

MITR PHOL

Task Force on Climate-related Financial Disclosures (TCFD)
and IFRS S2 Climate-related Disclosure 2026



Task Force on Climate-related Financial Disclosures TCFD) - IFRS S2



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Message from the Chairman of Mitr Phol Group

At Mitr Phol Group, sustainability is more than a goal. It is a principle that has shaped the way we do business and create value. [We believe that sugarcane is more than an economic crop, and sugar is more than a product for consumption.](#) They form the foundation of a circular resource system that creates value across food, energy, high-value bio-based products, and sustainable innovations. By unlocking the value of resources, we seek to enhance quality of life and contribute to a more sustainable economy and society.

Our principle of “[Grow Together](#)” reflects our belief in shared progress. We grow alongside farmers, communities, employees, business partners, customers, and other stakeholders, as sustainable growth depends on a strong and resilient value chain. We promote responsible water and irrigation management, modern farming practices, fresh-cut sugarcane to reduce burning, as well as education and knowledge development initiatives that strengthen the capabilities and income security of farmers and communities. At the same time, we remain committed to delivering high-quality products to our customers and consumers. Together, we strengthen the resilience of our value chain, creating positive impacts for our stakeholders and reinforcing the foundation for sustainable growth. Amid climate change, food and energy security challenges, the transition to a low-carbon economy, and geopolitical uncertainty, we continue to strengthen our readiness to manage risks, adapt to change, and create sustainable long-term value.

Mitr Phol Group remains committed to advancing the circular economy and supporting the transition to a low-carbon future. Through innovation, technology, and the development of our people, we will maximize the value of sugarcane, advance high-value bio-based products, reduce greenhouse gas emissions, and contribute to the country’s food and energy security.

On behalf of Mitr Phol Group, I would like to express my sincere appreciation to our farmers, employees, business partners, customers, communities, and all stakeholders for their continued trust and partnership. Meaningful and sustainable growth must create shared value for people, society, and the environment. We remain committed to conducting our business with transparency and responsibility, balancing economic, social, and environmental considerations to ensure that the progress we create today contributes to a stronger and more sustainable future for generations to come.

Mr. Buntoeng Vongkusolkrit
Chairman of Mitr Phol Group



About this Report

This report represents Mitr Phol Group's fifth disclosure aligned with the Task Force on Climate-related Financial Disclosures (TCFD) and the second year of adopting IFRS S2. It presents climate-related disclosures for the reporting period from 1 January 2025 to 31 December 2025, structured across the four core pillars of both TCFD and IFRS S2—Governance, Strategy, Risk Management, and Metrics & Targets. The scope of this report covers Mitr Phol Group's business units in Thailand. This year's disclosure reflects the update to governance structures, refinements to climate-related risk and opportunity assessments, and enhanced analysis of associated financial impacts. It also incorporates the annual review of risk management processes and greenhouse gas (GHG) emissions data for 2025.

Through the scenario analysis, physical risks evaluated include key risk factors such as water stress, water quality, extremely heat and flooding while transition risks assess the technology, regulation market and potential impact from carbon pricing and decarbonization opportunity on bio jet fuel. The identification of material climate-related topics reflects Mitr Phol Group's current assessments based on available data, methodologies, and stakeholder input, and may evolve over time in response to changes in external conditions, data availability, and regulatory expectations.

However, actual results relating to climate-related risks, opportunities, and their financial impacts may differ materially from those presented due to factors beyond Mitr Phol Group's control. These include, but are not limited to, changes in economic or market conditions, commodity and energy prices, technological advancements, climate-related events and extreme weather affecting agricultural productivity, geopolitical developments, and regulatory change, stakeholder engagement, and data availability and quality across operations and the value chain. Consequently, scenario analyses, pathways, and assumptions presented in this report are inherently uncertain and may not materialize as described.

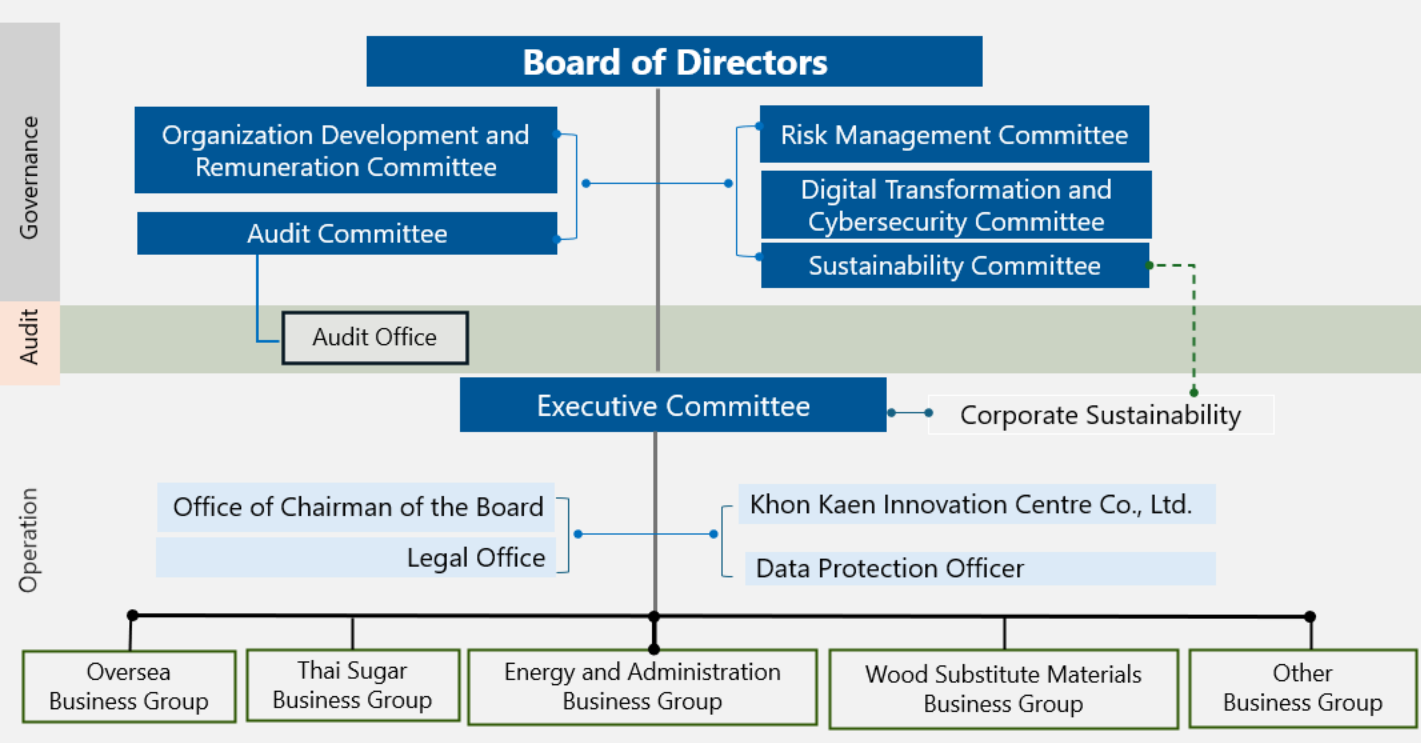


1. Governance

1.1 Governance

Mitr Phol Group's Board of Directors holds ultimate responsibility for the oversight of all ESG-related matters, including climate-related and nature-related risks and opportunities. To facilitate effective board-level oversight, the Group has established two dedicated committees; the Sustainability Committee and the Risk Management Committee (RMC), with distinct mandates that collectively ensure climate-related and nature-related risks are identified, assessed, and managed in a structured manner.

The RMC is responsible on enterprise risk governance, policy development, and corporate risk management, while the Sustainability Committee is responsible for the assessment of climate-related risks and strategic planning, opportunities, and disclosure. At the management level, the Executive Committee is accountable for managing and monitoring to climate-related risks and opportunities, ensuring alignment with the Group's overall target and strategy.



1.2 Governance Roles and Responsibilities

Governance Body	Roles and Responsibilities	Frequency of Meeting
Board of Directors	The Board of Directors holds ultimate responsibility for overseeing all strategic matters across the Group, including climate-related risks and opportunities. Climate-related issues are regularly accelerated to the Board of Director through reporting from the Sustainability Committee and the Risk Management Committee, ensuring that material climate considerations are integrated into strategic decision-making.	Every 2 months
Sustainability Committee	The Sustainability Committee oversees the Group's climate-related strategy, including the assessment of climate-related risks and opportunities, organizational greenhouse gas emissions, and nature-related issues as part of the Group's materiality assessment. The Committee is responsible for overseeing the setting of climate-related policy including greenhouse gas reduction target and net zero commitments — and monitors progress against those targets, with updates reported to the Board of Director.	Quarterly
Risk management Committee (RMC)	The Risk Management Committee supports the Board of Director in overseeing enterprise-wide risk management, including climate-related risks. Climate risks are assessed as part of the annual enterprise risk assessment process and monitored on an ongoing basis. The Committee reviews the effectiveness of risk management process and mitigation actions, ensuring that climate-related risks are managed within the Group's defined risk appetite, with regular updates provided to the Board of Director.	Quarterly
Executive Committee	The Executive Committee is responsible for implementing climate-related strategy aligned to net zero pathway and managing climate action at the business unit level. This includes translating board direction into operational actions, integrating climate considerations into business decisions, and reporting progress to relevant governance bodies.	Monthly
Audit Committee	The Audit Committee provides independent oversight of internal audit and reporting. The Committee reviews the effectiveness of control systems to ensure alignment with established policies, compliance with applicable laws and regulations.	Monthly

1.3 Board Skills and Competencies

The Board of Directors ensures that it maintains an appropriate combination of skills, competencies, and experience required to effectively oversee climate-related risks and opportunities. Climate-related expertise is represented at both Board and Committee levels, particularly within the Sustainability Committee and Risk Management Committee. Board and committee members possess relevant expertise across sustainability, climate change, energy transition, risk management, strategy, management and innovation, and core industry sectors including agriculture and energy. These competencies support informed decision-making on climate-related strategy, risk management, and long-term planning.

The Group periodically reviews Board composition to ensure continued alignment with strategic priorities, including climate-related challenges. In addition, Board members receive regular updates and training on climate-related developments, such as regulatory changes, carbon markets, and emerging transition risks.

Governing Body	Position	Relevant Skills
Mr. Buntoeng Vongkusolkrit	Chairman	• Agricultural and Food Industry • Energy and Utilities Industry • Sustainability • Climate and Biodiversity
Sustainability Committee	Members	• Sustainability • Risk Management • Strategy and Innovation • Agricultural and Food Industry • Energy and Utilities Industry • Climate and Biodiversity
Risk Management Committee	Members	• Risk Management • Information Technology • Financials • Strategy and Innovation • Agricultural and Food Industry • Climate and Biodiversity

1.4 Targets and Remuneration

Mitr Phol has set targets to reduce GHG emissions in line with the Paris agreement, including a Carbon Neutrality target by 2030 and a Net Zero target by 2050, with interim milestones of a 42% reduction in Scope 1&2 emissions and a 25% reduction in Scope 3 emissions by 2030 against a 2022 base year.

The Company has integrated these greenhouse gas reduction targets into its performance management and remuneration framework. These climate targets are embedded in performance evaluations through a cascaded structure, beginning at the executive level and flowing down to relevant functional units. This waterfall approach ensures that remuneration incentives are aligned with the Company's climate transition pathway across organizational levels.

Climate-related targets are incorporated into management performance evaluations. The Company continues to assess opportunities to further strengthen the integration of climate-related considerations into performance management processes

1.5 Climate Change-Related Public Policy Engagement

Mitr Phol Group is committed to supporting global efforts to limit temperature rise to below 1.5°C in alignment with the Paris Agreement, SDG 6 (Clean Water and Sanitary), SDG 13 (Climate Action) and Thailand's enhanced commitments announced at COP28, including increasing its greenhouse gas reduction target from 30% to 40% under the updated Nationally Determined Contributions (NDC) and achieving net-zero emissions by 2050. In line with these commitments, the Group supports the transition to a low-carbon, climate-resilient economy and actively engages in relevant policy areas.

The Group's policy engagement focuses on areas that are material to its operations, including agriculture, renewable energy, bioenergy, water management, and carbon markets, which are closely linked to its sugar, bioenergy, and agribusiness. Mitr Phol participates in collective action through key networks and industry associations, including the UN Global Compact Network Thailand, Thailand Carbon Neutral Network (TCNN), the Federation of Thai Industries (FTI), Thai Sugar Miller Company Limited (TSMC), the Association of Private Power Producers (APPP), and the Thai Sugar and Bio-Energy Producers Association (TSEA). Through these platforms, the Group collaborates with private sector peers, government agencies, and communities to promote industrial sustainability, foster innovation, and support climate policy development.

Governance and Oversight

Climate-related public policy engagement is overseen by the Group's Sustainability Committee, with accountability at Board member and C-Suite level. Strategic climate are aligned with the Group's objective, greenhouse gas (GHG) targets, and long-term transition plans. Key climate-related policy positions are subject to formal governance processes and periodic review to ensure consistency with the Group's environmental commitments, business ethics principles, and national and international climate objectives. The governance policy is applied across all jurisdictions where the Group operates, ensuring climate-related policy engagement is aligned with relevant local regulations and national climate commitments and policy.

Scope and Areas of Public Policy Engagement :

Mitr Phol's climate-related public policy engagement covers, but is not limited to, the following areas:

- 1. Climate -related mitigation and adaptation policies**, including Thailand's Nationally Determined Contribution (NDC) and long-term low-emission development strategies and SDG 13 the climate action
- 2. Renewable energy and bioenergy regulations**, including biomass, biogas, and renewable electricity incentives , the Power Development Plan and The ethanol policy including Sustainable aviation fuel
- 3. Carbon pricing and carbon market mechanisms**, such as Thailand Voluntary Emission Reduction (T-VER) schemes and T-VER Premium which is complied to international standard
- 4. Sustainable agriculture and land management practice to enhance productivity**, open burning reduction, PM2.5 management, and agricultural value chain practices to support climate resilience across the sugarcane value chain and Support policies on reducing pesticide use
- 5. Water governance and management policy** such as water quality , water-use efficiency and water use practices across the sugarcane value chain and all water related issue which is support to SDG 6 as clean water and sanitary for worker and communities.
- 6. Climate-related disclosure and reporting standards**, promoting clarity, comparability, and consistency included TNFD

1.5 Climate-Related Public Policy Engagement (Cont.)

Engagement Process on Trade Associations

The Group participates in climate-related public policy discussions through legitimate and transparent channels, including:

- (1) **Review:** Annual assessment of alignment between internal climate strategy and external policies, including trade associations
- (2) **Monitoring:** Tracking of key policy developments and assessment of business implications
- (3) **Engagement:** Dialogue with regulators, participation in policy consultations (e.g. Thailand Taxonomy, PDP), industry associations, and submission of technical input
- (4) **Disclosure:** Transparent reporting of policy positions and activities
- (5) **Submission** of technical feedback and policy recommendations based on operational experience such as PM 2.5 emission
- (6) **Knowledge sharing** on best practices in climate mitigation, adaptation, and sustainable agriculture held by government and non-government agencies

Alignment and Consistency

Mitr Phol seeks to ensure alignment between its direct policy engagements, positions taken through industry associations, and its publicly stated climate commitments. Where differences in policy positions arise within industry platforms, the Group promotes constructive dialogue and supports progressive outcomes aligned with climate science, national priorities, and long-term business resilience.

Transparency and Ethics

All climate-related public policy engagement is conducted in accordance with anti-corruption principles, and applicable laws and regulations and the Group's policy. The Group does not make political contributions related to climate policy advocacy and maintains internal controls to ensure ethical and responsible engagement.

Outcomes and Continuous Improvement

Through its climate-related public policy engagement, Mitr Phol contributes to:

- **An enabling regulatory environment for renewable energy and low-carbon technologies**, including **engagement related to biomass integration in Thailand's Power Development Plan (PDP)**, as well as policies supporting bioenergy development (including SAF), and renewable electricity incentives and Renewable Energy Certificates (RECs)
- **Improved climate resilience and water management of agricultural systems**, for example through initiatives aligned with sustainable agriculture and water management practices across the sugarcane value chain, as well as addressing water use efficiency and air quality impacts such as **PM2.5 emissions**
- **Credible and effective carbon market mechanisms**, including support for voluntary carbon markets such as Thailand Voluntary Emission Reduction (T-VER) schemes
- **Clear and practical climate disclosure frameworks**, in line with emerging standards such as TCFD, and TNFD

The Group periodically reviews its policy engagement priorities to reflect evolving regulatory landscapes, emerging climate risks and opportunities, and stakeholder expectations.



2. Strategy

2.1 Decarbonization Strategies

Mitr Phol Group has established a decarbonization strategy supported by an internally defined greenhouse gas (GHG) reduction pathway, aligned with aligned the Paris Agreement goal of limiting global warming to 1.5°C, and Thailand's net zero pathway under the guidance of the Thailand Greenhouse Gas Management Organization (TGO). The Sugar business group has been selected as a key focus area for the Thailand Net Zero Pathway to support national decarbonization efforts, while all business units continue to implement the Group-wide GHG reduction pathway, incorporating input from value chain partners, industry associations, and government agencies into the implementation of the Group's transition plan.

Mitr Phol's Net Zero Transition Plan is implemented through decarbonization actions covering Scope 1, 2 and 3 emissions across the value chain. Scope 1 and 2 emissions are reduced through low-carbon manufacturing, energy efficiency improvement, renewable energy deployment, low-GHG wastewater treatment systems, While scope 3 emissions are addressed through sustainable agriculture, green supplier development, climate-friendly packaging and circular materials, value chain engagement and logistic initiative. This includes engagement with sugarcane farmers to increase green harvesting, reduce pre-harvest burning, and improve fertilizer efficiency.

Mitr Phol's Net Zero Pathway



2.1 Decarbonization Strategies (Cont.)

2.1.1 Decarbonization Strategies and Its Integration

Mitr Phol integrates **climate-related transition and physical risks and opportunities** into its decarbonization strategy, ensuring alignment with its overall business model and long-term strategic direction. **Transition risks and opportunities**, including evolving carbon regulations and changing market expectations, are systematically considered in shaping emissions reduction initiatives, such as renewable energy adoption, energy efficiency improvements, and the development of low-carbon products. At the same time, **physical climate risks**, particularly those affecting agricultural operations, are assessed and managed through targeted adaptation measures, including water management programs and solar-powered irrigation, to protect productivity and enhance supply chain resilience. These climate-related considerations are embedded across the Group's **strategic planning framework**, including its five strategic pillars, and are integrated into **financial planning and capital allocation processes** through the application of internal carbon pricing and climate-informed investment decision-making.

As a result, climate-related risks and opportunities are incorporated into **operational priorities, business strategy, and long-term investment decisions**, supporting the Group's resilience under different climate scenarios and its transition toward a low-carbon economy.

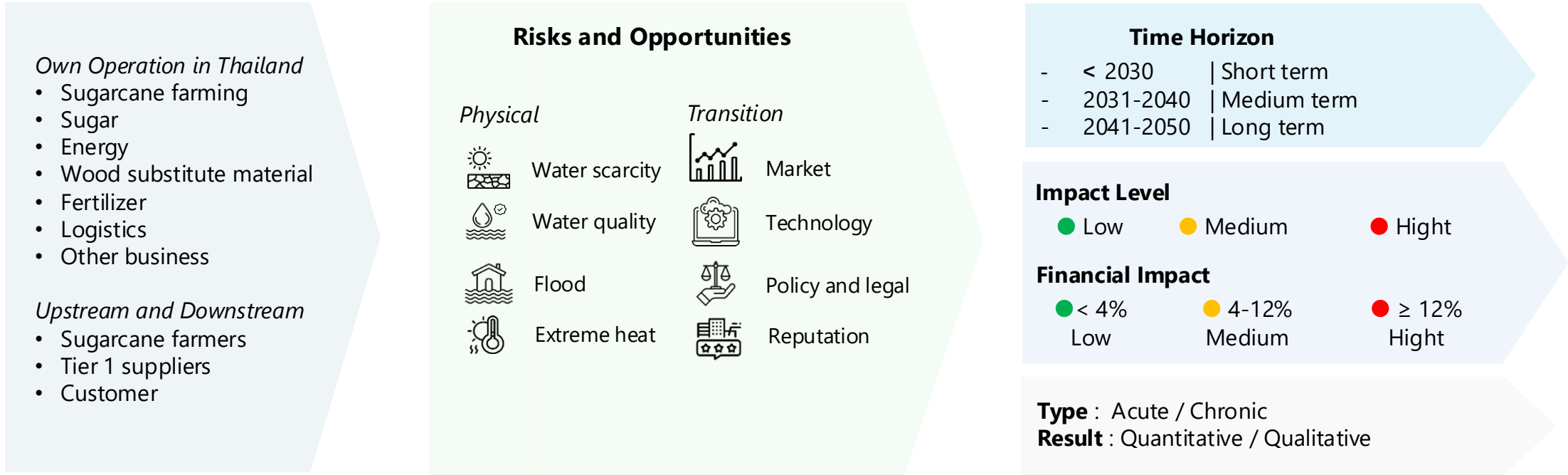
2.1.2 Application of Internal Carbon Pricing (ICP)

Mitr Phol applies internal carbon pricing (ICP) to embed climate-related considerations into financial and investment decision-making. The mechanism translates potential carbon-related risks, such as future carbon taxes and regulatory changes, into measurable financial impacts by assigning a cost to greenhouse gas (GHG) emissions. In practice, the Group applies a **shadow carbon price of THB 200/tCO₂e** to Scope 1 and Scope 2 emissions in the evaluation of capital projects from 2025 onward. This allows project owners to assess the long-term cost implications of emissions and compare investment options on a like-for-like basis. Projects with higher emissions reflect higher notional costs, encouraging the selection of low-carbon technologies, energy-efficient solutions, and renewable energy alternatives. In parallel, a **pilot internal carbon fee of THB 35-50/tCO₂e** is implemented to support internal carbon offsetting activities. The proceeds are allocated to sustainability initiatives and emissions reduction projects.



2.2 Climate-Related Risk and Opportunities Assessment

Mitr Phol Group integrates its climate strategy, GHG emission pathway, and Net Zero 2050 targets into risk and opportunity assessments in line with TCFD which is also aligned with IFRS S2. Climate-related risks and opportunities are assessed across operations in Thailand and the value chain, covering physical risks, transition risks, and opportunities. These are evaluated across short-, medium-, and long-term horizons under different climate scenarios, using both qualitative and quantitative analysis, and are supported by define mitigation and adaptation.



2.3 Physical Risk

Definition : Physical risks arise from the direct impacts of climate change on assets, operations, and supply chains. These include acute risks, such as floods and extreme heat events, and chronic risks, such as water scarcity and impacts on water quality. Physical risks may also lead to secondary effects, including changes in water-related regulations. These risks are assessed using the WWF Water Risk Filter, complemented by external data sources and internal materiality assessments.

Scenarios :	SSP1	SSP1-2.6: Taking the Green Road (projected warming of 1.2–1.8°C)	SSP2	SSP2-4.5: Middle of the Road (projected warming of ~2.7°C)	SSP5	SSP5-8.5: Fossil-Fuel Development (projected warming of ~4.0°C)

Risk assessment :	Timeframe			Impact level		
	Short	Medium	Long	Low	Medium	High
	<2030	2031–2040	2041–2050			
Risk	Definition			Drivers		Profile
Water Scarcity and Water Stress	Pressure on water resources due to limited supply, declining quality, and increasing demand.			- Rainfall - High temperature - Water demand (El Niño → rainfall ↓) - ENSO (El Niño → rainfall ↓)		Chronic
Flood	Flood refers to an acute physical climate risk caused by extreme rainfall or water overflow, leading to temporary inundation that disrupts operations, damages assets, and affects supply chains.			- Extreme precipitation (rain bomb / heavy rainfall) - River overflow / drainage overload - ENSO (La Niña → rainfall ↑) - Climate change → precipitation intensity ↑		Acute
Water Quality	Degradation of the physical, chemical, or biological characteristics of water resources due to climate-related factors, affecting its suitability for operational use.			- Water degradation - Water pollution		Chronic
Extremely Heat	Rising temperatures and prolonged heat events that reduce worker productivity and safety, increase cooling and energy demands, and affect crop yields.			- Rising temperature - More frequent heat wave		Acute

2.3.1 Water Scarcity and Water Stress

Water scarcity refers to the physical shortage of water, while water stress reflects increasing pressure on water resources due to rising demand and reduced availability. To assess these risks, the Group applies a group-wide approach across its operations and value chain, while placing particular emphasis on sugarcane yield as the primary raw material for all business segments. The assessment uses long-term climate scenarios and considers climate variability, including El Niño and La Niña, to capture short-term fluctuations in rainfall and their impacts on water availability, sugarcane yield, and financial performance.

Level of impact

Water Scarcity and Water Stress	Short Term (<2030)			Medium Term (2031 – 2040)			Long Term (2041 – 2050)		
	SSP1 -2.6	SSP2 -4.5	SSP5 -8.5	SSP1 -2.6	SSP2 -4.5	SSP5 -8.5	SSP1 -2.6	SSP2 -4.5	SSP5 -8.5
Impact level	●	●	●	●	●	●	●	●	●

Risk impact on Value Chain and Financial Impact

Own Operation	Upstream	Down Stream	Financial Impact	Cost of Action
- Reduced product availability - Higher product costs on water - Higher cost on raw materials	- Sugarcane yield reduction - Higher cost of irrigation - Declining cane quality, the sweetness and weight. - Higher irrigation costs may encourage farmers to switch from sugarcane to alternative crops, reducing feedstock availability and increasing supply chain risks	- Reduced sugar product availability, higher product costs - supply may disruptions for industrial customers	Assumption : Water Shortage for 45 Days • The reserved water might not be enough for factory operation; the revenue shall be loss due to loss in sugar cane production • Sugar Cane plantation will affect if lack of water for 45 days • Total cost of water 70 Million baht (base on cost of water 3.5 baht/liter)	Investment 1,000 MB in irrigation projects covering 4,700 hectors beneficial areas

Remark: ENSO introduces year-to-year variability in financial performance. El Niño events result in significant negative impacts on sugarcane yield due to drought conditions. In contrast, La Niña conditions generally lead to increasing yield outcomes, as Mitr Phol's sugarcane plantations are in non-flooding areas. However, La Niña may still affect operational efficiency and crop quality.

2.3.1 Water Scarcity and Water Stress (Cont.)

Mitigation and Adaptation

Mitigation	Time (year)	Adaptation	
Agriculture : • Modern farming model improve water efficiency • Soil testing and legume plantation to avoid moisture retention reduction	Short to Medium-term (2026–2040)	• Irrigation system such as dripping water system, water storage • Resilient sugarcane which higher tolerance to water stress	Ongoing (2026–2050)
Farmer engagement : • Support access to financing for mitigation and adaptation investments • Share weather forecasts and early warning (ENSO-related risks) • Collaborate with farmers to implement irrigation and water management systems		Ongoing (2026–2050)	
Operation • Water Use Efficiency through the 4R Principle • Develop contingency plans for the disruption periods	Short to Medium-term (2026–2040)	• Water recycling from water treatment system – reducing dependence on external water source • Improve machine efficiency to reduce water consumption	Ongoing (2026–2050)
Downstream: • Reduce water intensity • GHG Reduction through Solar-Powered Pump	Short to Medium-term (2026–2040)	• Process improvement, e.g., development of liquid sugar product that can help reduce B2B customer water consumption during product use phase.	Ongoing (2026–2050)

2.3.2 Water Quality

Water quality risk refers to degradation of physical, chemical, or biological characteristics, reducing suitability for operations and ecosystem integrity. The Group assesses this risk using WWF Water Risk Filter indicators. The assessment covers current and projected conditions across time horizons, including changes in regulation that may affect operations, supply chains, and compliance costs.

Level of Impact

Water Quality	Short Term (<2030)			Medium Term (2031 – 2040)			Long Term (2041 – 2050)		
	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5
Impact level	●	●	●	●	●	●	●	●	●

The assessment indicates that water quality risk increases over across all scenarios, with limited variation in the short term and greater divergence in the long term. In the short term, all scenarios remain at low impact (green), with no material disruption. In the medium term, risk rises to moderate (yellow) due to increasing pollution, and regulatory pressure. In the long term, SSP1 and SSP2 remain at moderate levels, reflecting management actions and policy responses.), these resulting in stricter regulations, higher treatment requirements, and increased impacts on operations, supply chains, and compliance costs

Risk impact on Value Chain and Financial Impact

Own Operation	Upstream	Downstream	Financial Impact	Cost of Action
- Higher water treatment - Compliance, and operating costs - Disruption to production processes - Increased risk of non-compliance with environmental regulations	- Reduced crop quality/yield and higher supplier water management costs - Disruption to raw material quality and supplier operations	- May cause Supply disruptions, increased value chain costs, and potential customer impacts.	Assumption : Apply of wastewater Treatment cost = 2,000,000 baht/day/site	Improve water treatment system 1 Unit THB 300 MB

2.3.2 Water Quality (Cont.)

Mitigation and Adaptation

Mitigation		Adaptation	
Water management	Improve and update of new technology of water quality system and consistency control water quality parameters	Infrastructure	Invest in wastewater treatment systems
Process control	• Optimize chemical • wastewater discharge	Operational response	Activate treatment during contamination events
Pollution prevention	Reduce nutrient and contaminant release at source	Water sourcing	Diversify water sources to reduce dependency
Supplier engagement	Promote sustainable practices across supply chain	Business continuity	Develop contingency plans for disruption periods (as per implement in water stress)
Training	Conduct water quality and environmental management training	Technology upgrade	Enhance treatment efficiency and resilience
Compliance systems	Strengthen regulatory monitoring and reporting systems	Emergency response	Practice protocols for acute pollution events

2.3.3 Extreme Heat

The extremely heat analysis is combine with water scarcity. The analysis in the short to medium term (2026–2040), impacts remain limited and may not strongly ‘trigger’ sugarcane yield loss. This is because temperatures are still close to the crop’s optimal range (30–35 °C), extreme heat events remain intermittent, and crops can partially recover between stress periods. However, under SSP5 in tong term , these thresholds are exceeded more frequently, and heat stress becomes more persistent rather than episodic, leading to sustained physiological stress and reduced productivity. This also increases evapotranspiration, further intensifying water scarcity. In addition, rising temperatures increase energy demand across operations, as machinery, equipment, and cooling systems require more energy to maintain performance and operating efficiency under hotter conditions.

Driver:

Number of Hot Days (Tmax ≥ 35°C)

Risk Level –Threshold (days/year)

● 40–60-days baseline of Thailand

● 60-80 stress start (agriculture)

● 80- ≥ 100 material impact

Level of Impact

Extreme Heat	Short Term (<2030)			Medium Term (2031 – 2040)			Long Term (2041 – 2050)		
	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5
Impact level	●	●	●	●	●	●	●	●	●
Number of hot day	30-60 days	40-60 days	50-60 days	40-80 days	60-100 days	80-120 days	40-80 days	60-120 days	100-200 days
Change from baseline	-	-	10-20 days	0-20 days	20-40 days	40-60 days	0-20 days	20-60 days	60-140 days
Financial impact	No significant in EBIDA loss as the financial impact and additional investment cost as per is absorbed through increasing operation cost of water sourcing.								

Remark : Higher temperatures intensify water stress, leading to additional costs for water sourcing, treatment, and efficiency measures. As a result, the impact is reflected as incremental on energy cost.

2.3.3 Extreme Heat (Cont.)

Impact of Heat Stress

Impact area	Own operations (sugar mills and power plants)	Agricultural supply chain (farms / sugarcane supplies)
Production / processing efficiency	• Higher cooling demand • Increased energy consumption • Equipment performance stress and higher use of electricity • Operational constraint	• Reduced photosynthesis and growth • Lower sucrose content • Yield may loss • Higher crop stress and failure risk • Lower cane quality (low sugar, high fiber)
Power generation (biomass)	• Reduced bagasse supply → lower electricity generation • Reduced power revenue	• Reduced biomass yield (less cane available)
Supply stability	• Irregular raw material inflow • Difficulty maintaining steady operations	• High yield variability year-to-year • Uncertain production output
Labor & health (heat stress)	• Increased risk of heat stress for workers in mills • Reduced worker productivity and efficiency • Need for additional safety measures (cooling, breaks)	• Field workers exposed to extreme heat • Reduced work hours and productivity • Higher risk of heat-related illness (heat exhaustion, dehydration)
Water–health interaction	• Higher cooling demand increases at workplace heat exposure	• Reduces ability to manage water stress due to worker stress (hydration, irrigation work conditions)

2.3.3 Extreme Heat (Cont.)

Mitigation and Adaptation

Impact area	Mitigation	Adaptation
Heat stress (> 35 °C) and water scarcity	• Reduce GHG emissions (energy efficiency, renewable energy in mills) • Low-carbon agriculture practices • Improve water-use efficiency • Integrated watershed management • Reduce water-intensive inputs	• Plant heat-tolerant varieties • Adjust planting calendar • Shade/soil cover management • Efficient irrigation (drip irrigation) • Oasis Project (large water resource) • Soil moisture conservation
Labor	• Reduced emissions in operations • Additional safety measure during high temperature period such as implement cooling breaks, shaded rest areas, and hydration programs to protect employees from extreme heat.	• Flexible planting/harvest schedules • Heat-safe labor practices • Farm-level climate planning

2.3.4 Flood

Flood risk refers to an acute physical climate risk from extreme precipitation or water overflow, leading to inundation that disrupts operations, damages assets and affects supply chains. The Group assesses flood risks using IPCC-aligned SSP scenarios as the scenario framework and the WWF Water Risk Filter as the assessment tool, where IPCC provides projections of future climate conditions and WWF evaluates location-specific exposure. ENSO variability is incorporated to capture short-term extremes, and the assessment incorporates localized events focus on the southern location, including “rain bomb,” and reflects materiality. These inputs are combined with internal data to assess impacts across time horizons and business units and translate risks into financial outcomes.

Level of impact

Flood	Short Term (<2030)			Medium Term (2031 – 2040)			Long Term (2041 – 2050)		
	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5	SSP1 –2.6	SSP2 –4.5	SSP5 –8.5
Impact level									
Impact duration	<7 days	7-10 days	10-15 days	10-15 days	15-20 days	20 days	15-30 days	20-30 days	30-50 days

Risk Impact on value chain and Financial Impact

Own Operation	Upstream	Downstream	Financial Impact	Cost of Action
- Asset damage - Warehouse and raw material damage - Production disruption - Increasing operation cost for repair, recovery and flood protection barrier - Logistic disruption for employee and supply chain	- Delayed of raw material - Reduce feedstock availability for processing operation	- Reduce production availability due to delayed delivery - Customers may face higher cost due to supply constraint - Customer logistic disruption	Assumption* • Duration : Downtime (2 week/14 Days) • Financial Impact approximately = 550 MB (revenue loss and assets damage)	15-20 MB for Flood Protection Barrier

Remark* : Financial impact is represented by flood risk area assessment

2.3.4 Flood (Cont.)

Mitigation and Adaptation

Mitigation	Adaptation	Time
• Flood barriers • Drainage system upgrade • Elevation of equipment & storage • Site layout & water flow design • Early warning systems	• Business Continuity Plan (BCP) • Alternative logistics routes • Buffer stock (raw material) • Emergency response & agile recovery • Insurance coverage	Ongoing (1-3 years)

2.4 Transition Risk

Definition : Transition risks are defined as risks arising from the shift toward a low-carbon economy, on all sides of changes in policy, legal, technology, market conditions, and stakeholder expectations or reputation. These factors may directly impact an organization’s revenue, cost structure, and overall financial performance through changes in demand, pricing, and competitiveness.

Scenarios :	STEP	Stated Policies Scenario (STEP) is a future based on current and announced policies only, with gradual transition, insufficient climate ambition, and ~2.5–3°C warming	NZE	The Net Zero Emissions represents a 1.5°C-aligned pathway characterized by rapid decarbonization. Scenario is applied to assess an organization’s exposure to accelerated transition risks and structural shifts in low carbon market.

Risk assessment :	Timeframe			Impact level		
	Short	Medium	Long	Low	Medium	High
	<2030	2031–2040	2041–2050			
Risk and Opportunity		Definition	Drivers	Risk	Opportunity	
 Policy & Legal	Risks arising from climate policies, regulations, and legal actions aimed at decarbonization		• Renewable mandates • Climate Change Law	• Carbon tax	• Carbon credit • Renewable energy	
 Technology	Risks from low-carbon technology substitution and innovation disrupting existing operations		• EV adoption • Renewable energy cost decline • Energy efficiency technology • BECCUS / digitalization	• Technology adoption	• SAF* • BECCUS*	
 Market	Risks from changes in supply, demand, and customer preferences toward low-carbon products		• ESG-driven demand shift • Customer decarbonization targets • Commodity price changes • Investor pressure	• Ethanol demand • Low carbon product demand	• SAF • Low carbon product	
 Reputation	Risks from stakeholder perception regarding company’s climate and ESG performance		• Investor expectations • Consumer awareness • NGO / media pressure	• water withdrawal in water stress area • Delayed in decarbonization action	• Higher global standard in sustainability	

Remark : SAF = Sustainable aviation fuel , BECCUS = Bioenergy with Carbon Capture, Utilization and Storage

2.4.1 Policy and Regulation Risk : Related to Climate Change

At the national level, two regulations in Thailand affect transition risk: the draft Climate Change Act, which establishes enforceable mechanisms including carbon pricing (e.g., carbon tax and emissions trading system), emissions regulation, and GHG monitoring, reporting, and verification (MRV), and the Thailand Taxonomy, which guides the classification of sustainable activities. The Group assesses the risk and financial impact of these policies under two scenarios: STEP, reflecting gradual implementation, and NZE, reflecting accelerated enforcement aligned with a 1.5°C pathway.

Level of impact

Risk	Impact	STEP			NZE		
		Short (<2030)	Medium (2031 - 2040)	Long (2041 – 2050)	Short (<2030)	Medium (2031 – 2040)	Long (2041 – 2050)
Carbon Tax and Carbon Pricing	Tax applied to high-emission fuels/products based on “polluter pays” principle	 Embedded in fuel tax and price pass-through	 Tax price increase and expanding scope	 High tax price	 Tax price increase and expanding scope	 High tax price	 High tax price and full scope
Thailand Taxonomy	Classification of “green vs transition activities” for finance & policy	 Voluntary / Limited and mainly in financial sector	 Partial adoption	 Fully integrated in high energy consumption sector	 Partial adoption	 Fully integrated in high energy consume sector	 Fully integrated in all sector
Carbon Credit Market	Market for trading carbon credits and offsets	 Voluntary / limited scale	 Voluntary / limited scale	 Required for compliance (Nature base – CCS Credit)	 Voluntary / limited scale	 Required for compliance (Nature base – CCS Credit)	 Required for compliance (Nature base – CCS Credit)

Remark:

As **a Risk**: Increased compliance costs may be incurred from buying carbon credits to offset emissions. / As **an Opportunity**: Carbon credits may be supplied through carbon reduction projects, generating additional revenue. Among those policy risks – Carbon Tax and Carbon Pricing are prioritized issues.

2.4.1.1 Carbon Tax

Carbon tax is a policy-driven transition risk where regulators impose a cost on greenhouse gas emissions (tCO₂e), resulting in increased operating expenses for emission-intensive activities and affecting financial performance. Carbon cost remains manageable under STEP, but under NZE becomes a material financial risk, requiring early transition and investment to protect long-term profitability

Level of Impact

Carbon Tax	Short Term (<2030)		Medium Term (2031 – 2040)		Long Term (2041 – 2050)	
	STEP	NZE	STEP	NZE	STEP	NZE
Impact level						

Assumption	STEP Assumption	NZE Assumption
Carbon tax is calculated based on Scope 1 (direct) GHG emissions. GHG emissions are projected using the 2022 baseline, assuming an annual growth rate of 4%	Using IEA Carbon Tax for STEPS and NZE Scenario Policy-Driven transition	
Scope 1 emission projected to increase overtime • 2030 = 499,000 tCO₂e • 2040 = 739,000 tCO₂e • 2050 = 1,094,000 tCO₂e	Assumed trajectory: STEP • 2030 = 700 THB/tCO₂e • 2040 = 1,500 THB/tCO₂e • 2050 = 2,000 THB/tCO₂e	Assumed trajectory: NZE • 2030 = 2,500 THB/tCO₂e • 2040 = 4,000 THB/tCO₂e • 2050 = 7,000 THB/tCO₂e

Risk Impact on carbon tax, Thailand Taxonomy and carbon market and Financial Impact on carbon tax

Own Operation	Upstream	Downstream	Financial Impact	Cost of Action
- Carbon tax and compliance costs - Cost of MRV and disclosure requirements for CFO and other sustain reports and standard - Decarbonization activities investment - Carbon credit procurement costs - Access to financial funding market and linked to taxonomy alignment	- Supplier compliance costs - Low-carbon sourcing requirements - Emissions data and traceability requirements - Need for supplier decarbonization engagement	- Require more carbon disclosure or sustainable standard - Market access restrictions for high-emission products - Customer preference for sustainable supply chain	Assumption Based on STEP 2030 = 700 THB/tCO₂e 2040 = 1,500 THB/tCO₂e 2050 = 2,000 THB/tCO₂e	Base on Internal Carbon Credit offsetting program 2030 = 499,626 tCO ₂ e Carbon Price = 35 baht/ton Total offsetting cost = 17 MB

Mitigation

Mitigation 1-5 years	- Energy efficiency improvement projects - Renewable electricity (Solar) - Process optimization and decarbonization projects - Carbon MRV and reporting systems - Supplier decarbonization and traceability programs - Carbon credit development project - Thailand Taxonomy alignment assessment
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2.4.1.2 Water Related to Regulatory Change

Water-related regulatory change refers to potential changes in national and local water-related regulations, policies, standards, permitting requirements, and pricing structures that may affect the Group's operations, suppliers, compliance obligations, and operating costs. These changes may include wastewater discharge standards, water withdrawal permits, water pricing mechanisms, pollution penalties, and water allocation measures in water-stressed areas.

Level of Impact

Water related to regulatory change		Short Term (<2030)		Medium Term (2031 – 2040)		Long Term (2041 – 2050)	
		STEP	NZE	STEP	NZE	STEP	NZE
Impact	- Wastewater discharge standard - Water permits - Water pricing - Pollution penalties - Water access tension (Community-local)	●	●	●	●	●	●

Water-related regulatory change is assessed as a low-impact risk across all scenarios and time horizons. Existing water management practices, regulatory compliance, and operational controls are considered sufficient to manage potential impacts. Therefore, no additional mitigation measures or significant capital investments are currently required.

2.4.2 Technology Risk

Technology risk arises as climate change accelerates the transition to a low-carbon economy, increasing pressure to adopt cleaner and more efficient technologies while potentially reducing the competitiveness of existing operations. These pressures are driven by climate-related factors, including evolving policies and market expectations.

Based on technology transition assessment, Mitr Phol identified two priority technology risks relevant to its decarbonization pathway: (1) the technology gap between conventional and advanced ethanol production technologies, such as Sustainable Aviation Fuel (SAF), and (2) digital transformation in operations. These risks were prioritized due to their potential influence on the Group's power business and its ability to adopt emerging low-carbon solutions.

Technology and Digital transformation risks remain manageable across all time horizons. While slower adoption of digital and technologies may limit opportunities to improve energy efficiency, optimize operations, and enhance emissions management, the resulting impacts are expected to be moderate and can be mitigated through continuous operational improvement and technology deployment.

Level of impact

Technology Risk		Short Term (<2030)		Medium Term (2031 – 2040)		Long Term (2041 – 2050)	
		STEP	NZE	STEP	NZE	STEP	NZE
1. Technology Gap Conventional Ethanol Technology VS Advance Ethanol Technology	Conventional Ethanol • High energy use • High emission						
	Advance Ethanol Technology • Conventional ethanol • Lower energy use • Lower emission	●	●	●	●	●	●
2 Digital Transformation in Operation	Impact on GHG Emissions • Inefficient processes → higher energy consumption • Higher fuel consumption → increased combustion – low emissions • Limited control → inconsistent and higher emission levels	●	●	●	●	●	●

Risk Impact on Value Chain and Financial Impact

Own Operation	Upstream	Downstream	Financial Impact	Cost of Action
• Lower production efficiency and competitiveness • Additional investment for technology upgrades	• Need for low-carbon feedstock and traceability • Increased compliance and sustainability requirements	• Product sustainability disclosure requirements • Market preference for responsible water management	Assumption Expenditure •Digital Development = 6 MB	Investment Cost for Digital Development = 6 MB

Mitigation and Adaptation

Mitigation Digital transform (1-5 years)	• Implement digital monitoring and control systems • Deploy IoT, AI, and advanced analytics improve energy management and process optimization • Enhance predictive maintenance capabilities • Develop supplier traceability and digital data platforms
Adaptation (SAF technology)	• SAF feasibility studies and pilot projects SAF plant development and retrofit investment feedstock certification and traceability systems technology licensing and partnerships

2.4.3 Market Risk

Market risk refers to the potential financial impact arising from changes in market conditions driven by the transition to a low-carbon economy, including shifts in supply and demand for products and services, changes in input costs, and evolving customer preferences.

Market Risk		Short Term (<2030)		Medium Term (2031 – 2040)		Long Term (2041 – 2050)	
		STEP	NZE	STEP	NZE	STEP	NZE
Declining of Ethanol Product fuel vehicle	Ethanol and EV transition Impact : Reduced demand for ethanol as the market transitions toward sustainable aviation fuel (SAF) and electricity vehicle (EV)	●	●	●	●	●	●
Customer Behavior Change	Requirement on Low-Carbon Product	●	●	●	●	●	●

Risk Impact on value chain and Financial Impact – Ethanol

Own Operation	Upstream	Downstream	Financial Impact	Cost of Action
- Reduced ethanol sales volume - Lower plant utilization rate - Revenue and margin pressure - Investment required for product diversification	- Reduced demand for feedstock/raw materials - Lower sales volume for suppliers - Need to adapt supply chain for new products	- Reduced demand from fuel blending market - Customer shift to EV and alternative fuels - Changes in product specifications and sustainability requirements	Assumption : Ethanol demand is directly linked to vehicle fuel consumption with drop base on decline structurally Policy : 2030 - EV share 30% of car = 87 MB	See detail on SAF investment

Risk Impact and Financial Impact – Low carbon product

Own Operation	Upstream	Downstream	Financial Impact	Cost of Action
• Need to decarbonize production life cycle with less GHG emission • Additional costs for carbon footprint measurement, verification, and certification • Risk of losing market share if products do not meet customer sustainability requirements • Potential pricing pressure for low emission cost	• Required low GHG emissions and provide product carbon emission data (CFP) • Increased need for sustainable feedstock and raw material traceability • Additional supplier engagement and capacity-building costs	• Customers increasingly request CFP-labelled products and emissions data • Preference for suppliers supporting scope 3 reduction targets • Potential shift toward alternative low-carbon materials and bio-based products	• Assumption Growing customer demand for low-carbon products may influence purchasing decisions and supplier selection, particularly in export markets and among multinational customers with net-zero commitments or need to reduce their scope 3. Potential impacts include reduced sales volume, margin pressure, and increased compliance and certification costs.	• Investment in CFP assessment and verification cost : 3 MB

Mitigation and adaptation

Mitigation	Adaptation
Ethanol • Enhance competitiveness of low-carbon product portfolio • Strengthen innovation and commercialization capabilities	• Transition business model in response to from conventional ethanol to SAF
Low Carbon Product Low-Carbon Product Development • Increase production of bio-based and renewable products • Develop products with lower lifecycle GHG emissions than conventional alternatives. • Enhance more circular economy product Carbon Footprint of Product (CFP) Program • Conduct CFP assessment for key products in accordance with recognized standards. • Obtain third-party verification and certification where appropriate. • Communicate CFP information to customers to support their Scope 3 emissions accounting. • Identify emission hotspots across the value chain and implement reduction measurement	Product Portfolio Adaptation • Diversify from conventional to more bio-based products. • Expand low-carbon product offerings to meet customer demand.

2.4.4 Reputation

Reputation risk mean changing customer or community perceptions of an organization's contribution to or detraction from the transition to a lower-carbon economy. This might cause company facing reputational damage if they are perceived as not taking sufficient action to address climate change.

Level of impact

Reputation		Short Term (<2030)		Medium Term (2031 – 2040)		Long Term (2041 – 2050)	
		STEP	NZE	STEP	NZE	STEP	NZE
Impact	- High water use in water stress area VS public - Delayed decarbonization VS ESG rating						

Risk impact on value chain and Financial Impact

Own Operation	Upstream	Downstream	Financial Impact	Cost of Action
- Sustainability issues may attract concerning regulators, investors, communities, and customers. - Increased monitoring, reporting, assurance, and compliance costs	- Increased expectations for responsible sourcing, supplier water stewardship, and traceability. - Need transparency report	Customers may prefer products from companies demonstrating strong water stewardship practices and low GHG emission product.	Assumption Expenditure - Monitoring, reporting, verification (MRV), assurance and audit costs - Estimated at 0.75 MB/site/year	No additional cost as it is embedded in operation cost

Mitigation

- Improve water-use efficiency and reduce water withdrawal intensity.
- Implement water stewardship programs and water recycling initiatives

2.5 Climate-Related Opportunities

Definition : Potential on financial benefits from climate change, including revenue growth, cost reduction, and improved resilience driven by the transition to a low-carbon economy.

Opportunities :

Renewable Energy	SAF
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The transition to a low-carbon economy presents significant opportunities for the Group, particularly in renewable energy and sustainable aviation fuel (SAF). These areas are prioritized due to strong alignment with existing capabilities, including biomass-based power generation and integrated bioethanol value chains. At the same time, structural shifts in the transport sector—especially the increasing adoption of electric vehicles (EVs)—are expected to gradually reduce long-term demand for conventional fuel ethanol. In this context, SAF provides a strategic pathway to upgrade ethanol into a higher-value, low-carbon product with strong demand driven by aviation decarbonization policies. In parallel, renewable energy benefits from rising electricity demand, policy support, and price premiums, carbon credit and renewable energy certificate (REC) . Together, these opportunities enable the Group to transition its portfolio, capture new revenue streams, and enhance resilience under climate scenarios, particularly under more ambitious pathways such as NZE.

2.5 Climate-related Opportunities (Cont.)

2.5.1 Renewable Energy

Opportunity	Scope	Assumption	Short Term 2030		Long Term 2050	
			STEP	NZE	STEP	NZE
Renewable Energy Solar	Own Operation : - Increasing of revenue due to increasing of renewable volume Upstream: - Increasing of revenue due to selling biomass or solar panel Downstream : - Reduce scope 2 emission by using renewable energy	- The increased use of solar electricity driven by more ambitious targets may increase the cost of producing Mitr Phol's renewable electricity products. - Percentage increase in electricity demand = % increase in volume of renewable energy product of Mitr Phol	Low	Low	Low	Medium
		Financial impact (MB)	297	890	543	1,978

2.5 Climate-related Opportunities (Cont.)

2.5.2 Sustainable Aviation Fuel (SAF)

Opportunity	Scope	Assumption	Short Term 2030		Long Term 2050	
			STEP	NZE	STEP	NZE
SAF	Own Operation: • Revenue growth from sale of (SAF) • Diversification of product portfolio toward high-value low-carbon fuels • Utilization of existing ethanol and bioenergy infrastructure to support SAF Production Upstream : • Strengthening of sustainable agriculture practices aligned with SAF sustainability requirements Downstream : • Supporting airlines in reducing Scope 1 emissions through SAF adoption • Enabling customers to meet ICAO Policy and Net-zero aviation targets	• Increasing demand for bio-jet according to CORSIA regulation • As per Bio-jet driven by regulatory mandate for airline to reduce GHG emissions, based on IEA data expected growth in SAF sector is 4% in line with the aviation industry has pledged to reduce GHG by 50% from 2005.	-	High*	-	High*
		SAF production (MB)	-		-	8,400

Remark : Hight = High Opportunity

2.6 Transition Investment

The Group has allocated approximately THB 2.6 billion in transition investments by 2025-2030, comprising water treatment system and initial investments in sustainable aviation fuel (SAF). Enhance water treatment system (THB 0.6 billion) from Waste Stabilization Pond (WSP) system, which is consisting of a sedimentation pond, anaerobic pond, aerobic pond, and reservoir pond in sequence, to the Activated Sludge (AS) system. This upgrade improves treatment efficiency, reduces land requirements, and shortens wastewater treatment time and quality. In addition, it contributes to a reduction in indirect greenhouse gas (GHG) emissions. In parallel, THB 2.0 billion is allocated to SAF development as a strategic long-term initiative aligned with future low-carbon fuel demand. This phased allocation reflects a balance between immediate, cost-effective emissions reduction and long-term business transformation.

Period	Technology	Capacity / Scope	Investment (MB)	% Allocation	Strategic role
2025–2030	Water Treatment System : Activated Sludge	-	600	23%	Reduce Scope 1 – Improve wastewater treatment efficiency
2030 onward	SAF (pilot / early commercial)	Initial project	2,000	77%	Strategic entry into low-carbon fuels
Total			2,600	100%	

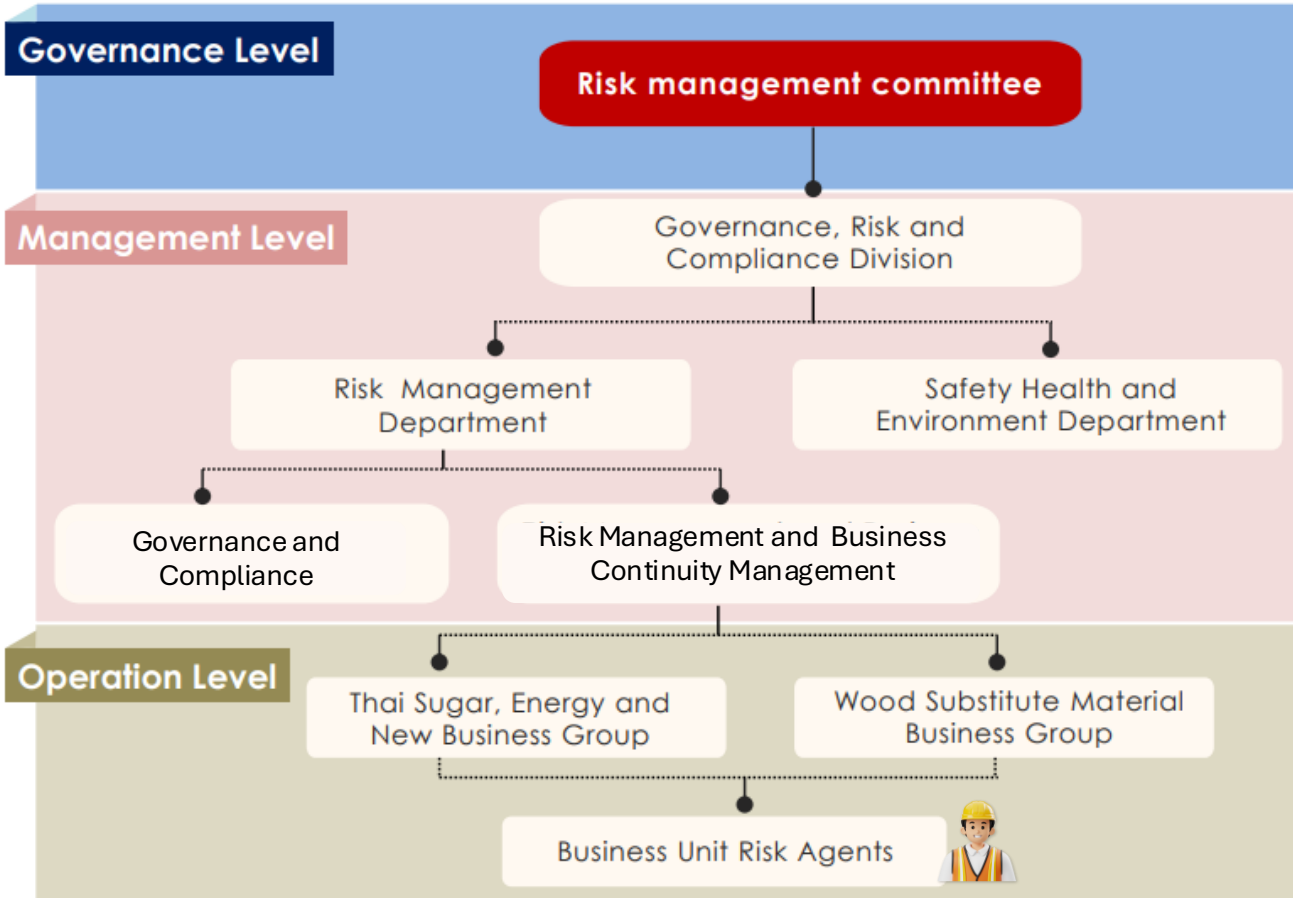
A photograph taken from an airplane window, showing the wing and tail fin of the aircraft. The wing is dark and extends from the bottom left towards the top right. The tail fin is visible at the top left. The background is a bright orange and yellow sunset sky, with a layer of white clouds visible below the aircraft. The text "3. Risk Management" is overlaid in white, bold font on the lower left side of the image.

3. Risk Management

3.1 Risk Management Overview

The Mitr Phol Group's risk management system and policies have been approved by the Board of Directors, which has delegated the Risk Management Committee (RMC) to oversee the implementation of the framework, monitor overall risk performance, and ensure key risks are managed within the defined risk appetite. As reflected in the Group's risk management framework, risk management follows a structured and continuous process covering objective setting, risk identification, assessment, response, control and reporting, and monitoring. Throughout this process, communication is embedded to ensure that risk information is consistently shared across functions. This is further illustrated through Mitr Phol Group's risk management framework as a continuous and integrated cycle, reflecting a structured approach to managing risks across the organization.





3.2 Risk Management Structure

- **At the governance level**, enterprise risk management is overseen by the Risk Management Committee (RMC), which is responsible for policy oversight, risk evaluation, and annual risk reviews. The RMC identifies potential risks and provides recommendations to minimize their likelihood and impact.
- **At the management level**, risk management and targets are cascaded from the RMC to the Governance, Risk, and Compliance Division (GRC), which translates these objectives into actionable strategies and embeds them into the organization's overall operations and risk management processes.
- **At the operational level**, risk management is cascaded to business groups. Designated business unit risk agents are responsible for responding to, monitoring, controlling, and reporting risk management level above.

3.3 Embedding Climate Change in Risk Management

2022–2023: Environmental Risk Integration

Since initiating TCFD-aligned reporting in 2022, Mitr Phol has recognized climate risk as a key component of environmental risk management. Oversight is handled by the Governance, Risk, and Compliance Division (GRC), which integrates climate risk into the enterprise risk management (ERM) framework as a strategic risk. By 2023, climate considerations had been embedded across all business units.

2024–Present: ESG Risk Integration

From 2024 onward, climate risk management has expanded into a ESG risk list. Climate risks remain overseen by the GRC and fully integrated into the ERM framework, with greater consideration of environmental, social, and governance dimensions. Risk assessments continue across all business units, maintaining focus on physical risks while increasing attention to transition risks, including policy, market, and technology changes. The WWF Water Risk Filter remains a key tool for site-level assessment, supported by strengthened mitigation and adaptation measures to manage rising climate variability.

Both period, given the Group’s predominantly agricultural value chain, physical risks from extreme weather are prioritized over transition risks . For upstream operations, including the sugar business and sugarcane farmers under operational control, the WWF Water Risk Filter is used to assess site-level water risk. Where sites are identified as water-stressed or exposed to El Niño and La Niña variability, targeted measures addressing flood and drought risks are implemented to reduce potential impacts.

2026 - RISK LISTS				
Strategy	Operation	Finance	Compliance	ESG
Raw material Security	- Waste and Pollution Management - Supply Chain Disruption & Geopolitical Volatility	- Commodity Price - Currency Exchange	- Law and Regulation - AI Regulatory Compliance	Climate Change

4. METRICS & TARGETS



4.1 Metrics & Targets

Mitr Phol measures and monitors greenhouse gas (GHG) emissions and water consumption using the operational control approach, covering all operations in Thailand. This approach provides a consistent basis for managing climate- and water-related performance across operations under the Group's control and is aligned with international standards and methodologies. GHG emissions are quantified using operational activity data and emission factors from authoritative sources, including the Thailand Greenhouse Gas Management Organization (TGO) and the IPCC, while water performance is measured based on water consumption from operational sites. During the reporting period, no material changes were made to the measurement methodologies or key assumptions, except for updates to selected emission factors based on the latest reference data. The tables below present the Group's performance against climate and water targets and highlight progress toward its long-term decarbonization and water stewardship commitments

4.1.1 Climate

Unit : tCO₂e = tonnes of carbon dioxide equivalent , MB = Million Baht

	Unit	Base Year Performance	Target 2025	Performance 2025	Status
GHG Emission Scope 1	tCO ₂ e	793,166.89	Decreased 4 % p.a.	846,930.93	Not achieved
GHG Emission Intensity Scope 1	tCO ₂ e/MB	5.65		6.84	Not achieved
GHG Emission Scope 2	tCO ₂ e	81,182.59		48,370.45	Achieved
GHG Emission Intensity for Scope 2	tCO ₂ e/MB	0.58		0.39	Achieved
GHG Emission Scope 3	tCO ₂ e	1,428,355.05	Decreased 2 % p.a.	1,539,327.14	Not achieved
GHG Emission Intensity for Scope 3	tCO ₂ e/MB	10.18		12.43	Not achieved
% Renewable Energy Consumption	%	98.38		98.88	

*See details by business sector in [Information on Environment](#) on Mitr Phol's website

4.1.2 Water

	Unit	Base Year Performance	Target 2025	Performance 2025	Status
Total water consumption	Million m ³	29.36	Decreased 4% p.a	35.38	Not achieved
Percentage of sugarcane sourced from area with water Stress	%			3	

*See the water consumption detail by business sector in [Information on Environment](#) on Mitr Phol's website

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