areas may be necessary which may lead to downtime and loss of revenue. - Outdoor operations may be affected by dust and smoke from fires in the vicinity.	Increased direct costs – additional costs on air purification and mitigation measures, protective gear for employees. As a result of air pollution and dust particulates in the past, CP Aextra has incurred additional costs of ~142,000THB towards the health and safety of our employees. Decrease revenues due to reduced sales	- For existing and new operating assets, to develop business continuity plan and measures that responds to secondary risks of wildfire, including but not limited to water spraying for cooling towers, supplementary air conditioning and purification, increased budget for cleaning and sanitation services against impact from dust particulates. - To develop a fire protection plan, including training for fire preparation at every store and distribution center.

³ Acknowledging that CP Aextra's retail stores and distribution centers are located in urban areas and therefore may not be directly impacted by a fire hazard, the inclusion of this risk was due to its secondary impacts, such as haze, air pollution, and changing consumer patterns due to air pollution. To capture these secondary impacts, the Company assessed the risk of climatic conditions conducive to wildfires within a radius of 40km of CP Aextra assets. An additional screening was also conducted to assess if any green space that is prone to fire can be found within this buffer zone. 15 out of 22 assets that show a high or very high risk to wildfires are found with a green space (e.g., forest, grassland, farm, etc.) within the buffer zone.

⁴ [Wildfires and Climate Change - Center for Climate and Energy Solutions Center for Climate and Energy Solutions \(c2es.org\)](https://www.c2es.org/wildfires-and-climate-change/)

		Downstream Haze, dust particulates, and residual heat is likely to reduce foot traffic from local customers as well as tourists	capacity - Customers may be less likely to use non-essential commercial stores due to smoke and dust particulates, which can interrupt cash flow and damage businesses.	In anticipation of seasonal wildfires, to increase stock on protective gear, such as protective masks, for employees and customers.
Worst case (SSP 5-8.5)		Upstream - Potential disruption to agricultural supply chain - Health and safety impacts to supply chain workers due to haze, air pollution Direct Operations - Disruptions to operations if conditions are not appropriate to work in. Evacuations of staff from site areas may be necessary which may lead to downtime and loss of revenue. - Outdoor operations will be affected by dust and smoke from fires in the vicinity for an extended period of time, potentially leading to increases in operational disruptions due to health and safety concerns for employees. Downstream - Haze, dust particulates, and residual heat significantly reduce foot traffic from local customers as well as tourists, especially where haze extends for several months.	In the worst case scenario, CP Aextra may incur additional costs of 2.1 million THB towards the health and safety of our employees (1.25million THB for Makro assessed sites and 0.85million THB for Lotus's assessed sites)	

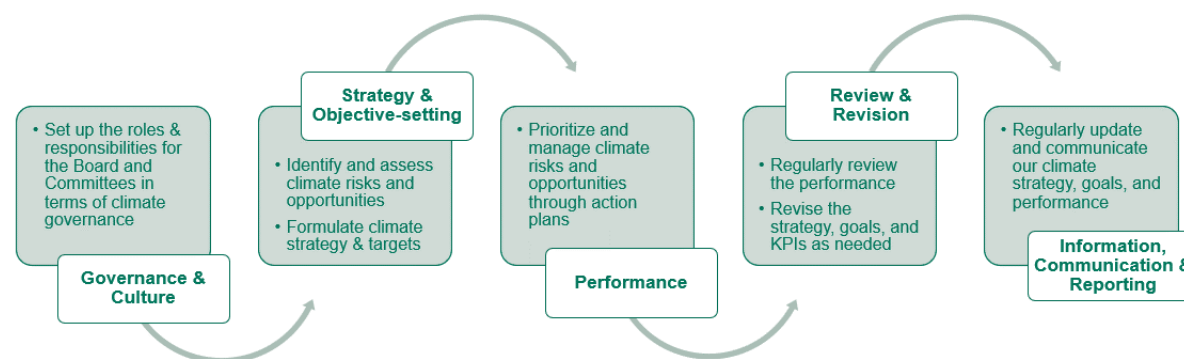
Note: Risk level colors correspond to risk level ratings in Table 3

Climate Change Risk Management

Having completed the climate change risk assessment, CP Axtra adopts the Committee of Sponsoring Organizations of Treadway Commission (COSO) international standard to guide its risk policies, objectives, management frameworks, and management structure. See

Figure 4 for how climate change risk management is integrated in the Company's adoption of the COSO ERM Framework.

Figure 4 Climate Change Risk Management in the COSO ERM Framework



Climate change as a cross-cutting theme is well embedded in this COSO ERM Framework. CP Axtra has established robust climate governance, as described in the **Governance** section of the report. Under the **Strategy & Objective Setting** pillar, a comprehensive climate change risk assessment was conducted and introduced above. Based on the findings of the climate change risk assessment, the climate strategy framework which outlines the Company's climate-related targets, pillars and key initiatives has been formulated by the Climate Resilience Working Group and endorsed by the Sustainability Development Committee (see next section for more information). Meanwhile, under **Performance**, the Company has made climate action plans, informed by the climate change risk assessment and the climate strategy framework, to prioritize the risk items and **response** measures that it will focus on in the short, medium, and long term. Climate performance has been and will continue to be regularly tracked by key performance indicators (KPIs) and will be **reviewed** annually by the Climate Resilience Working Group, while revisions of the climate strategy, targets and KPIs will be conducted on an as-needed basis. Finally, CP Axtra is committed to constantly updating and communicating its climate strategy and performance in the [Annual Report 2022 \(56-1 One Report\)](#) and the TCFD Report.

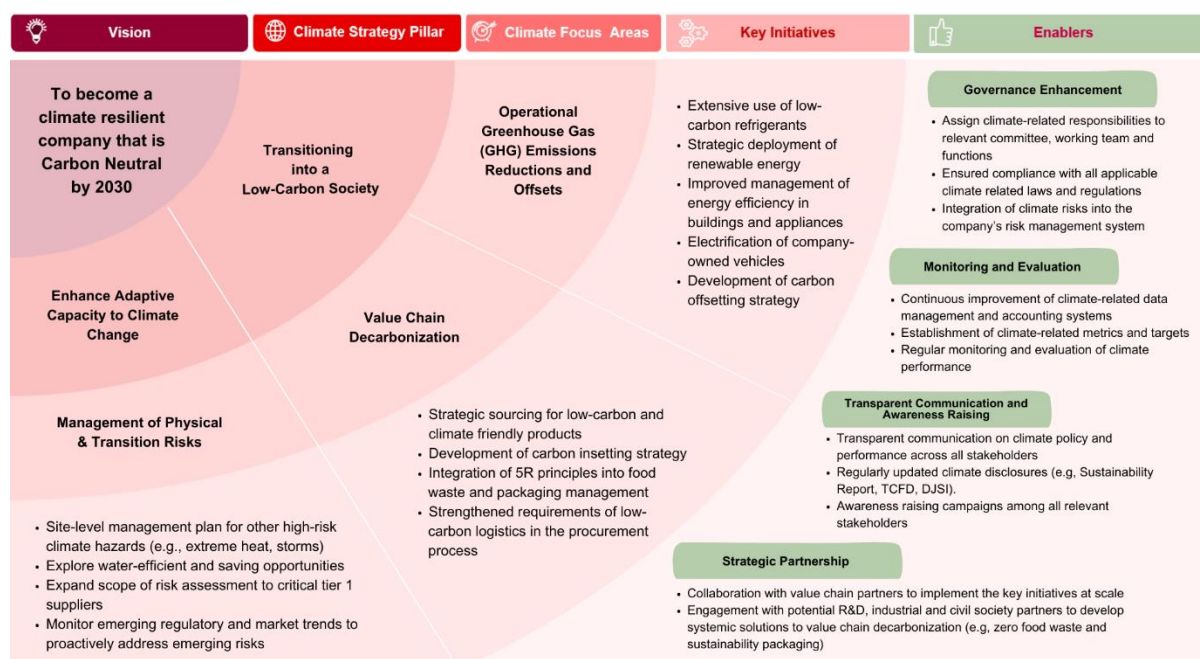
Climate Strategy Framework

In light of the climate change risks and opportunities results, CP Axtra has sought to develop a climate strategy framework that adequately and holistically addresses the key risks and pursue opportunities identified. As such, the core theme of “becoming a climate resilience company” against climate-related risks is central to CP Axtra’s climate strategy, as indicated in **Figure 5**.

As carbon tax has been identified as a major risk to CP Axtra’s businesses, decarbonization efforts within direct operations and across the value chain is therefore a priority for the Company to manage this risk. Nevertheless, CP Axtra has also identified key opportunities to the business through its decarbonization efforts, including cost savings due to energy efficiency and the increased uptake of renewable energy. Combined, these are the key drivers behind one of the Company’s two climate change strategy pillars: **“Future Proof our Business in a Low-Carbon Economy Transition”**. Within this pillar, the Company’s most important milestone target is to achieve [Carbon Neutral of its Scope 1 and Scope 2 operations by 2030](#). In the long run, CP Axtra is committed to aligning the Company’s climate strategy with its parent company, Charoen Pokphand Group, including the pursuit of net zero emissions by 2050.

From the physical risks assessment, the Company also found that, without mitigation measures, assets under CP Axtra are highly exposed to several natural hazards. Consequently, the Company has also prioritized the mitigation of these physical risks as its second climate strategy pillar, **“Enhance Adaptive Capacity to Climate Change”**, which will not only strengthen the physical resilience of CP Axtra’s assets, but also its business value chain and people.

Figure 5 CP Axtra’s Climate Strategy Framework



Transitioning into a Low-Carbon Economy

Given CP Axtra’s ambitious 2030 carbon neutral targets and aspirations for subsequent net zero goals, which align with the international commitments to combatting climate change, the Company’s priorities within this space are to implement energy efficiency and renewable electricity initiatives across its operations. Please see below for the Company’s current initiatives to drive this pillar:

Table 4 Initiatives to Realize CP Aextra's Climate Strategy

Initiatives	Financial Investments	Outputs
Solar cell investment at 642 sites	Lotus's = 5660 million THB (566 sites) Makro = 760 million THB (76 sites) Total CP Aextra = 6420 million THB ⁵ Payback period of 10 years	Reduced energy consumption: Lotus's = 63,35,000 kWh Makro = 162,500 kWh per year
Investments in new stores such that green refrigerants are incorporated at construction phase at 20 sites	Lotus's = 60 million THB (3 sites) Makro = 340 million THB (17 sites) Total CP Aextra = 400 million THB Payback period of 7 years	Reduced Scope 1 emissions of 18,562 tons of CO ₂ equivalent in 2022
Training for internal technical awareness and capacity	Lotus's = 7 million THB Makro = 53 million THB Total CP Aextra = 60 million THB	Increased awareness and drive for climate change
Electric vehicles at Head Office	Makro = 49 million THB	Reduced emissions from mobile combustion
Switch to LED lightbulbs and installation	Makro = 88 million THB Payback period of 10 years	Reduced energy consumption of 2,000,000 kWh

Under Lotus's assets, solar panels with 111 MW capacity have been installed over the past five years. Across all renewable energy initiatives conducted under Lotus's in 2022, a reduction of 56,705.05 MWh/year in electricity purchase from the grid was achieved. Under Makro's assets, solar power initiatives have been implemented across operations, including solar streetlights (achieving 36,500 kWh/year reduction) and solar-generated thermal energy (generating 126,000 kWh/year), and rooftop solar systems, for a total energy savings of 39,659.86 MWh/year. Based on the Company's financial analysis, the amount of investment on solar PV is estimated at 10 million THB per site, with a payback period of approximately 10 years. Moving forward, both Makro's and Lotus's operating businesses will be pursuing power purchasing agreements for renewable electricity, particularly from solar PV. Makro is also exploring options to expand into the use of electric vehicles and hydrogen-powered trucks across operations to further reduce emissions generated in mobile combustion.

In addition, CP Aextra's retail and wholesale operations are significant users of cooling and refrigeration systems. The Company has identified green refrigerants, or refrigerants with low GWPs, as an opportunity to reduce our Scope 1 emissions. CP Aextra's initial effort involved 20 sites, with 20 million THB of investment per facility to switch from conventional to green refrigerants. The expected payback period was estimated to be seven years.

Awareness and Motivation

Supporting the Company's journey towards emissions reduction are the people within CP Aextra – particularly from their awareness and drive for climate action. Across Makro and Lotus's operations,

⁵ Investments in solar panels installation are conducted through a Power Purchasing Agreement.

approximately 60 million THB has thus been invested in developing internal technical awareness and capacity related to climate change. The Company also holds an annual “Excellence in Energy Management Awards” program to support its carbon neutral target, which is categorized into two award types: “Energy Saving Awards” and “Water Stewardship Awards”, which looks at key metrics related to consumption, savings, and intensity.

Beyond its own operations, CP Axtra will also seek collaborative efforts with its suppliers and customers to decarbonize the Company’s value chain and enhance business resilience in a low-carbon world. From this initiative, the Company aims to prioritize sustainable sourcing of raw materials through transparency and traceability, which will build the foundation towards developing and launching credible low carbon products. In addition, CP Axtra has identified low-carbon logistics to be an opportunity for CP Axtra moving forward, which can be pursued in parallel to existing initiatives to decarbonize the fleet within its operations. For more information, please see the Company’s initiatives on climate resilience, sustainable packaging, and responsible supply chain management in CP Axtra’s [Annual Report 2023 \(56-1 One Report\)](#).

Enhance Adaptive Capacity to Climate Change

In light of its physical risks assessment, water resources management is a critical pillar in CP Axtra’s adaptive measures against climate change. The Company has sought to mitigate these risks through conducting site-level water stress risk assessment, where it found that 32% of its water consumption was from water stress areas. The Company has also extended such risks assessments to its Critical Tier 1 suppliers, where 13 critical Tier 1 suppliers are located in water stressed areas. As such, a focus area under this pillar will drive water stewardship within CP Axtra’s operations and its supply chains. The Company’s current work on water stewardship can be further explored on page 171 of CP Axtra’s [Annual Report 2022 \(56-1 One Report\)](#). Another key action item under this pillar will be to strengthen its management and response plans at site level to include a wider range of natural hazards over the next several years.

To holistically address and adapt to the potential risks of climate change, CP Axtra will also need to be proactive in monitoring changes in the market based on consumer demand as well as the changing regulatory landscape at both the regional and national level. Consumer trends and regulatory changes, including increasing policies on plastics, have currently been identified as future risks but have the potential to become opportunities, as these trends have been identified early and initiatives are being implemented across the Company.

Further information can be found in CP Axtra’s [Environmental Policy and Strategies](#) document which outlines the Company’s approach to climate change management.

METRICS AND TARGETS

To effectively operationalize its climate strategy and track progress towards the aspirations set forth, CP Axtra has set the targets and key performance indicators in different time horizons for the focused climate topics of the Company. The Company believes that setting annual performance targets as its interim progress is complementary to the success of our 2030 Sustainability Targets. More information on the progress of CP Axtra’s annual targets is detailed in the chapter [HOME Living Together](#) in our 2022 Annual Report. In terms of climate-related targets, the Company’s two prioritized areas across climate risks identified are in GHG emissions mitigation and water stress, due to their direct impact on the Company’s operations. The targets and corresponding metrics used for key performance indicators (KPIs) are summarized in **Table 5**.

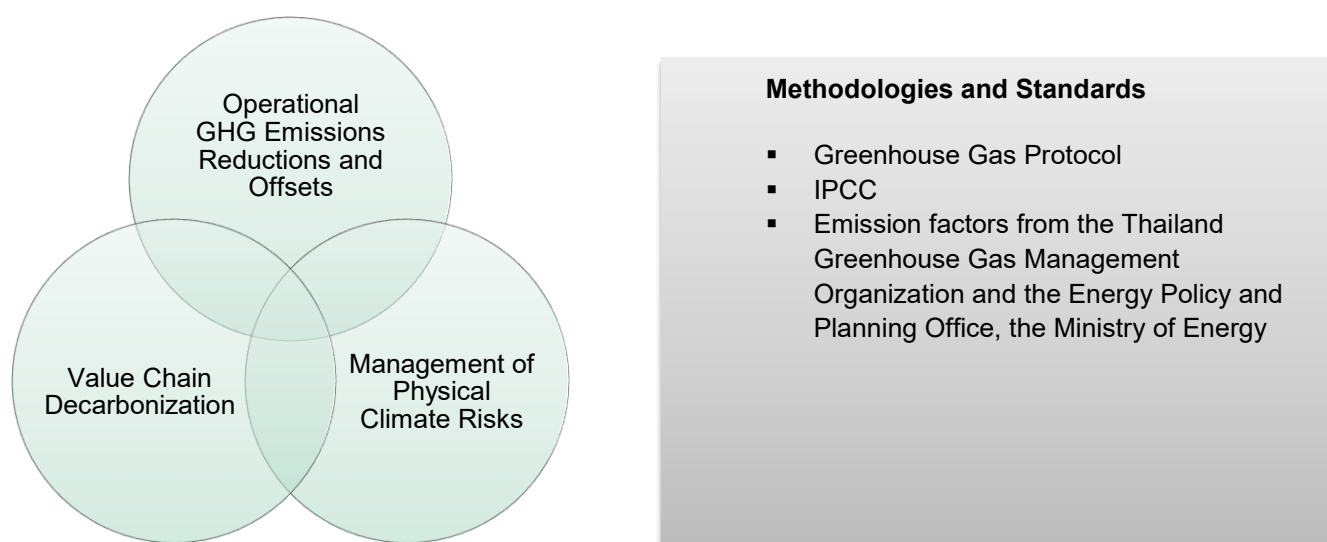
Table 5 Metrics and Targets (Baseline year – 2021)

Risk Type	2030 Sustainability Targets	Metrics and KPI Measurement
Transition risk	To be Carbon Neutral for the organization’s operation (Scope 1)	Achieve GHG reduction through improvement in energy efficiency by 45%

	and Scope 2) compared to the 2021 baseline.	▪ Achieve GHG reduction through renewable energy usage by 25% ▪ Achieve GHG reduction through adoption of green refrigerant by 15% ▪ Achieve GHG reduction through adoption of electric vehicles by 5% ▪ Offset remaining GHG emissions via carbon credits (5%) and carbon absorption (5%)
Physical risk	20% reduction in water withdrawals per net revenue compared to the 2021 baseline	• % of water withdrawals per net revenue

To strengthen the quality of its data collection and measurement such that the Company is able to accurately track and evaluate our climate performance against the metrics and targets set forth, several established methodologies and standards have been introduced to CP Aextra's environmental accounting system, as shown in **Figure 6**.

Figure 6 CP Aextra's Climate Focus Areas, Relevant Methodologies and Standards



Due to its business expansion activity, CP Aextra's GHG emissions for the past three years show an inevitable increasing trend (**Table 6**). The Company intends to gradually reduce the associated GHG emissions across its operations through the key initiatives outlined in CP Aextra's climate strategy framework as the Company progress towards its carbon neutral target by 2030 (**Table 7**).

Table 6 GHG Emission Data for CP Aextra

Performance	Unit	2020	2021	2022	2023
Target 2023 : Scope 1+2: 8% reduce emission (640,253.32Tons of CO2 eq.)					
Total Scope 1 and 2 GHG emissions	Tons of CO2 eq.	607,270.63	611,999.33	718,086.76	695,927.52
Target 2023 : Scope 1 : 4% reduction (<122,414.256 tons of CO2 eq.)					
Scope 1 GHG emissions	Tons of CO2 eq	53,907.17	84,163.25	146,753.65	127,514.85
Target 2023 : Scope 2 : 4% reduction (<545,676.16 tons of CO2 eq.)					
Scope 2 GHG emissions (Market based)	Tons of CO2 eq	553,363.46	527,836.09	571,333.11	568,412.67

Scope 2 GHG emissions (Location based)	Tons of CO2 eq	553,363.46	527,836.09	571,333.11	649,634.11
Scope 3 Target: 25% of total emission reduction aligning with SBTi requirements by 2030					
Other indirect Scope 3 GHG emissions	Tons of CO2 eq	57,540.03	58,943.72	6,876,080.64	7,822,410.04
Purchases of goods and services	Tons of CO2 eq	n/a	n/a	6,731,804.01	7,261,018.37
Capital goods	Tons of CO2 eq	n/a	n/a	n/a	540.00
Upstream transportation and distribution	Tons of CO2 eq	57,284.40	58,921.83	134,109.67	114,797.42
Downstream Transportation and distribution	Tons of CO2 eq	n/a	n/a	8,411.85	18,700.64
Business air travel	Tons of CO2 eq	255.63	21.89	1,755.11	724.11
GHG emissions intensity	Tons of CO ₂ eq./ million THB revenue	1.41	1.29	1.53	1.54

Remarks Scope 3 emissions for 2020 and 2021 covered two categories of emissions: upstream transportation and distribution, and business travel. In addition to the above-mentioned categories, the coverage of Scope 3 emissions in 2023 also included emissions from purchased goods and services, upstream and downstream transportation & distribution, business travel, employee commuting and downstream lease due to improved data collection methods

Table 7 Progress Against CP Aextra's Goals and KPIs

Our Goal	KPI Measurements	Progress in 2023	2023 Target	2030 Target
To achieve carbon neutral of the organization's operation by 2030	% emissions reduction from energy efficiency measures	2.43%	8%	45%
	% emissions reduction from renewable energy usage	10%	10%	25%
	% emission reduction from green refrigerant usage	2.58%	6%	15%
	% emission reduction from electric vehicle usage	0.23%	3%	5%
	% of emissions offset by carbon credit	n/a	n/a	5%
	% of emissions offset by carbon absorption initiatives	n/a	n/a	5%
To achieve 20 % reduction in water withdrawals per net revenue compared to the 2021 baseline	% of water withdrawals per net revenue	+26%	20% reduction	20% reduction