

Charoen Pokphand Group TCFD Report 2021

MAKING TODAY
A BETTER TOMORROW

*Task Force on Climate-Related Financial Disclosures



บริษัท เจริญโภคภัณฑ์ จำกัด



ซีพี...เพื่อความยั่งยืน



C.P. GROUP



TABLE OF CONTENTS



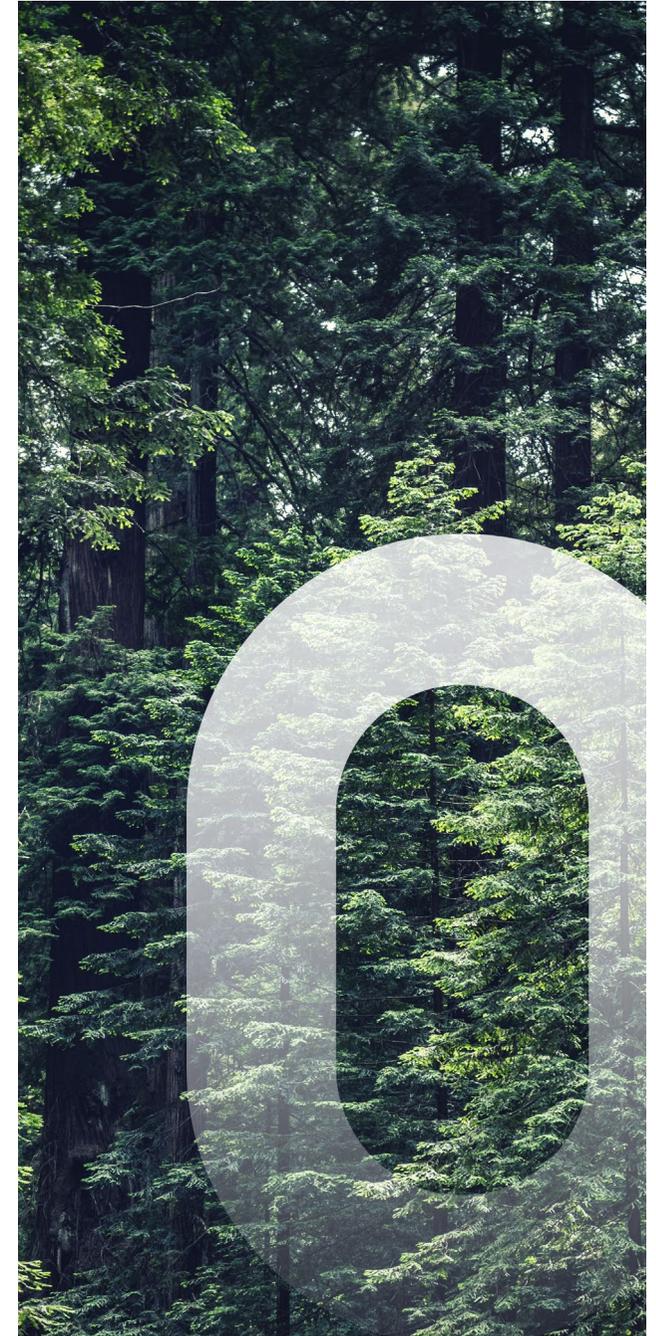
C.P. Group Climate Commitment

Climate change is a critical global challenge with significant devastating impacts to economy, society and the environment. Tackling the climate crisis requires full cooperation from all sectors from every country.

Charoen Pokphand Group (C.P. Group), as a private company operating in diverse manufacturing and services sectors, is aware of its role in the emissions of greenhouse gases and recognizes that it has a responsibility to tackle problems posed by climate change. Recognizing the urgency of the climate crisis, C.P. Group joined United Nations “Race to Zero” campaign and signed the “Business Ambition for 1.5°C Commitment Letter”, the global movement of leading companies aligning their businesses with the most ambitious aim of the Paris Agreement, to limit global temperature rise to 1.5°C above preindustrial levels and reach net-zero by 2050 for the best chance of avoiding the worst impacts of climate change.

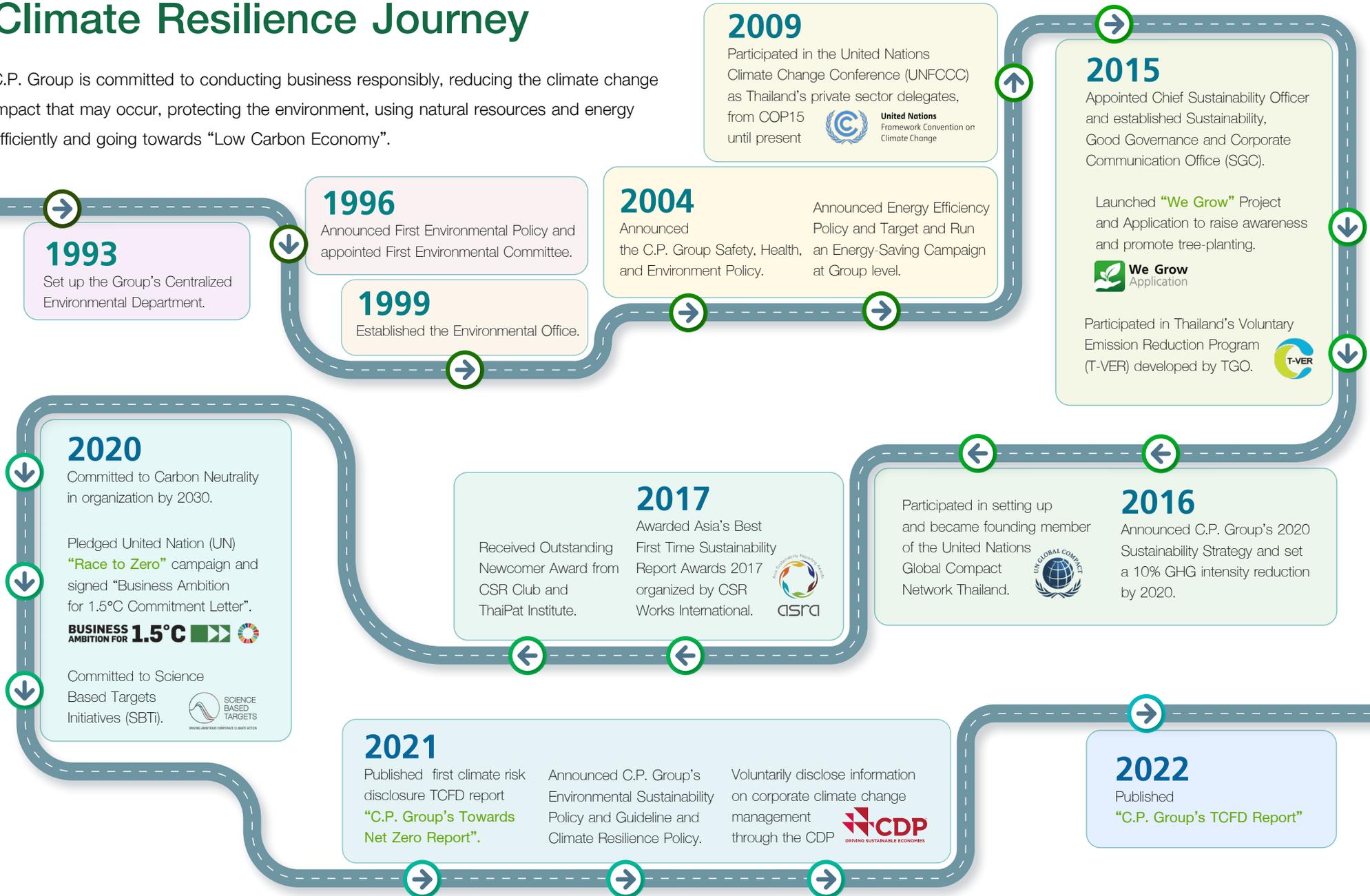
“CARBON NEUTRAL” Goal by 2030

C.P. Group has previously set an internal target to become a Carbon Neutral Organization by 2030, covering Scope 1 and 2 emissions. This goal has motivated greenhouse gas emissions reduction by expanding renewable energy programs, encouraging all employees, stakeholders and business partners to implement emission reduction programs, in order to minimize carbon emissions from the organization. Moreover, C.P. Group also committed to setting science-based emissions reduction targets in line with 1.5°C emissions scenarios, and to submit the targets to the Science Based Targets initiative (SBTi) for approval to ensure the strongest ambition and align with trajectories that lead to net-zero value chain emissions by 2050.



C.P. Group Climate Resilience Journey

C.P. Group is committed to conducting business responsibly, reducing the climate change impact that may occur, protecting the environment, using natural resources and energy efficiently and going towards “Low Carbon Economy”.



Governance

Charoen Pokphand Group has put in place a framework for climate change management across our entire supply chain.

We have established policies and targets that cover energy efficiency, renewable energy use, waste management, and plastic packaging use reduction. We further assess climate-related risks and opportunities, conduct scenario analysis according to the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) which is globally recognized for climate-related risk management from the perspective of financial institutions, and develop comprehensive risk management plans that include physical, technology, market, policy, legal, and reputational risks.

Charoen Pokphand Group has implemented the following core elements of TCFD recommended climate-related financial disclosures including Governance, Strategy, Climate Risk Management, and Metrics and Targets; which will be elaborated in this report.

In addition, the Group communicates our performance on climate change impact management and mitigation to our stakeholders through various channels. These include our Sustainability Report, the Communication on Progress to the UN Global Compact, and CDP's climate change disclosure program.

Under the guidance of the Group CEO and executives, C.P. Group has established the [2030 Sustainability Framework](#), covering 15 material sustainability issues and supported all 17 United Nations Sustainable Development Goals (SDGs).

C.P. Group has implemented the sustainability framework that drives the Group's operations and established the Sustainability, Good Governance and Corporate Communication Office (SGC Office) and SGC Operating Committee, which takes responsibility for outlining management approaches, monitoring, verifying, and ensuring confidence that C.P. Group's overall sustainability performance is efficient and in line with its targets and vision.

Core Element of TCFD Recommended Climate-Related Financial Disclosures



GOVERNANCE

Established management committees at the Group and Business Group levels to govern climate-related risks and opportunities.

STRATEGY

Implemented a business strategy for climate change management that aligns with the Group's financial strategies and plans

RISK MANAGEMENT

Integrated risk and opportunity assessment results, and the operational contexts of each country, into climate change management approaches

METRICS & TARGETS

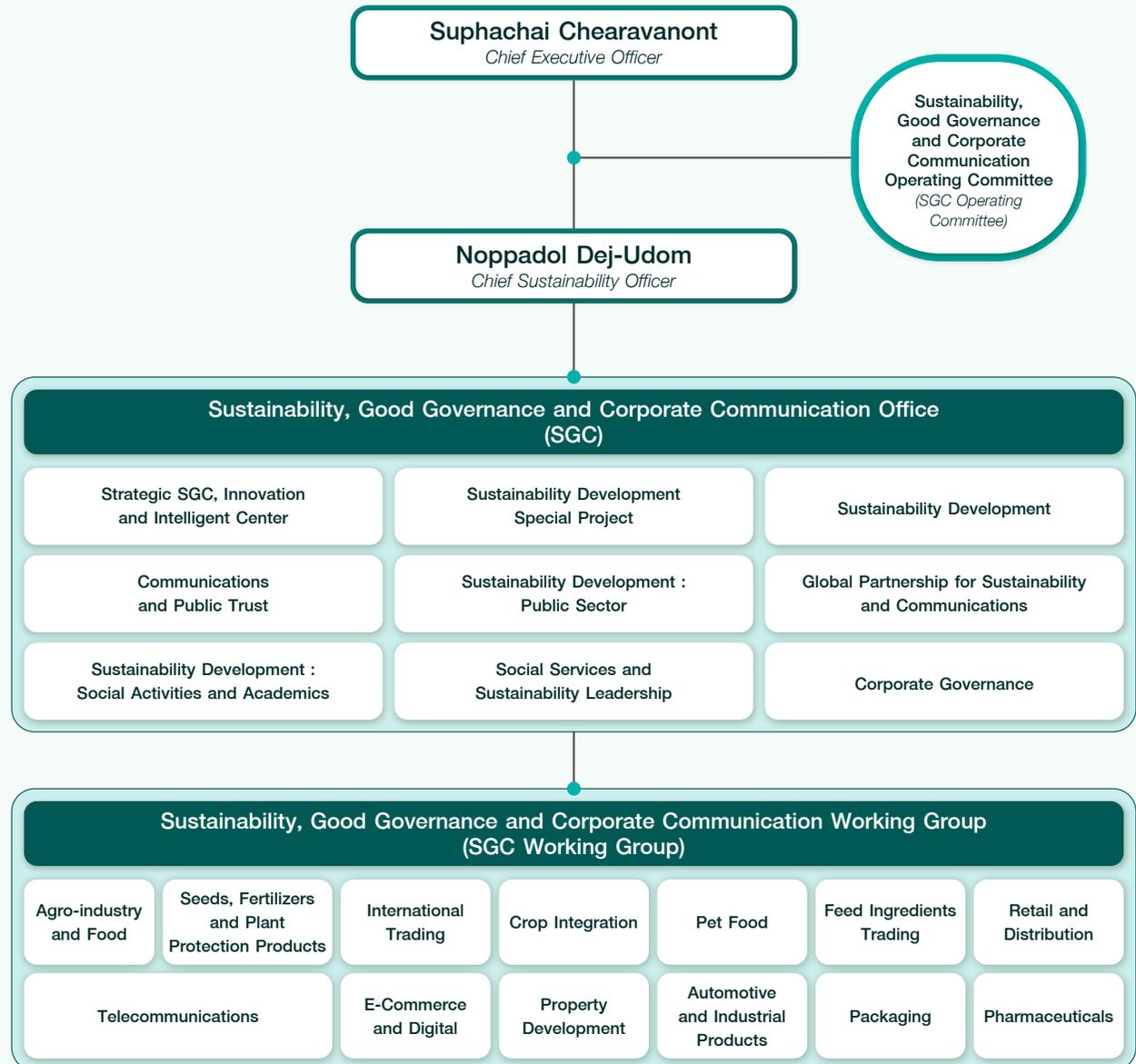
Adopted indicators and targets to assess and manage climate related risks and opportunities that align with the Group's financial risk management

The CEO chairs the “SGC Office” and “SGC Operating Committee” which has direct responsibility for climate-related issues. The CEO also acts as the climate change champion to facilitate collaboration among all Business Units to integrate climate change management, climate risks and opportunities into the strategy.

Furthermore, C.P. Group’s CEO, CSO and the Board have joint responsibility to review, monitor and guide C.P. Group 2030 Sustainability Goals, especially strategy on climate issues across the businesses. Sustainability Development Team under the SGC Office (SD-SGC) is assigned by CEO, CSO and SGC Operating Committee to drive, monitor, review and support C.P. Group’s 2030 sustainability framework, policies, guidelines, and strategic targets including climate change issues.



C.P. GROUP Sustainability Governance Structure



C.P. Group’s SD-SGC team monitors and analyzes the progress on energy consumption, energy efficiency, GHG emissions, GHG reduction on a monthly basis through our global reporting system. The performance of all sustainability issues, including climate-related data is reviewed by CSO, CEO, and SGC Committee and the Board at least once a year.

Climate change has been embedded into C.P. Group strategies, policies and guidelines to provide guidance to all employees and inform all stakeholders about C.P. Group’s commitment on climate-related issues. These strategies, [policies and guidelines](#) are publicly available on C.P. Group’s website at

www.cpgroupglobal.com/sustainability.

Strategy

C.P. Group has set up a climate change management framework covering our entire supply chain including management commitment, assessment of risks, opportunities, and impacts, defining targets and policies, implementation of action plans, monitoring results, and communicating with stakeholders.

To understand the impact of climate change on our businesses, C.P. Group has assessed and identified the risks and opportunities throughout the value chain (Direct operations, Upstream, and Downstream) including short-, medium-, and long-term risks and opportunities; their financial, strategic, and overall business impacts; and evaluated the company's resilience in coping with various climate scenarios according to the recommendations of the TCFD, and develop comprehensive risk management plans.

The assessment period is designed in line with the Group's Sustainability Framework, Climate Risk Assessment and the Risk Management to assess the risks and opportunities of the organization annually, or when there are significant environmental / climate-related changes to the organization.

Term Horizons

Short	< 3 Years
Medium	3-10 Years
Long	> 10 Years



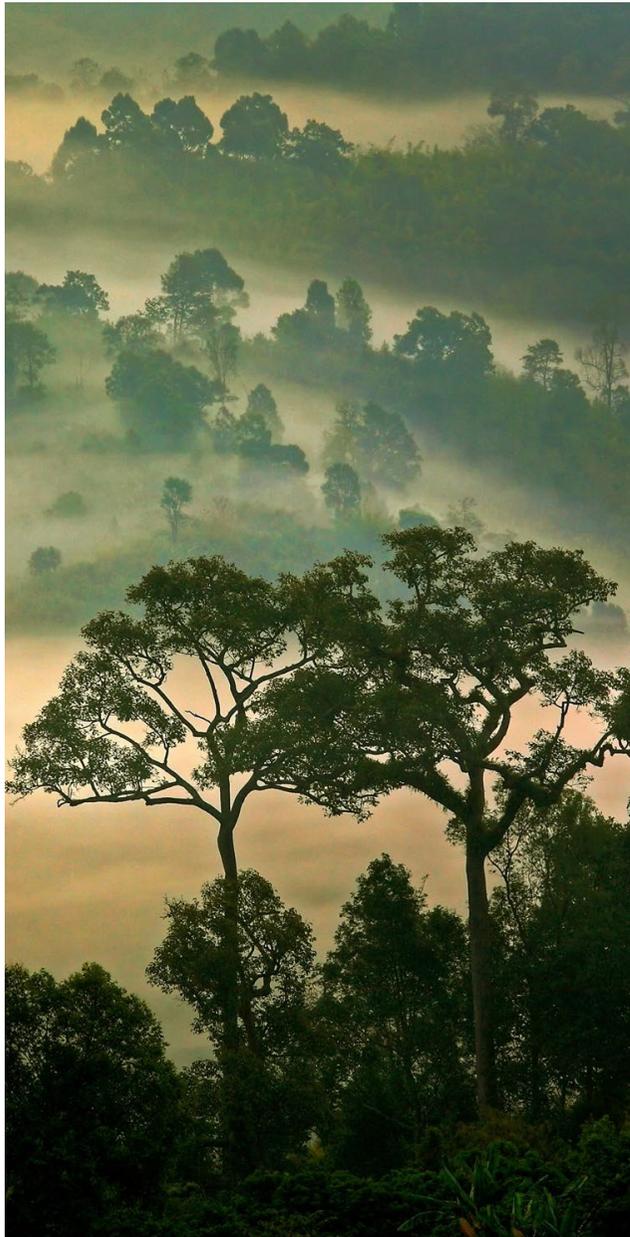


C.P. Group regularly assesses the impacts from these physical risks and plan for adaptation and mitigation actions and roadmaps, as well as prepare for future events from those risks that might affect our operations and value chain.

C.P. GROUP Climate-Related Risks and Opportunities

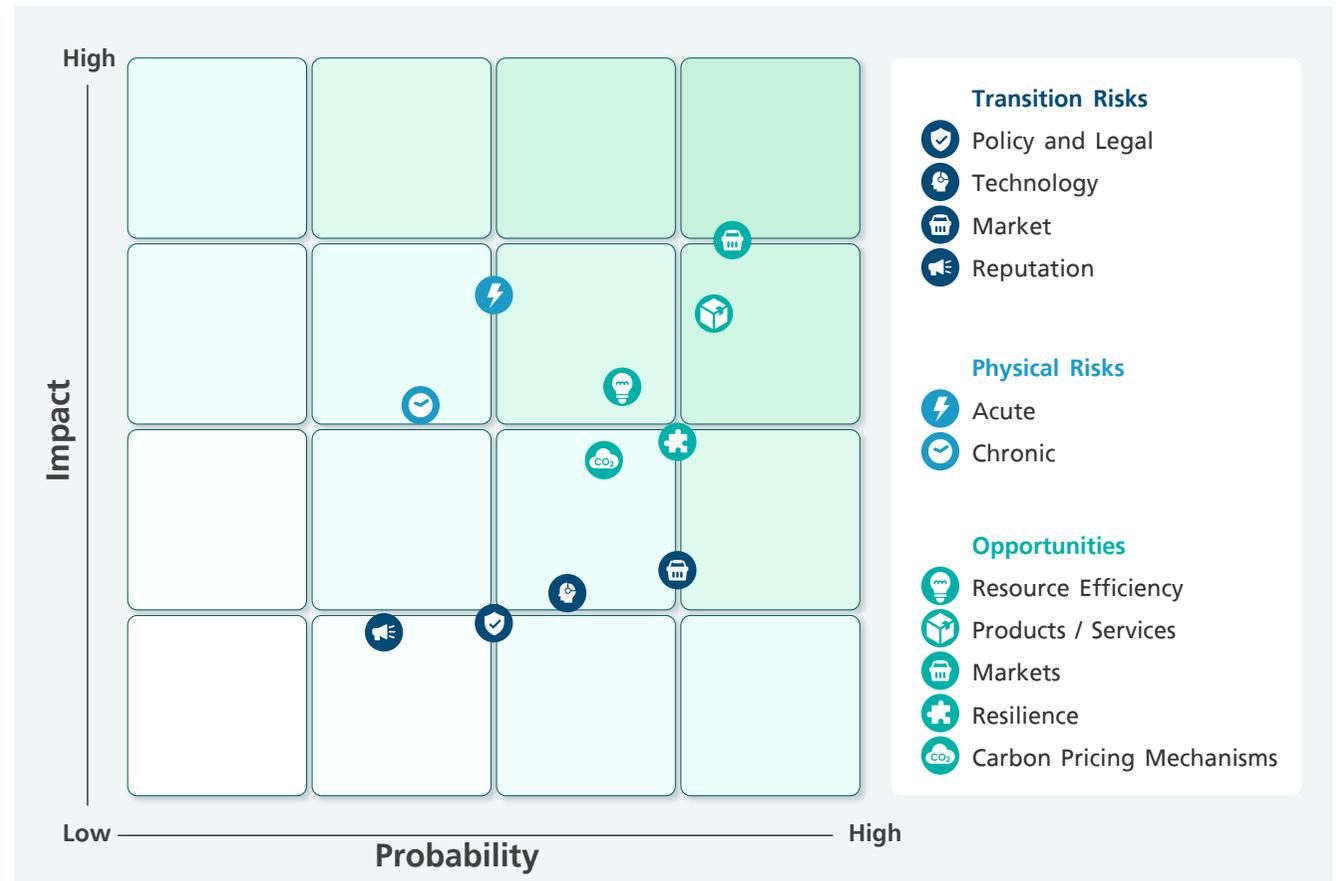


Climate-Related Risks and Opportunities



The climate-related risk assessment helps C.P. Group understand the impacts of climate-related risks and opportunities on businesses, recognize potential financial impacts on revenues, expenditures, values of assets and liabilities, and capital and financing, assign ownership to drive specific actions around them and take relevant steps to address those risks and opportunities.

Assessment Matrix : C.P. Group Climate-Related Risk, Opportunity and Potential



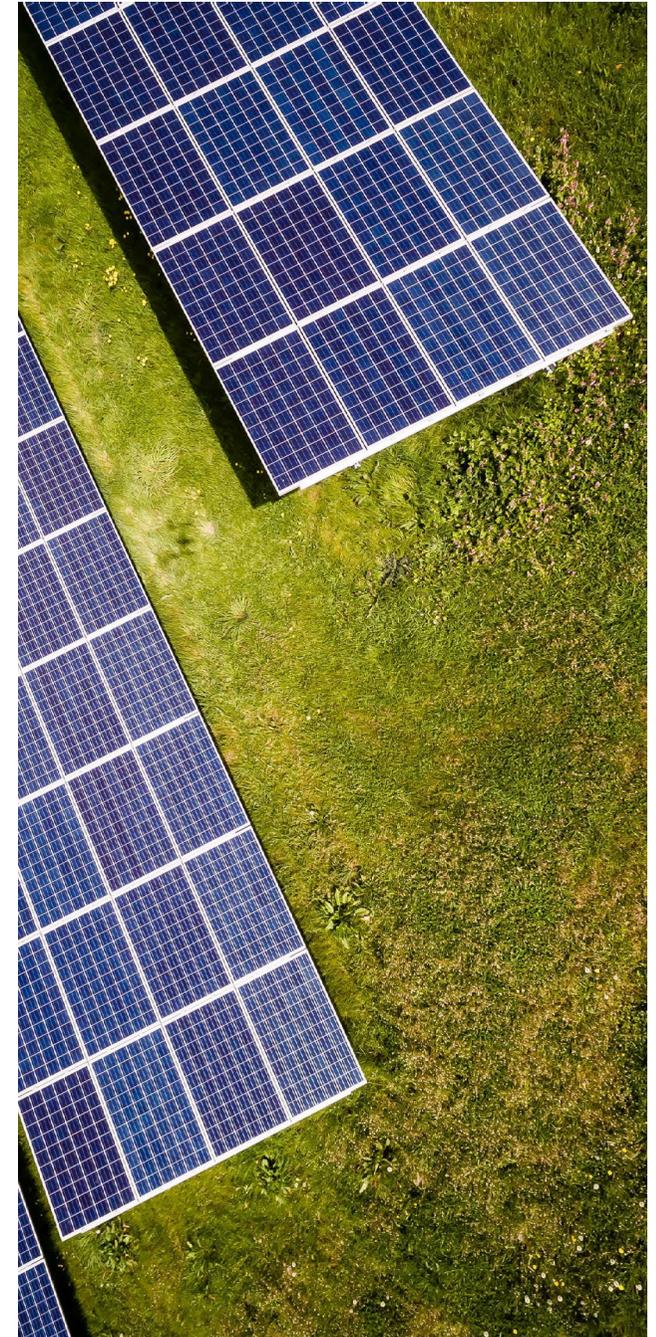
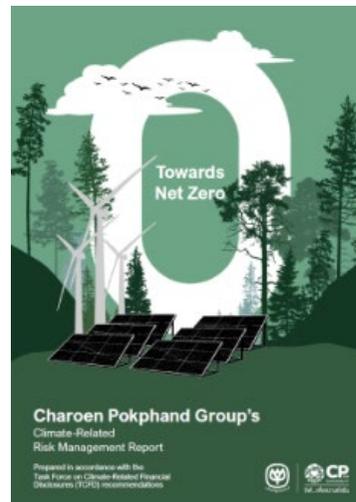
Scenario Analysis

C.P. Group uses scenario analysis to understand climate-related risks and opportunities for its operations and assess how climate change may affect the businesses, covering both transition and physical risks.

There are many climate change scenarios conducted by various organizations. The most commonly used scenarios are developed by the Intergovernmental Panel on Climate Change (IPCC), which mainly focuses on physical scenarios, and the International Energy Agency (IEA) which focus on transition scenarios. Using both types of scenario analysis allows C.P. Group to account for full range of implications of climate change to inform suitable short-term, medium-term to long-term strategic thinking, assess and incorporate climate-related risks and opportunities into an organization's broader risk management strategy, as well as identify financial impact from those scenarios.

The impacts of climate-related risks and opportunities on businesses were assessed using 2DS, IEA 450, NDCs, RCP2.6 and RCP8.5 scenarios. The results of this analysis illustrate the importance of climate impacts to our businesses, and further motivate our business commitment toward climate stewardship. Based on these results, we develop action plans to reduce GHG emissions, mitigate, and adapt to the impacts of climate change.

Further details are explained in our [C.P. Group's Climate-Related Risk Management Report](#).



C.P. GROUP Climate-Related Risks and Potential Financial Impact

Risk Type	Climate-Related Risks	Time Horizon	Potential Financial Impact
Transition Risks	Policy and Legal		
	<ul style="list-style-type: none"> Carbon pricing mechanisms, Carbon Tax, Cap-and-trade Enhanced emissions reporting obligations Mandates on and regulation of existing products and services Exposure to litigation Increasingly rigorous actions by national government to reduce GHG emissions Increased costs associated with carbon-intensive products and minimizing embodied carbon in the supply chain, especially if commodities are sourced overseas Increased expenditure associated with the use of non-renewable energy 	Medium-term	<ul style="list-style-type: none"> Increased operating costs from mandatory climate change regulations Increased operating cost for high carbon activities (e.g. higher compliance costs, increased insurance premiums) Asset impairment, early retirement of existing assets due to policy changes Increased costs, reduced demand for products and services resulting from fines and judgments Threats to securing license to operate for carbon-intensive activities Emerging concern about liabilities
	To minimize the impact from emerging regulation risks which include the risk from policies and regulations change, C.P. Group will need to set and apply internal carbon pricing and platform, climate-related and low carbon certification and verification to ensure that our operations are complied with those changes. Failure to mitigate this risk may impact our operating costs, cash flow, asset impairment, early retirement of existing assets due to policy and regulation changes, financial position, business and reputation.		
	Technology		
	<ul style="list-style-type: none"> Cost to transition to lower emission technologies Unsuccessful investment in new technologies New technologies that disrupt markets 	Short-term	<ul style="list-style-type: none"> Increased cost for developing lower emission technologies Decreased revenues Increased energy consumptions costs due to greater electrification Development and use of renewable energy, energy efficiency
	To achieve the target to become a Carbon Neutral Organization by 2030, C.P. Group will need to shift from the energy and electricity consumption towards low emission energy and renewable resources, and we plan to increase the renewable consumption to 85% by 2030. We see the opportunities in development of new products such as renewable energy and renewable electricity which not only can be used for emission reduction in the direct operations, but also increase our revenues through access to new and emerging markets. Failure to develop and adopt new technologies and innovation may lead to the organization falling behind the competition, unable to meet future regulations and consumer preference for products and services with stronger environmental performance.		
Market			
<ul style="list-style-type: none"> Changing customers behavior towards low carbon products Uncertainty on market trend Increased demand for energy efficient, lower-carbon products and services which might need more verification and third-party certification Reduced market demand for carbon-intensive products and services 	Medium-term	<ul style="list-style-type: none"> Reduced demand for certain products and services due to shift in customers preferences Increased production costs due to changing input prices (such as energy) Increased raw material costs Decreased in revenue 	
C.P. Group is implementing more environmental, low-carbon and sustainable labels and certifications, replacing old equipment and investing in high-technology and low-carbon emission machinery, increasing R&D budget for low-carbon, environmentally-friendly and sustainable products and services. As a result, financial implication of market risks from customer behavior changes are estimated to be no more than 5% of the Group's revenue. Failure to keep up with evolving consumer and market preferences may lead to negative impacts on overall business performance and financial impact.			
Reputation			
<ul style="list-style-type: none"> Growing expectation from stakeholders on climate responsibility and awareness on climate issues Shifts in consumer preferences Failure to meet stakeholders and consumers need 	Short-term	<ul style="list-style-type: none"> Reduced revenues, reputation and brand value Risk of loss of trust and confidence in management 	
C.P. Group's reputation and brand values are our key asset. Meeting customers' preference towards low carbon economy can have significant impact to C.P. Group's. Failure to deliver on our promises might damage the corporate reputation and trust as a sustainability-minded business, therefore, we have set clear KPIs, strategies and action plans in order to achieve those ambitious goals.			

C.P. GROUP Climate-Related Risks and Potential Financial Impact

Risk Type	Climate-Related Risks	Time Horizon	Potential Financial Impact
Physical Risks	Acute		
	<ul style="list-style-type: none"> Increased severity and frequency of extreme weather events such as floods, droughts, cyclones, higher temperatures, change in precipitation Increased likelihood and severity of wildfires Operational disruption 	Short- to medium-term	<ul style="list-style-type: none"> Increased raw material costs Increased operating costs Decreased revenues and asset values Direct damage to assets and property, infrastructure malfunction Indirect impacts from supply chain disruption
	<p>If we cannot limit the global temperature increase to well-below 2°C or not to exceed 1.5°C, then we would face significant changes in precipitation patterns and extreme variability in weather patterns. These factors can adversely impact the continuity of our operations and the well-being of our employees, customers, and the communities which our operations depend on. C.P. Group has assessed the impacts from these acute risks and plan for mitigation actions covering our own operations as well as along the value chain.</p>		
	Chronic		
<ul style="list-style-type: none"> Long-term shifts in climate patterns Changes in precipitation patterns and extreme variability in weather patterns Higher frequency of severe weather events Increasing extreme temperature, hot days, sea level rise, coastal erosion, water scarcity, drought, floods Increased spread of infectious diseases 	Medium- to long-term	<ul style="list-style-type: none"> Increased business interruption and damage across operations and supply chains Increased operating costs and Increased insurance claims Decreased revenues due to reduced production capacity and disrupted supply chain of raw materials and reduces asset values Reduced agricultural productivity and availability and quality of raw materials. Impacts on terrestrial and aquatic ecosystems 	
<p>According to the IPCC 5th Assessment Report (AR5), the global temperature is likely to increase and exceed 1.5°C by the end of the 21st century, accompanied by more frequent extreme weather events. From the review, studies show that a 2°C rise in global average temperature can lead to a 3% loss in agricultural production, while change in precipitation pattern can also cause water stress and water shortage, with some areas suffering up to 30% shortage of water. Chronic risks can have financial implications for our businesses, from reduced sales revenue/output, increased capital and operating expenses, more frequent business interruption, damages across operations and supply chains with consequences for the availability, quality, and cost of raw materials and threaten our ability to ensure food security throughout the value chain.</p>			

Climate scenario analyses provide C.P. Group a better understanding of potential risks and opportunities in the short, medium, and long term. The Group must develop appropriate strategies and strengthen its businesses by preparing human, financial, and other resources, including technologies, to take advantage of the opportunities and mitigate the adverse impacts of the risks.

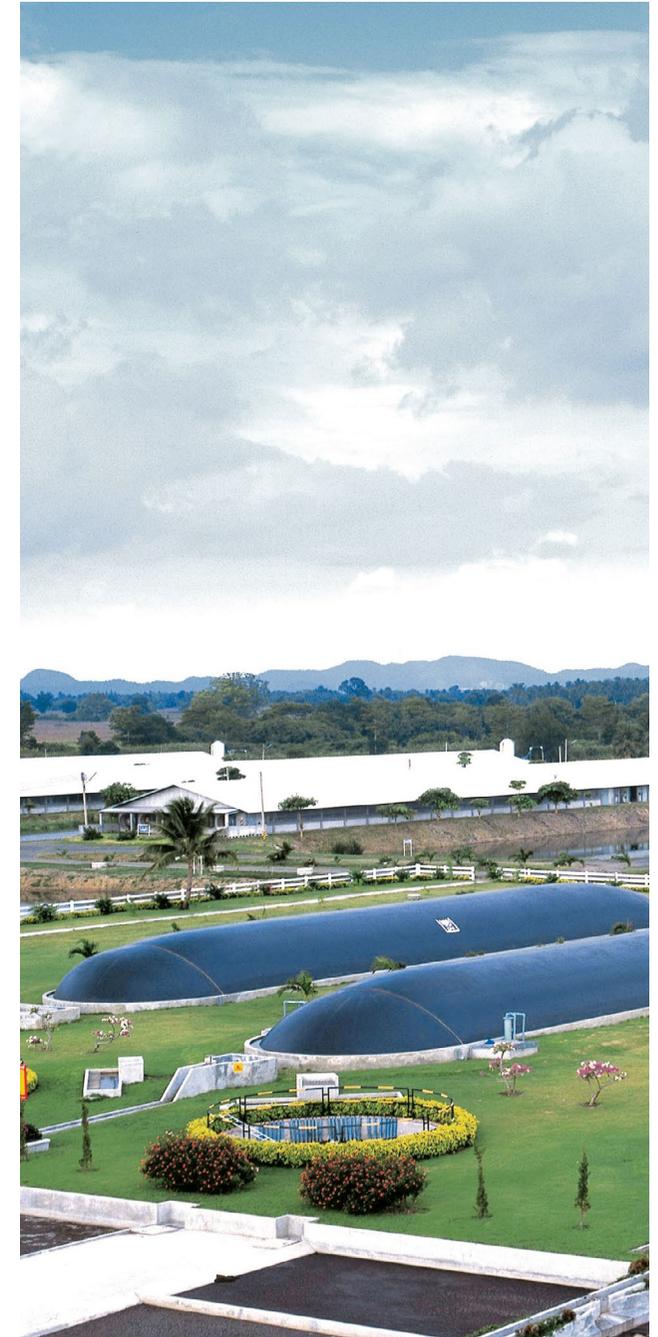


C.P. GROUP Climate-Related Opportunities and Potential Financial Impact

Efforts to mitigate and adapt to climate change can also provide opportunities for businesses. Examples of climate-related opportunities include resource efficiency, energy source, products/services, markets and resilience.

Opportunities Type	Climate-Related Opportunities	Time Horizon	Potential Financial Impact
Resource Efficiency	<ul style="list-style-type: none"> Use of more efficient production and distribution processes and more sustainable raw material Use of more efficient mode of transport Reduce waste and use circular economy solutions Reduced water consumption Improve resource and energy efficiency 	Long-term	<ul style="list-style-type: none"> Reduced operating costs, including energy costs Increased production capacity Increased revenues
Energy Source	<ul style="list-style-type: none"> Use of low emission energy sources such as solar, wind, hydro or biofuels Use of new low-emission technologies Participation in carbon markets, carbon reduction mechanisms 	Long-term	<ul style="list-style-type: none"> Reduced operation costs Reduced exposure to volatility of prices of fossil fuels Return on investment on low emission technologies Enhanced competitive advantage through energy cost saving and alignment with customer preferences
Products And Services	<ul style="list-style-type: none"> Development of new low-emission products and services Shift in consumer preferences Development of new products and services through innovation and R&D 	Medium-term	<ul style="list-style-type: none"> Improve competitive position on shifting consumer and producer preferences such as low carbon products, carbon footprint labeling Increased revenue from demand for low-emission products and services Increased brand value
Markets	<ul style="list-style-type: none"> Organizations that proactively seek opportunities in new markets may be able to diversify their activities and better position themselves for the transition to a lower carbon economy. 	Medium-term	<ul style="list-style-type: none"> Increased revenues through access to new markets Increased reputation and brand value
Resilience	<ul style="list-style-type: none"> Organization capability to respond to transition risks and physical risks Participate in renewable energy programs Adopt energy efficiency measure Join climate mitigation and adaptation projects and activities 	Long-term	<ul style="list-style-type: none"> Increased revenue through new products and services related to ensuring climate resilience Increased market valuation Increased organization reputation Increased reliability of supply chain and ability to operate under various conditions

As the world moves towards low carbon economy to limit the global warming to 1.5°C, we, the private sectors, are among the key factors that can help achieve that goal. We need all applicable climate solutions to reach these challenging goals.



C.P. GROUP Context-specific Assessment of Physical Climate Risk Impacts in key business sectors

Risk Type	Climate-Related Physical Risks	Adaptation Plan and Actions*
Agro-Industry and Food	<ul style="list-style-type: none"> ● Increased severity and frequency of extreme weather events such as storms, heat waves, floods, droughts, cyclones, higher temperatures, change in precipitation which can affect production quantity and the cost of major agricultural raw materials such as corn and soybeans ● Lead to damage, operational downtime/disruption, and lost production and also increased raw material costs, operating costs as well as increase indirect impacts from supply chain disruption ● Long-term shifts in climate patterns such as changes in precipitation patterns, extreme variability in weather patterns, higher frequency of severe weather events, increasing extreme temperature, hot days, sea level rise, coastal erosion, water scarcity, drought and floods can have chronic impacts on agricultural productivity which led to lower agricultural productivity, reduced yields and increase in the cost of agricultural raw material as well as, increase crop damage and livestock losses ● Affected the efficiency of supply chain which resulted in decreased revenues due to reduced production capacity and disrupted supply chain of raw materials and reduces asset values, reduced agricultural productivity and availability and quality of raw materials, increased business interruption and damage across operations and supply chains 	<ul style="list-style-type: none"> ● Improve infrastructure to cope with events that might occurred from climate change ● Develop near-term and mid-term disaster and risk management plans ● Developed a raw material forecasting system to be used for sourcing planning ● Support and engage with stakeholders to develop adaptation action plans along value chain ● Develop long-term disaster and risk management plans ● Tree plantation to minimize run-off related soil erosion and destabilization of slopes ● Explore new sources of renewable energy and sustainable raw materials ● Invest in technology and innovation to cope with raw material productivity and availability issues ● Increase awareness and capacity building along value chain
Retail and Distribution	<ul style="list-style-type: none"> ● Increased disruption to production processes and services provided by stores ● Direct damage to assets and property, infrastructure malfunction and increased expenses for restoring equipment damaged ● Decreased customers access to stores from flooding and related events thus decreased income due to fewer sales at stores ● Increased agricultural raw material costs due to shortage of agricultural products and raw materials ● Indirect impacts from supply chain disruption ● Increased business interruption and damage across operations and supply chains ● Increased interruption to product delivery to stores ● Decreased revenues due to reduced production capacity and disrupted supply chain of raw materials and reduces asset values 	<ul style="list-style-type: none"> ● Develop near-term and mid-term disaster and risk management plans ● Closely monitor weather conditions and conduct a risk assessment of the situation so that store staff can prepare to move equipment and goods to a safe location ● Improve infrastructure to cope with events that might occurred from climate change such as high walls, floor designs, doors that can hold against the force of water, piping system and pumps ● Provide care to affected staff according to the Company's welfare services, provide survival kits to others who are affected and support the surrounding community ● Develop long-term disaster and risk management plans ● Explore new sources of renewable energy and sustainable raw materials ● Invest in technology and innovation to cope with climate-related issues
Telecommunication & E-Commerce and Digital Business	<ul style="list-style-type: none"> ● Increased cost of repairing or replacing damaged equipment and cost of preventive measures or new technologies ● Increased equipment and infrastructure damages due to climatic conditions, such as damages to the cooling system due to rising temperatures, may cause business disruption ● Increased cost for replacement or repair of damaged assets, especially electrical equipment and components that may be damaged upon contact with water ● Temperature rise may shorten equipment life spans ● Reduced efficiency of equipment such as batteries in network facilities causing increase in replacement frequency ● Increased operating costs, insurance claims and reduced asset values ● Decreased revenues due to reduced production capacity and disrupted supply chain ● Impact on accessibility (i.e. the asset may become temporarily stranded) and reduced employee and customer access to stores, offices and network stations ● Impact on the safety and ability for employees to come to work 	<ul style="list-style-type: none"> ● Develop near-term, mid-term and long-term disaster and risk management plans ● Undertake asset level impact assessment to identify and quantify the risks from disaster such as flooding and use the information to develop a hazard mitigation plan ● Implementation of disaster and climate-related event forecasting, early warning and monitoring systems to ensure adequate action within a reasonable time to minimize losses ● Improve infrastructure to cope with events that might occurred from climate change such as hard wall such to prevent ingress of storm water into critical areas ● Tree plantation to minimize run-off related soil erosion and destabilization of slopes ● Develop stakeholder capacity building including training, awareness and capacity building within the communities for disaster management

Climate Risk Management

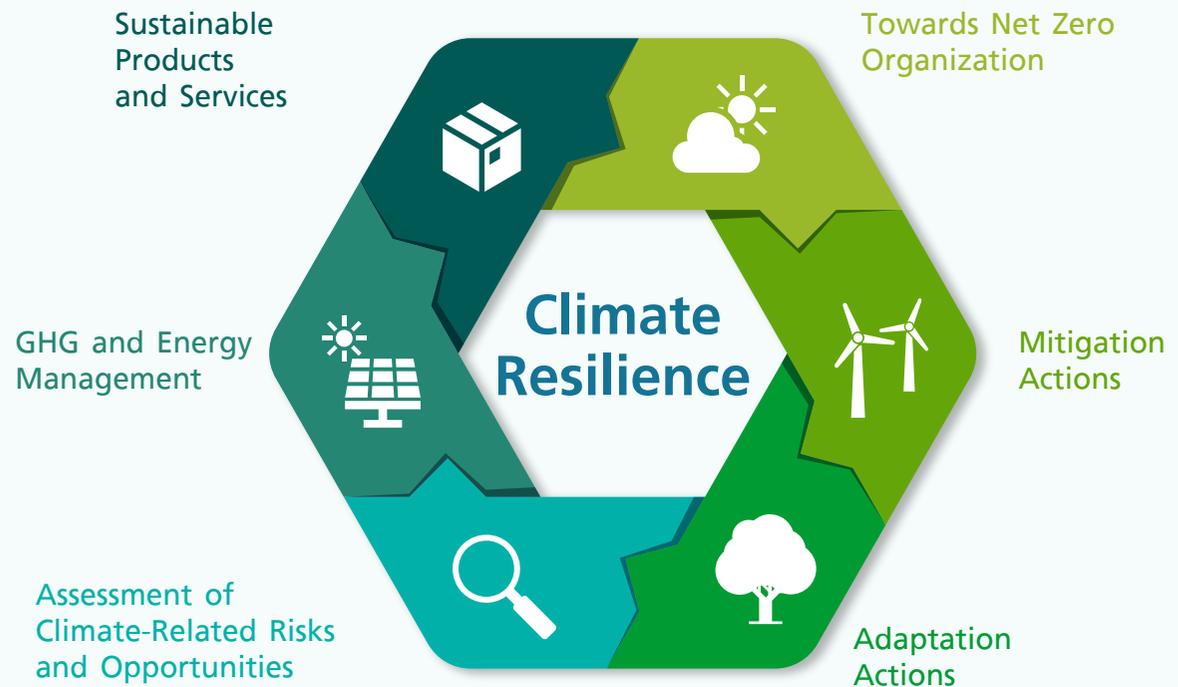
In addition, the Group communicates our performance on climate change impact management and mitigation to stakeholders through various channels including our sustainability report, the Communication on Progress to the UN Global Compact, and CDP's climate change disclosure system.



C.P. Group has identified the short-, medium-, and long-term climate-related risks and opportunities. It has also assessed the probability and impacts of those risks and opportunities to the group. These climate-related issues have been integrated into C.P. Group's Sustainability Framework and Climate Change Management.

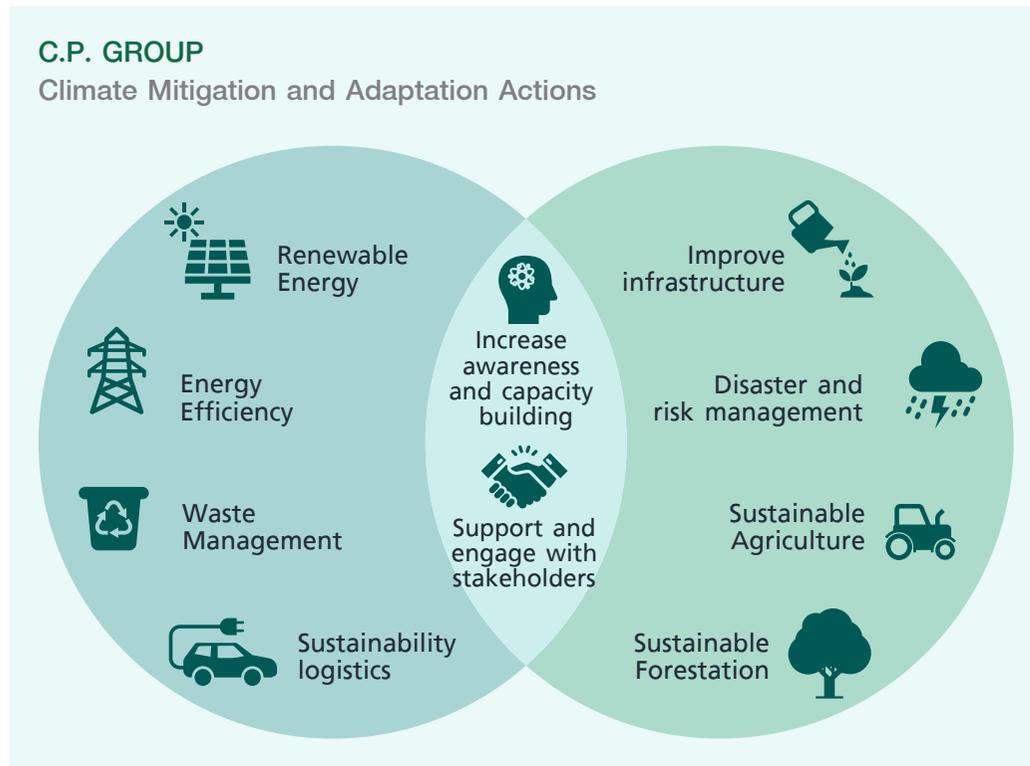
C.P. Group has in place a framework for managing climate change that covers our entire supply chain. We determine policies and targets that encompass energy efficiency, renewable energy use, waste management, and reductions in plastic packaging. From the Group's climate risks and opportunities assessment, we develop comprehensive risk management plans as well as establish [C.P.Group Climate Resilience Management Approaches](#).

C.P. GROUP Climate Resilience Management Approaches



Mitigation and Adaptation Actions

Severe climate change may affect business operations, if resources are used inefficiently or are not prepared for impacts such as severe droughts, extreme weather. C.P.Group has taken action to mitigate the impacts of climate change through various projects and activities, including Mitigation Actions and Adaptation Actions.



Mitigation Plans and Actions	Adaptation Plans and Actions
Reduce GHG emission from operations	Support and engage with stakeholders to develop adaptation action plans
Improve energy efficiency e.g. <ul style="list-style-type: none"> • Cogeneration System • High Efficiency Chiller • Waste Heat Recovery and Utilization • High Efficiency Lighting 	Increase awareness and capacity building along value chain
Increase renewable energy use e.g. <ul style="list-style-type: none"> • Solar Energy • Wind Energy • Biomass Energy • Biodiesel, Biomethane 	Promote regenerative agriculture and Nature-Based Solution projects <ul style="list-style-type: none"> • Reducing Emissions from Livestock • Good Fertilization Practice • Carbon Sequestration
Support stakeholders to mitigate and reduce GHG emission along value chain	Develop disaster and risk management plans
Reduce waste in supply chain <ul style="list-style-type: none"> • GHG Capture and Utilization • Production of Compost from organic waste • Recycling 	Improve infrastructure to cope with events that might occurred from climate change
Promote sustainability logistics <ul style="list-style-type: none"> • High Speed Rails Systems • Mass Rapid Transit Project • Electric Vehicles & Charging Stations • Lightweight Pallets • Fuel Switch 	Promote sustainable forestation and reforestation <ul style="list-style-type: none"> • Sustainable Forestation • REDD+ • Zero Deforestation

C.P. GROUP Climate-Related Risks and Adaptation Plan

Risk Type	Climate-Related Risks	Adaptation Plan and Actions*
Transition Risks	<p>Policy and Legal</p> <ul style="list-style-type: none"> ● Increased operating costs from mandatory climate change regulations ● Asset impairment, early retirement of existing assets due to policy changes ● Increased costs, reduced demand for products and services resulting from fines and judgments ● Emerging concern about liabilities 	<ul style="list-style-type: none"> ● To minimize the impact from emerging regulation risks which include the risk from policies and regulations change, C.P. Group need to follow national and international laws and regulations continuously and closely, set and apply internal carbon pricing and platform ● Increase climate-related and low carbon certification and verification to ensure that our operations are complied with those changes ● Timeframe = 5-10 years
	<p>Technology</p> <ul style="list-style-type: none"> ● Cost to transition to lower emission technologies ● Unsuccessful investment in new technologies ● New technologies that disrupt markets ● Increased cost for developing lower emission technologies ● Decreased revenues ● Increased energy consumptions costs due to greater electrification 	<ul style="list-style-type: none"> ● Shift from the energy and electricity consumption towards low emission energy and renewable resources, and we plan to increase the renewable energy consumption to 75% by 2030 ● Develop new products such as renewable energy and renewable electricity which not only used for emission reduction in the direct operations, but also increase our revenues through access to new and emerging markets ● Timeframe = 5-10 years
	<p>Market</p> <ul style="list-style-type: none"> ● Uncertainty on market trend ● Increased demand for energy efficient, lower-carbon products and services which might need more verification and third-party certification ● Reduced demand for certain products and services due to shift in customers preferences ● Increased production costs due to changing input prices (such as energy, raw materials) 	<ul style="list-style-type: none"> ● Implement more environmental, low-carbon and sustainable labels and certifications, replacing old equipment and investing in high-technology and low-carbon emission machinery, increasing R&D budget for low-carbon, environmentally-friendly and sustainable products and services ● Support stakeholders to mitigate and reduce GHG emission ● Promote sustainability logistics (such as Electric Vehicles, Fuel Switch e.g.) ● Promote regenerative agriculture and Nature-Based Solution projects (Reducing Emissions from Livestock, Good Fertilization Practice, e.g.) ● Timeframe = 5-10 years
	<p>Reputation</p> <ul style="list-style-type: none"> ● Growing expectation from stakeholders on climate responsibility and awareness on climate issues ● Reduced revenues, reputation and brand value if fail to meet stakeholders and consumers need 	<ul style="list-style-type: none"> ● Reduce GHG emission from operations, products and services ● Increase awareness and capacity building along value chain ● Promote sustainable forestation and reforestation (Sustainable Forestation , Zero Deforestation e.g.) ● Timeframe = 5-10 years

* Adaptation Plan and Actions to be completed by 2030

C.P. GROUP Climate-Related Risks and Adaptation Plan

Risk Type	Climate-Related Risks	Adaptation Plan and Actions*
<p>Physical Risks</p>	<p>Acute</p> <ul style="list-style-type: none"> ● Increased severity and frequency of extreme weather events such as floods, droughts, cyclones, higher temperatures, change in precipitation ● Increased raw material costs ● Increased operating costs ● Decreased revenues and asset values ● Direct damage to assets and property, infrastructure malfunction ● Indirect impacts from supply chain disruption 	<ul style="list-style-type: none"> ● Improve infrastructure to cope with events that might occurred from climate change ● Develop near-term and mid-term disaster and risk management plans ● Support and engage with stakeholders to develop adaptation action plans along value chain ● Timeframe = 3-5 years
	<p>Chronic</p> <ul style="list-style-type: none"> ● Changes in precipitation patterns and extreme variability in weather patterns ● Higher frequency of severe weather events ● Increasing extreme temperature, hot days, sea level rise, coastal erosion, water scarcity, drought, floods ● Increased business interruption and damage across operations and supply chains ● Increased operating costs and Increased insurance claims ● Decreased revenues due to reduced production capacity and disrupted supply chain of raw materials and reduces asset values ● Reduced agricultural productivity and availability and quality of raw materials 	<ul style="list-style-type: none"> ● Develop long-term disaster and risk management plans ● Improve infrastructure to cope with events that might occurred from climate change ● Explore new sources of renewable energy and sustainable raw materials ● Invest in technology and innovation to cope with raw material productivity and availability issues ● Increase awareness and capacity building along value chain ● Timeframe = 10 years

* Adaptation Plan and Actions to be completed by 2030



Metrics and Targets

C.P. Group supports the Paris Agreement and UN “Race to Zero” campaign, commits to set Science Based Targets (SBT) and announced to become a Carbon Neutral Organization by 2030. The Group requires all business units in all countries to set a common goal to achieve carbon neutrality from operations owned or controlled by the company by the year 2030.

Given the challenge of the climate crisis today, C.P. Group recognizes the opportunity to inspire change and raise the level of ambition for the next phase of our climate commitment. The Group is firmly committed to reducing both direct and indirect GHG emissions, particularly through expansion of renewable energy and reduction of fossil fuel-based energy. We also look beyond the scope of our operations to support external GHG reduction mechanisms and initiatives, such as prioritizing procurement of low-carbon products and services.

C.P. Group’s 2021 Climate Performances and progress can be found in our [Sustainability Report 2021](#) and [Charoen Pokphand Group GRI & SASB Content Index Report 2021](#)

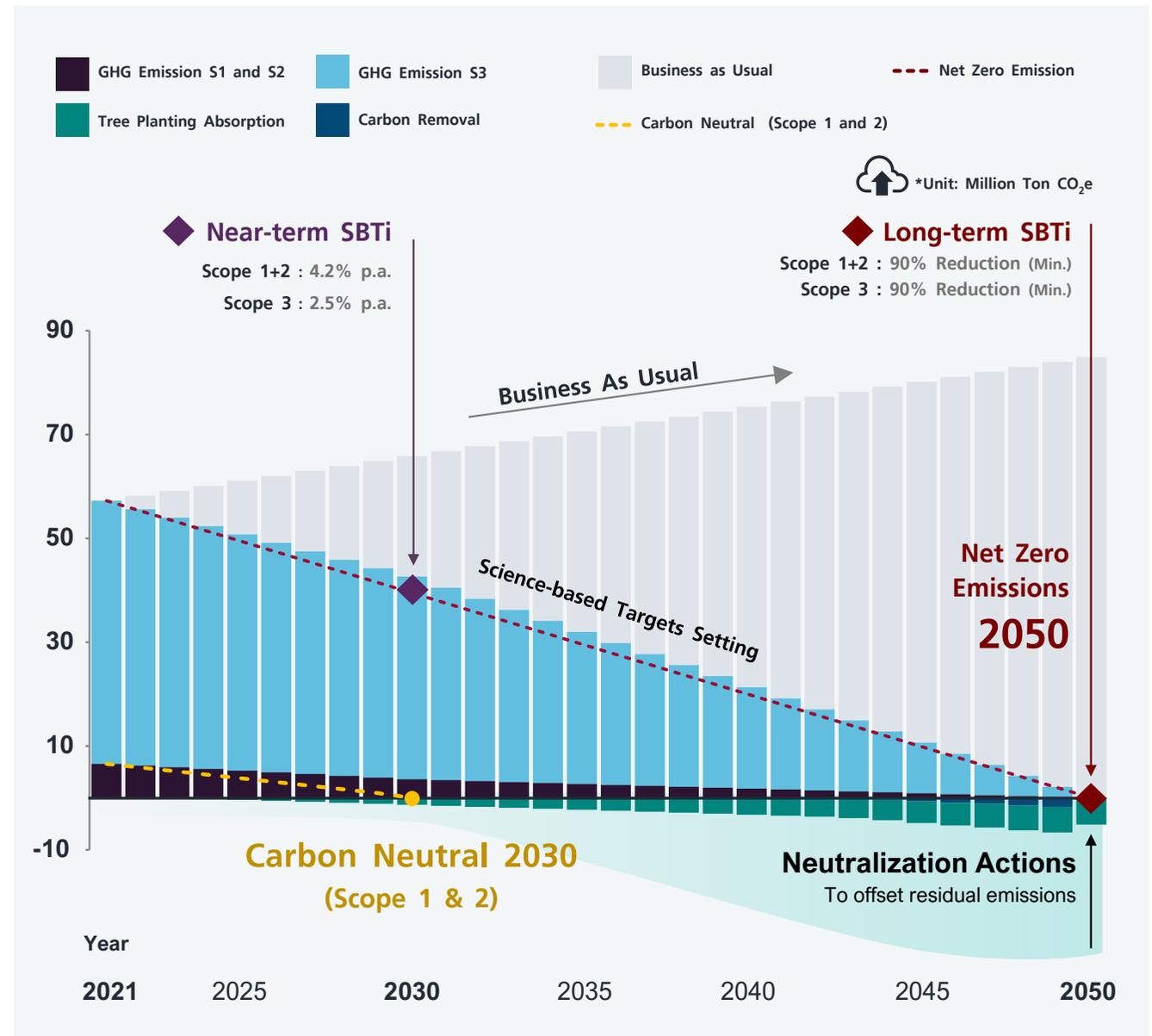


C.P. GROUP Sustainability Ambitions



C.P. Group aim to achieve Net Zero emissions by 2050 (including Scope 3), commit to setting science-based emissions reduction targets in line with 1.5°C emissions scenarios, and submit the targets to the Science Based Targets initiative (SBTi) for approval to ensure the strongest ambition and align with trajectories that lead to net-zero value chain emissions by 2050 for the best chance of avoiding the worst impacts of climate change.

C.P. GROUP Pathway to Net Zero



Appendix

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Scenario Analysis

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Acknowledgement

1. Cover Page Picture : “สัตว์มีค่า ป่ามีคุณ” ชื่อภาพ เส้นพรมแดน ภาพโดย นายสรารัฐ ม่อมละมุล มหาวิทยาลัยรังสิต สถานที่ เนินข้างศึก จ.กาญจนบุรี
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4. Page 9 Picture : สถานีชาร์จพร้อมช่องจอดรถ EV Charger 4 ช่องจอด ที่โลตัสรามอินทรา, <https://www.facebook.com/futurechargethailand>
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6. Page 11 Picture : “Solar panels on a lawn” Andreas Gücklhorn, <https://unsplash.com/photos/7razCd-RUGs>
7. Page 13 Picture : “Solar Floating” จากโรงงานอาหารสำเร็จรูปโคราช, <https://www.facebook.com/CPFGroup>



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