CKPower

IFRS S2 Sustainability Disclosure Standard 2024

Climate-related Disclosures

CKPower
ENDLESS ENERGY

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01

Introduction

Our Journey on Climate Change

CKPower place an emphasized on limiting the average global temperature increase to 1.5 °C and great focus on the business strategy which potentially adopt the sustainability solution on our future business model in term of electricity production and distribution.

We, as the electricity producer and distributor generate from various types of energy sources. The company currently invests in companies operating the business of production and distribution of electricity on three types of power plants, comprising Hydroelectric Power Plant, Cogeneration Power Plant and Solar Power Plant. In 2023, we transform with our renewable portfolio of 93%. This was achieved through the strong performance of the Company's Hydroelectric Power Plant, which employed sustainable energy without relying on volatile fossil fuel sources. This is a testament to the success in the Company's vision, which to be one of the region's largest producers of electricity from renewables with one of lowest carbon footprints by focusing on investments in the power plant producing power from environmentally friendly, clean, and renewable energy. In addition, this supported the pledge in COP28 for Global Renewables and Energy Efficiency Pledge which endorsed by 130 national governments (including Thailand).

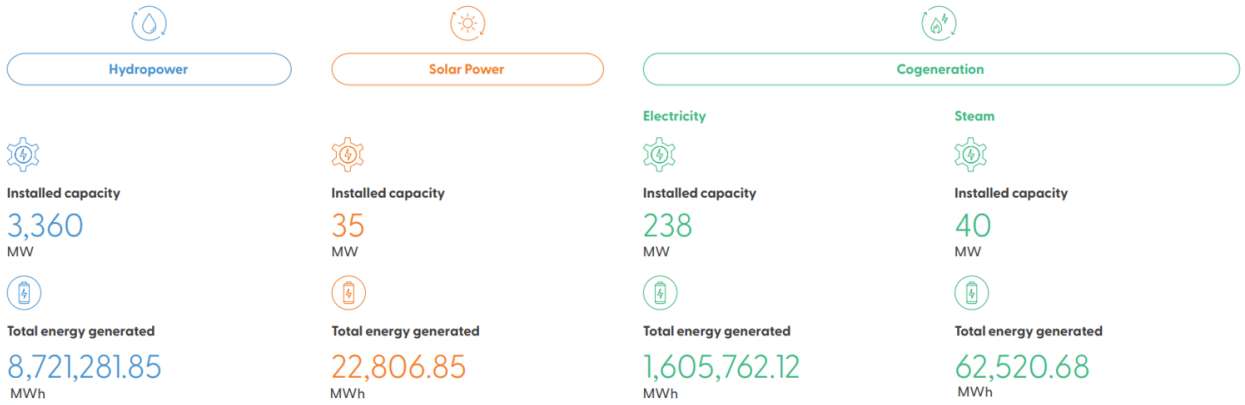


Figure 1: Installed capacity and total energy generated

Underpinning the pledge, we set our climate-related structure of our organization. Climate-related strategy is set the roadmap to response those climate-related risks and opportunities. Risk Management also take into account the climate-related risks and opportunities in the process to ensure the company mitigate and manage the risks from the materiality issues. In addition, Metrics and targets are set to deploy the climate-related activities into the organization.

CKPower voluntarily adopts the IFRS S2 and TCFD frameworks to enhance the transparency of climate-related financial disclosures. These disclosures are designed to help stakeholders and investors make informed decisions by integrating climate-related risks and opportunities into CKPower's long-term strategy and financial planning. It also complements CKPower's sustainability reporting, as "Energy Management and Climate Change" is one of CKPower high-priority ESG material issues.

This IFRS S2 Report is integrated the recommendation from Task Force on Climate-related Financial Disclosure (TCFD) and incorporating industry-based requirements derived from SASB Standards.

CKPower has governed the climate-related risks and opportunities in accordance with IFRS S2 Standards which includes four elements as shown in the **Figure 2.**

Figure 2: Climate-Related Risks and Opportunities Disclosure

02

IFRS S2 aligned Report: Governance

Climate Governance Structure (1/3)

1. Governance Level

1.1 The Roles and Responsibility

CKPower's Sustainability and Climate Change Governance structure is composed governance level, management level, operation level. The Energy Management and Climate Change Committee, overseen by the Corporate Governance, Risk Management, and Sustainable Development Committee, ensures climate-related risks are systematically integrated into CKPower's enterprise-wide risk management process. The board regularly reviews progress, ensuring accountability and alignment with the company's net-zero targets.

The governance level (Board Level), the Corporate Governance, Risk Management, and Sustainable Development Committee is overseeing sustainable development aspects (including climate-related issues). The responsibilities are reflected in the Corporate Governance, Risk Management and Sustainable Development Committee Charter. The responsibilities are such as:

1) To consider and approve policies and frameworks for climate-related issues

2) To define short-term and long-term strategies related with climate-related issues

3) To provide consultation, promotion, support of resources to delegate the right personnel to enable strategic execution throughout the company in alignment with the strategy and the company's climate-related goals under the revolving circumstances

4) To follow up, ensure and support the Company's in such matter, and enrich the participation in various projects within the frameworks of Sustainable Development and climate-related risks with relevant parties, both internal and external group of CKPower, through Corporate Sustainable Development Management and Sustainability Working Group appointed by the management

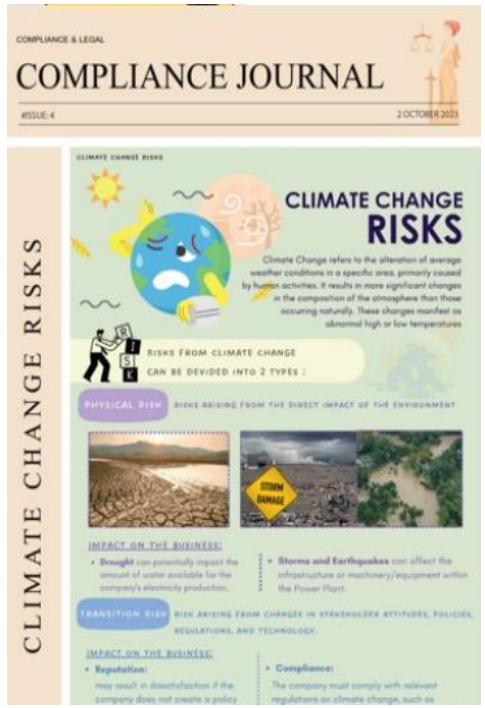
5) To report the performance to the Board of Directors on a regular basis

1.2 Progress Reporting to the Committee

The risks and opportunities with the progress on the climate-related performances will be reported through the quarterly meeting as mentioned in Corporate Governance, Risk Management and Sustainable Development Committee Charter and the Summary of the Performance of other subcommittees annual report. The charter specifies that the member shall attend the meeting at least three meetings per year. The reporting line of each level is determined in **Figure 3.**

1.3 Skill Set and Competencies

The Corporate Governance, Risk Management, and Sustainable Development Committee, comprising three directors served with their competencies and skills which can oversee and governance the climate related strategies and climate-related risks and opportunities management, reflected in their Board Skill Matrix related with Sustainable Development, Risk Management and Crisis Action and Strategic and Organizational Management. This competencies in accordance with business direction and comply with the policies, including strategies under Company's short- and long-term business plans. The further development training related climate-related strategies, risks and opportunities will be provided for all committee via Training and Talk Session, including topics climate change risks as well as climate change-related trends and opportunities, carbon credits, and energy attribution certificates.



Climate Governance Structure (2/3)

1.4 Set-up the Strategy, Decision Making, Risk Management Process and Target Setting and Progress Measurement Overseeing of the Corporate Governance, Risk Management, and Sustainable Development Committee related with Climate-related Risks and Opportunities

The Corporate Governance, Risk Management, and Sustainable Development Committee is fully committed to actively promoting, staunchly supporting, and decisively approving sustainable development initiatives. The dedication extends to endorsing outcomes derived from comprehensive climate-related risk and opportunity assessments, encompassing robust mitigation and adaptation plans.

The process for climate-related risk and opportunity identification, assessment and management are conducted regularly, in which the results are considered to trade-offs with corporate risks and the result also integrated into Enterprise Risk Management (ERM) Framework.

In addition, the Corporate Governance, Risk Management, and Sustainable Development Committee considers climate-related risks and opportunities by providing opinions on formulation of the annual risk management plans including climate-related issues, monitors and supervises the result of climate-related risks and opportunities on the quarterly basis through the reports on risks management. The climate-related risk and opportunity is used for entity strategy identification as well.

The committee oversees and considers providing opinions on formulation of climate strategy (including setting of targets related to climate-related risk and opportunities) aligned with company's business goals under the revolving circumstances. Moreover, the committee monitors the progress of targets through quarterly meetings. Relevant Key Performance Indicators are set up and deployed to key functions and employees to ensure effectiveness responding to those risks and opportunities by tie up to their performance evaluation and remuneration. The performance evaluation will be reviewed annually in order to improve its performance and maximize its effectiveness for the benefit of the company.

2. Management Level

2.1 The Roles and Responsibilities

CKPower has established the Sustainable Development Steering Committee, chaired by the company's management team and comprised of executives from all power plants, representing all relevant areas of work, See Figure 2.

The committee is responsible for the following tasks:

- Establishing strategic directions and goals that align with national and international sustainability policies and frameworks for sustainable organizational management standards.
- Providing recommendations and guidance on sustainability management to the sustainability working teams.
- Appointing the sustainability working teams of CKPower and its subsidiaries.
- Monitoring, reviewing, and evaluating the performance of the sustainability working teams of CKPower and its subsidiaries.
- Reporting the progress of sustainability management to the Corporate Governance, Risk Management, and Sustainable Development Committee and the Board of Directors.

2.2 Progress Reporting to the Committee

Progress updates regarding sustainability and climate change issues are provided to the Committee on a semi-annual basis by CKPower's sustainability working team. This ensures that the Committee is regularly informed and can offer guidance and advice on decision-making related to sustainability and climate change issues. Further details can be found in **Figure 3** Governance Structure of CKPower on **page 8** of the report.

Climate Governance Structure (3/3)

2.3 Monetary Incentives

Furthermore, executives are eligible for variable monetary incentives tied to climate-related performance, determined by the achievement of Key Performance Indicators (KPIs), such as long-term emission reduction, renewable energy capacity growth, energy consumption reduction and increase renewable electricity consumption within the organization.

3. Operational Level

3.1 The Roles and Responsibilities

Additionally, CKPower has appointed a Sustainability Supporting and Disclosure Working Team and a Plant Sustainability Working Team at each of its plants to collaboratively advance the sustainability initiatives of the CKPower Group.

The Corporate Sustainability Working Team and the Business Continuity Management Working Team are responsible for supporting efforts to increase efficiency. The Committee is tasked with overseeing climate-related risks and opportunities across CKPower's operations, ensuring alignment with corporate sustainability and climate strategies. This includes assessing climate-related risks and opportunities, creating climate risk mitigation and adaptation plans, and monitoring climate-related performance. The Committee also provides oversight for strategic business planning, budgeting, monitoring, and implementation.

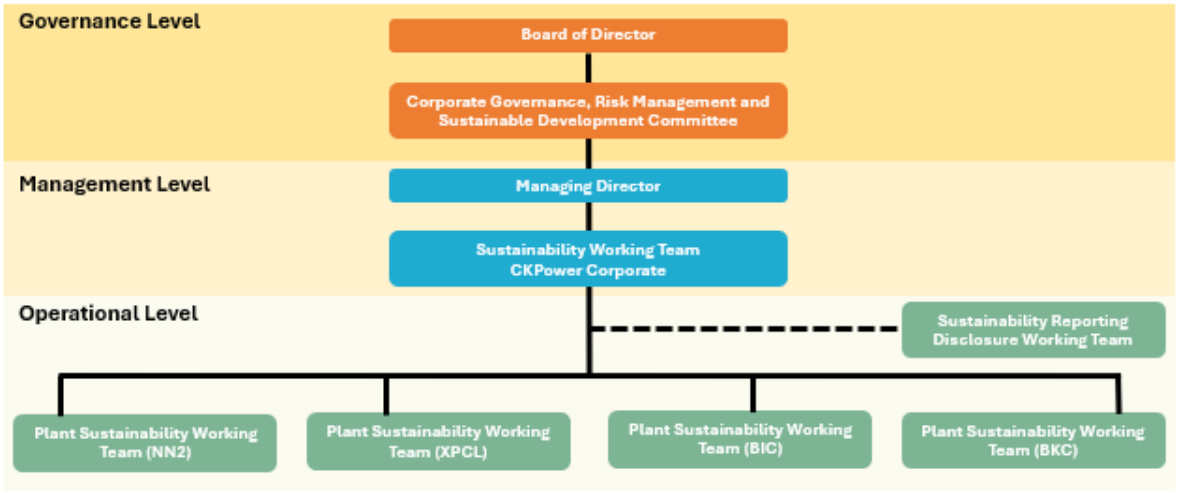


Figure 3: Structure of Sustainability and Climate Change Governance

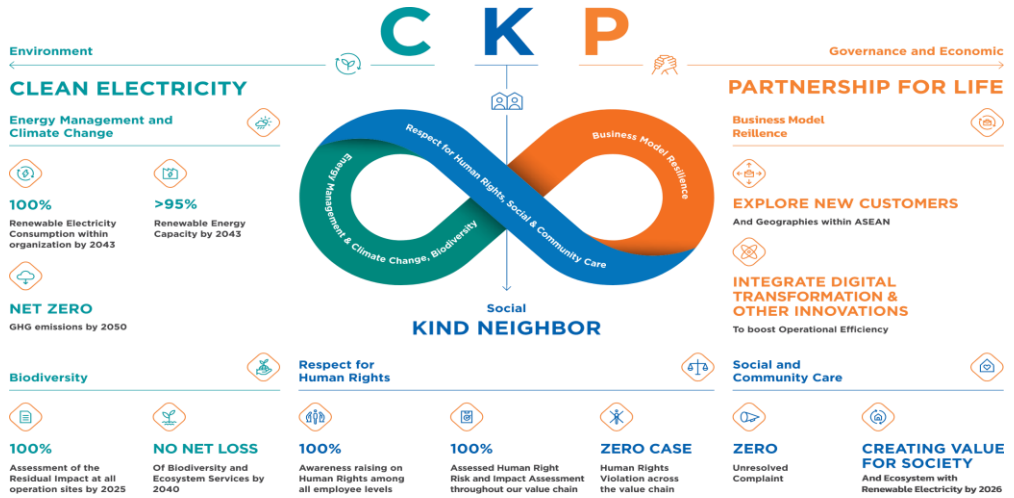


Figure 4: CKPower's Sustainability Framework

03

IFRS S2 aligned Report:
Strategy

Climate-related Risks and Opportunities (1/9)

1. CKPower's Climate-related Risks and Opportunities

CKPower recognizes the importance of climate change management and has identified it as a key materiality topic. Consequently, the company conducted a comprehensive risk and opportunity assessment analysis of all business activities along the value chain, including both core and support activities, upstream and downstream. This process aimed to gather relevant data for assessing the impact on all stakeholders involved in the value chain.

CKPower identifies both physical and transition risks through quantified scenario analysis, including pathways aligned with SSP1-2.6 and SSP5-8.5. This approach ensures that CKPower's strategy is resilient under various global warming scenarios and is aligned with achieving net-zero by 2050. Each risk was assessed in collaboration with third-party consultant to evaluate level of impacts across CKPower's operations in different scenarios aligning with Shared Socioeconomic Pathways (SSP1-2.6 and SSP5-8.5) for physical risk. The scope for analysis included value chain activities, both Thailand and Laos. Transition risks were assessed through the identification material for low economy transition risks and impacted business areas of CKPower, as well as value chain impacts to cover the risks which could potentially happen to CKPower. All those transition risks were assessed under two scenarios, IEA STEPS and APS. Both physical and transition risks were projected under two timeframes medium-term 2030 and long-term 2050. The supporting dataset for physical and transition risk are listed as shown on pages 21-22. The dataset is included the information about **current conditions** and **forecasts of future condition** as specifying for CKPower businesses. The result of CKPower's climate-related risks and opportunities are assessed to activities which applicable with **the Industry-based Guidance on Implementing IFRS S2 – Volume 32 Electric Utilities & Power Generators** as well.

The climate-related risks and opportunities were then consult with internal stakeholders who have the competencies to provide the perspective view related with CKPower businesses. The climate change strategy were consulted to linkage the idea across the business to identify the risk or seize the opportunity. The strategic decision-making is then decided by using the linkage the climate-related risks and opportunities for planning such as risk management system, target setting, workplan etc.

1.1 Physical Risk Identification

We covered the 9 climate hazards that related with climate change impact i.e. Extreme Heat, Extreme Cold, River Flooding, Extreme Rainfall Flooding, Water Stress & Drought, Coastal & Offshore, Extreme Winds & Storms/lightning and Wildfire. The assessment was analyzed under 21 assets of CKPower. The name list of assets covered on the assessment are listed as below;

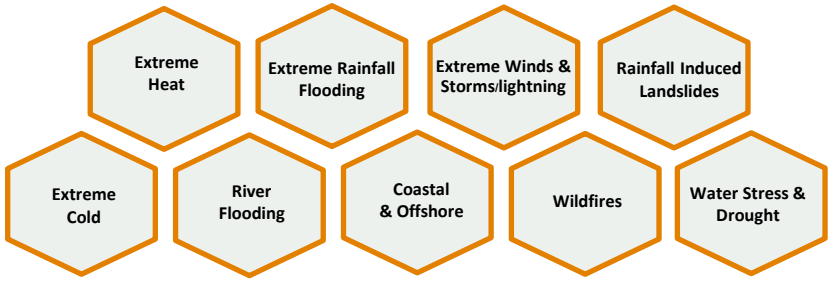


Figure 5: List of climate hazards

Table 1: CKPower assets covered by physical risk assessment

Type of Power Plant	No.	Name
Hydroelectric Power Plant	1	Nam Ngum 2 Hydroelectric Power Plant
	2	Xayaburi Hydroelectric Power Plant
Co-generation power plant	3	Bangpa-In Cogeneration Power Plant 1
	4	Bangpa-In Cogeneration Power Plant 2
Solar Power Plant	5	Bangkhenchai Solar Power Plant
	6	Phachi Solar Power Plant
	7	Banglen Solar Power Plant
	8	Phutthamonthon Sai 5 Solar Power Plant
	9	Mahachai Solar Power Plant
	10	Krathum Ban Solar Power Plant
	11	Khlong Preng Solar Power Plant
	12	Nakhon Ratchasima Solar Power Plant
	13	Chiangrai Solar Power Plant
Transmission & Distribution Lines	14	230-500 10/3 NN2 Line
	15	230-500 46/2 NN2 Line
	16	230-500 PI18 NN2 Line
	17	230-500 CT LAOS NN2 Line
	18	500 T20/3 XPCL Line
	19	500 T72/1 XPCL Line
	20	500 T138/3 XPCL Line
	21	500 T194/2 (39B/2) XPCL Line

Climate-related Risks and Opportunities (2/9)

1.2 Physical Risk Assessment Result- Qualification Analysis

Asset risk score is generally projected to increase gradually from 2030 to 2050, whereas the risk score is projected to significant change 2030 to 2050 under SSP5-8.5 scenario.

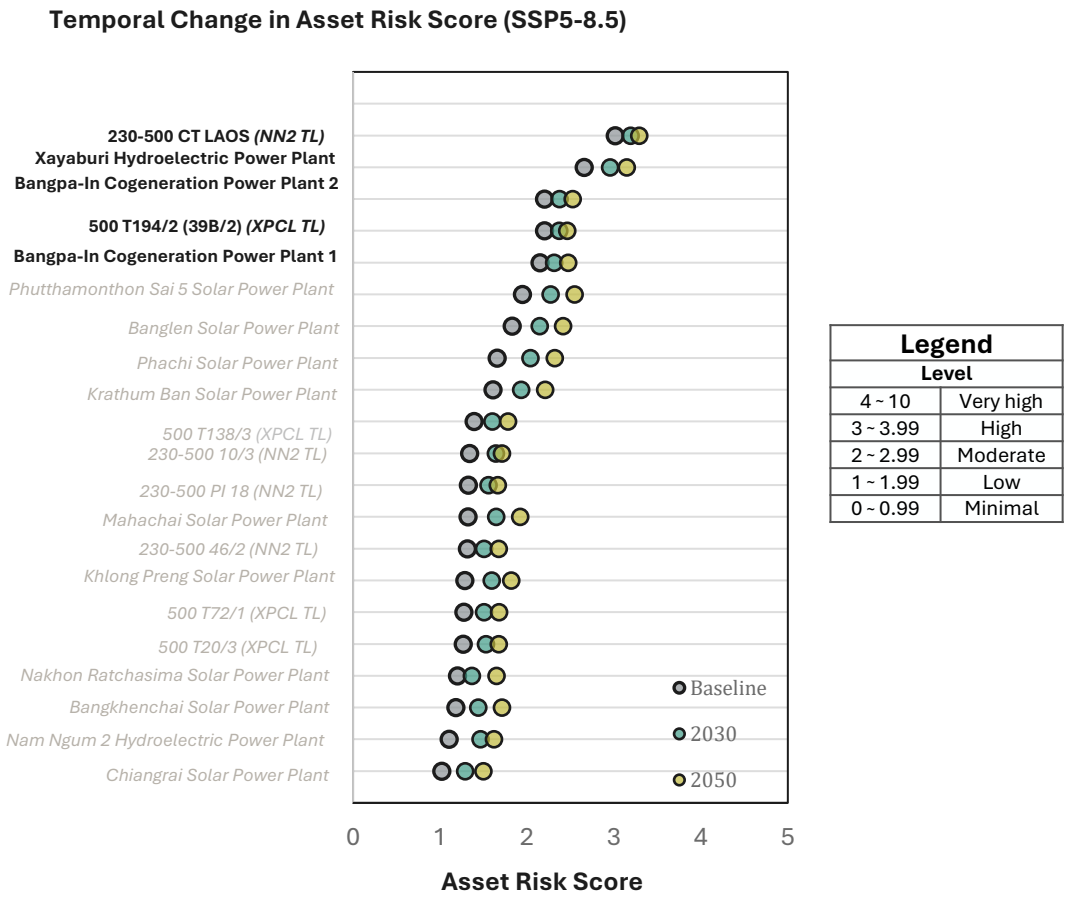


Figure 6: Hotspots of physical risks (prioritization) for CKPower assets

Both "river flooding and extreme rainfall flooding" shown highest risk score in asset type of NN2 Transmission Line, Hydroelectric Power Plant, and Cogeneration Power Plant, respectively.

All time horizons and scenarios highest asset risk score – 230-500 CT LAOS, NN2 Transmission Line located in Vientiane and Xayaburi Hydroelectric Power Plant located in Xayaburi province in Laos.

Meanwhile, Cogeneration Power Plants were considered both "river flooding" and "extreme rainfall flooding" as highest hazard-type risk in 2030-time horizon, as its has planned to retired in 2038 and 2042 for BIC1 and BIC2 plants which's highest hazard-type risk in 2050-time horizon were not consider in this assessment.

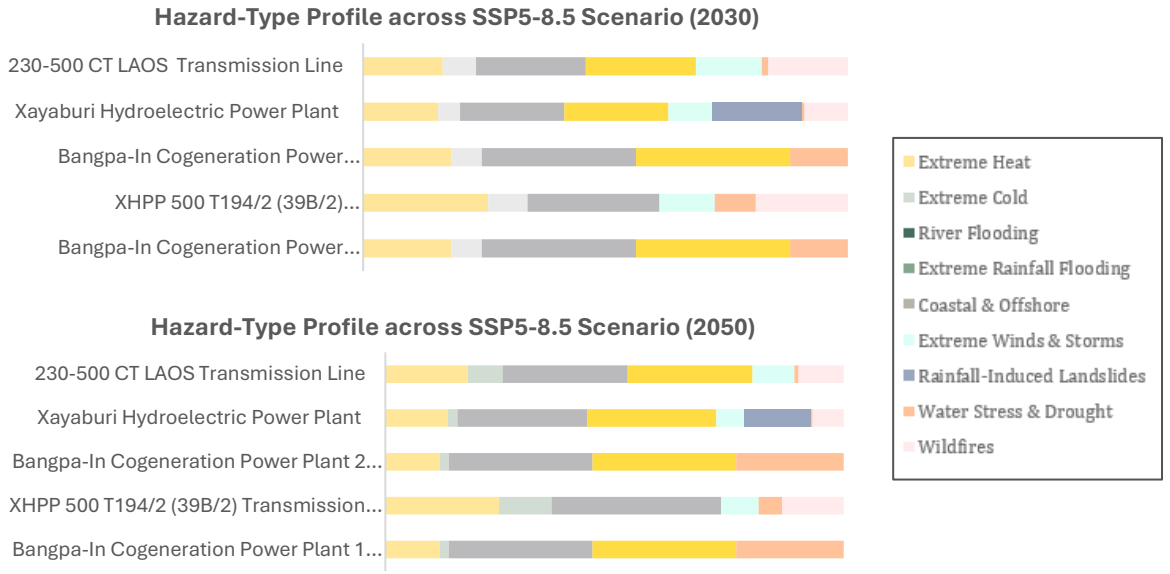


Figure 7: Hazard-Type Profile across SSP5-8.5 Scenario (2030 and 2050) for top 5 prioritized assets

Climate-related Risks and Opportunities (3/9)

1.3 Physical Risk Assessment Result - High Flow Event Estimation based on Precipitation result

The flood related event is estimated based on the precipitation indicators and other indicators for the analysis. It is assumed that the average flow rate and river flood inundation depth will increase in a similar trend (correlation). River flood depth is derived from estimated precipitation. Hence, there is linkage between precipitation and flow rate.

Information of emergency high flow event in August 2023 at Xayaburi Hydroelectric Power Plant

The emergency high-flow event occurred between August 8-9, 2023, with the daily average flow rate ranging from 12,691.37 to 12,844.21 cms.

This event led to a 30.72-hour business interruption, resulting in some revenue loss for August 2023. However, due to the high flow that year, XPCL was able to compensate by generating additional revenue from the increased inflow, which was released later in the year.

The max 5-days precipitation from historical data base and projection are applied to project the % change of future scenarios for the minimum of business day interruption from high flow event.

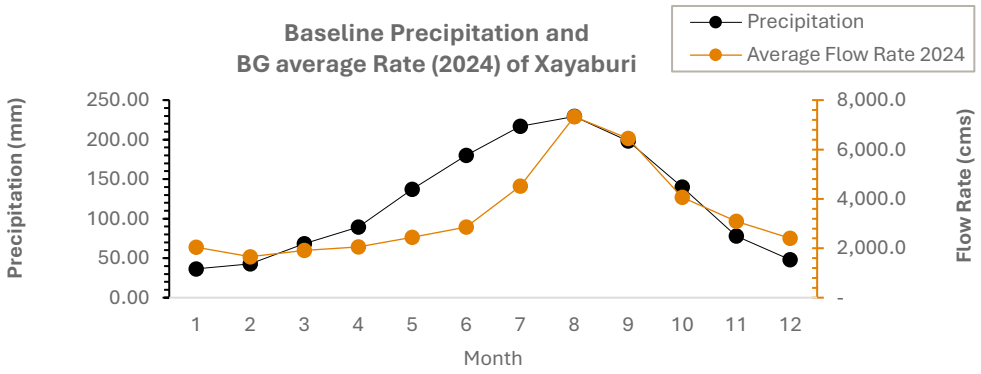


Figure 8: Baseline Precipitation and BG average Rate (2024) of Xayaburi Hydroelectric Power Plant correlation

The projected change of max 5-days precipitation is covered CKPower's strategic forecasting points which contributes the inflow of Xayaburi Hydroelectric Power Plant and cover the max 5-days precipitation over Xayaburi Hydroelectric Power Plant.

Table 2: CKPower's strategic forecasting points

Watershed	Catchment	ERM CIP data points	
		Latitude	Longitude
Chinese Watershed (US Ban Xiengkok)	Chinese-Lancang River	22.051378	100.763325
Intermediate Watershed US Luang Prabang	Chiang Saen to Pakbeng	20.293778	100.097570
Lower Watershed (DS Luang Prabang)	Luang Prabang	20.075072	102.186697
Nam Ou Watershed	Nam Ou River	21.154355	102.308621
Luang Prabang to Xayaburi Watershed	Luang Prabang to Xayaburi Watershed	19.242889	101.818444

The projected change of max 5-days precipitation from baseline showed as below table (% Change column). Assumed that, this max 5-days precipitation was the event of highest flow emergency occurred in August. Then, we mapped the event of high flow emergency event in 2023 with projection max 5-days precipitation to project the change in river flow rate.

The projected highest flow rate value (14,056.70 cms) is still below the Probable Maximum Flood (PMF) of Xayaburi Hydroelectric Power Plant which designed to be 47,500 cms.

The emergency high-flow event in August 2023 resulted in some revenue loss due to the activation of the Emergency Action Plan, which required production to stop once the flow rate exceeded 12,800 cms. However, during a similar event in September 2024, XPCL implemented a new mitigation plan that allowed operations to continue at higher flow rates (up to 18,000 cms), resulting in reduced revenue losses compared to August 2023.

The current operational flow level is revised to 17,000 cms.

Table 3: CKPower assets covered by physical risk assessment

Scenario	Timeframe	% Change *	Highest Flow Rate which projected under different scenario (cms)***	Energy generation loss due to operational stoppage	Projected Potential Revenue loss (million THB)
Baseline	actual		12,844.21 (actual)	30.72 GWh (assume stop operation 24 Hrs. from high flow rate > 12,800 cms)	66.35 (Average price 2.16 THB/kWh)
SSP5-8.5 (above 2°C, 3.3°-5.7°C)	2030	7.32	13,784.41 (stop operation since 12,800 cms)		
	2050	9.44	14,056.70 (stop operation since 12,800 cms)		

*Source: ISIMIP3a protocol and Coupled model intercomparison project 6 (CMIP6) data https://climateknowledgeportal.worldbank.org/

**Baseline Highest Flow Rate Data is from 2023 base year.

Climate-related Risks and Opportunities (4/9)

Table 4: Hotspot Physical Risk Assessment Result- Quantification Analysis

Physical risk identified	Risk that could be expected to affect to the business (Impact Description)***	Potential financial implications	Financial impact (Quantified based on SSP5-8.5 scenarios)	Management measure and adaptation plan	Cost response to response
High river flow rate event	Emergency high flow event caused a business interruption, resulting in some revenue loss. However, with the high flow in that year, XPCL can gain additional revenue from the inflow during the same period, which is released to the later time of the year.	Potential Revenue loss	66.35 million THB	- Design and implement suitable mitigation measures such as opening spill way as the normal operation activity for high river flow rate event. This is to prevent the powerhouse - Implemented a new mitigation plan that allowed operations to continue at higher flow at 17,000 cms. - Conduct implementing early warning system and collaborate with government sector for quick migration procedure. - Improved designed infrastructure to handle river at the maximum capacity at 47,500 cms. - Maintain minimum cash reserve and credit facilities in case of revenue loss. Having insurance policy is in place to cover any incident. Monitor weather condition closely to prepare for incident in advance and have operating procedures in place for working remotely in case of inaccessibility of office. - Collaborate with other stakeholders to plan for flood risk management. - Log Boom might require to be restored as the debris barrier. - Construct flood barrier and water drainage system at operational and office area including the vulnerable sites. - Set up emergency action and drill. To develop BCM for flood which may include preparation for alternative site/office/accommodation/transportation or working from home as a part of mitigation measures. The BCM shall cover drill which includes; for example, emergency response (monitoring and warning system) and crisis communication during flood incident.	2.2 million THB

Climate-related Risks and Opportunities (5/9)

1.4 Transition Risk Identification

The approach to conduct the transition risk was primarily selected the drivers by incorporating the external factors as the putting pressure to transition into low-carbon economy. We utilized the dataset from the IEA Energy Outlook 2023 datasets for transition risk assessment.

Below is the process for transition risk identification;

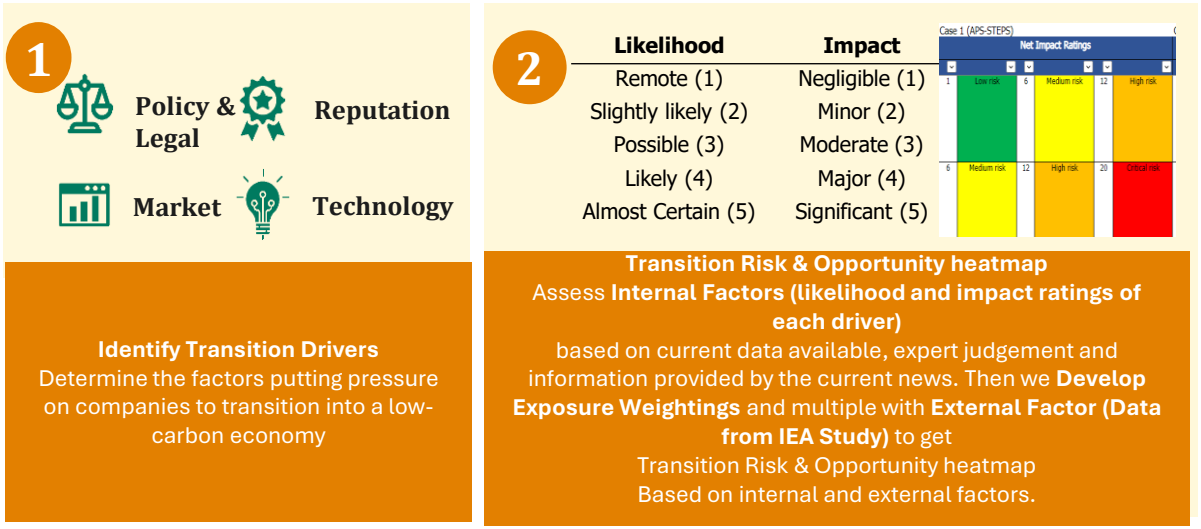


Figure 9: Process for Transition Risk Identification

The assessment is then rated the exposure weighting by combining likelihood and impact ratings of each drivers. The process is accounted the internal factors for identification. This provides an internal view of the company's inherent exposure to each driver. The exposure weightings are normalized into a scale of -1 to 1, with negative value implying a risk and positive value implying an opportunity.

Heatmap is considered internal and external data. Input from the organization and proxy data from climate scenario providers are combined.

1.5 Transition Risk Assessment Result- Qualification Analysis

Key finding demonstrates that, the opportunities in general outweigh the risks, as the world accelerates its transition pace towards a low-carbon world with the realization of the Nationally Determined Contributions (NDCs), favoring CKPower's renewables production.

Mandatory carbon pricing is among the most important risk drivers for Cogeneration (Natural Gas) business as countries will have to raise carbon prices to a much higher level to incentivize more ambitious actions and low-carbon investments that are necessary for realizing NDCs.

The energy demand change possibly presents a golden opportunity for the solar power industry. This evolving demand scenario lays fertile ground for the solar power industry. With its unmatched potential for scalability and sustainability, solar energy is uniquely positioned to meet Thailand's growing energy needs, offering a clean, renewable alternative to traditional fossil fuels.

Opportunity / Risk score key			
Higher Opp.	Mod. Opp.	Lower Opp.	Limited
Higher Risk	Mod. Risk	Lower Risk	Limited

Figure 10: Transition Risk and Opportunity Analysis

Business Drivers Screening			Hydro		Cogeneration		Solar		CKPower		Risk/ Opportunity
		Assessment	Risks & opps (APS-STEPS)		Risks & opps (APS-STEPS)		Risks & opps (APS-STEPS)		Risks & opps (APS-STEPS)		
	TCFD Category	Risk/Opportunity Description	2030	2050	2030	2050	2030	2050	2030	2050	
1	Policy and Legal	Mandatory carbon pricing				Plant Retire				Plant Retire	Risk
2	Policy and Legal	Policy change, incentives and carbon market (Energy transition - Renewable)				Plant Retire					Opportunity
3	Market	Investment (For installation & Expand renewable business)									Risk
4	Market	Increased competition of resources and market				Plant Retire					Opportunity
5	Market	Demand change (Energy Consumption Demand & Renewable Energy)				Plant Retire					Opportunity
6	Market	Enabling clean energy technologies (Funding)									Opportunity
7	Technology	Technology modernization and operational risks (Efficiency production and alternative fuel sources)				Plant Retire				Plant Retire	Risk
8	Reputation	Environmentally friendly technology and social impact									Opportunity

Climate-related Risks and Opportunities (6/9)

Table 5: Hotspot Transition Risk Assessment Result- Quantification Analysis

Transition risk identified	Risk that could be expected to affect to the business (Impact Description)	Potential financial implications	Financial impact (quantified based on APS scenario)	Management measure and adaptation plan	Timeline to response
Mandatory carbon pricing	Cogeneration (Natural Gas) business - as countries will have to raise carbon prices to a much higher level to incentivize more ambitious actions and low-carbon investments that are necessary for realizing NDCs.	Operational Expenditure	169 - 2,435 million THB	- Set up corporate energy transition budget shifting toward new NDCs e.g. renewable energy expansion between 2022 - 2030, Strategy to stop investing in fossil fuel project and to achieve net zero & GHG reduction ahead of Thai government timing. - Continuously expand the capacity of renewable energy within domestic and internal countries, reduce fossil fuel plant in the portfolio. - Set up environmental management plan of each operational sites to align with international standards and regulations. - Closely monitor government announcement for regulations, policy and news - No further investment in fossil fuel plant. - Multiple efficiency enhancement initiatives at BIC to reduce GHG Emission. Carbon Credit study for potential offset at BIC. - Conduct process of improvement to reduce GHG emission from fossil fuel plant by improving energy efficiency. - Study the adoption of Internal Carbon Pricing (ICP) to prepare for government regulations in the future and to analyze addition costs and returns from GHG emission reduction in order to formulate its GHG management plans and strategies. - Study the feasibility of Cogeneration power plant by mixing Hydrogen with Natural gas for electricity production.	2025 - 2042

Climate-related Risks and Opportunities (7/9)

Table 6: Climate-related Opportunity

Opportunity	Opportunities that could be expected to affect to the business	Potential financial implications	Financial impact (quantified based on APS scenario)	Management measure and adaptation plan	Timeline to response
Demand change (Energy Consumption Demand & Renewable Energy)	It is assumed that CKPower's current estimate of revenue will occur under the scenario of STEPS. As the electrification process accelerates under both high-carbon and low-carbon scenarios, increased power consumption from end users is expected, which will, in turn, accelerate power sales. This acceleration will be more pronounced in the APS scenario than in the STEPS scenario.	Revenue Generation	10 – 92 million THB (1-15 % estimated to increase for revenue-energy income of Solar Power Plant)	- Continuously research on the customer behavior and market trends and regularly report the findings to management body for decision making (CKP BD and Exploration team). - Research on solar farm, charging station, energy storage. - Have long-term contract with customer and prepare for renewable energy expansion. - Plant optimization and improvement.	2024 - 2050

Climate-related Risks and Opportunities (8/9)

2. Anticipated Effects of Climate-related Risks and Opportunities on the Entity's Business Model, Value Chain, Strategy and Decision-making

Nowadays, the effect from climate change can induce the adaptation of human being and business operating disruption. Thailand, the member of COP28, commits to reduce the greenhouse gas emission and implement the National Determined Contribution – NDC).

We, as the electricity power producer, ambitious to support the National Determined Contribution (NDC). Climate-related risks and opportunities were used to develop the Climate Change Strategy. We derived our **Climate Change Strategy and Increasing Renewable Energy Plans** that encompass its entire organization, to response and manage the risks arise from the climate change and seize the opportunities which can increase our business performance in term of revenue. Furthermore, We establishes our **Energy Conservation and Climate Change Policies** as guidelines for conducting the business, preventing, mitigating and assessing potential risks related with climate change.

Our plan aims to promote the transition to low-carbon businesses and society. Our climate-related targets are set to achieve the **Net-Zero Greenhouse Gas Emission by 2050**. The Energy Management and Climate Change Roadmap was defined. CKPower is driven by the concept of "energy transition" and focuses on producing and transitioning to renewable energy sources such as hydropower and solar energy. We plan to expand our businesses to be more sustainable such as planning to expand the renewable electricity plants which aims to sell the Renewable Energy Certificates (RECs) to the Electricity Generating Authority of Thailand (EGAT) and **increase the electricity production capacity from renewable energy to be more 95 percent within 2043.** In addition, we plan to promote and support the development in innovation for energy consumption reduction, increasing electricity production efficiency, raising the awareness of energy conservation throughout the value chain etc. Our plan **includes promoting 100 percent Renewable Electricity Consumption within Organization by 2043.** Moreover, CKPower supports the funding for renewable energy initiatives, these institutions have introduced green bonds.

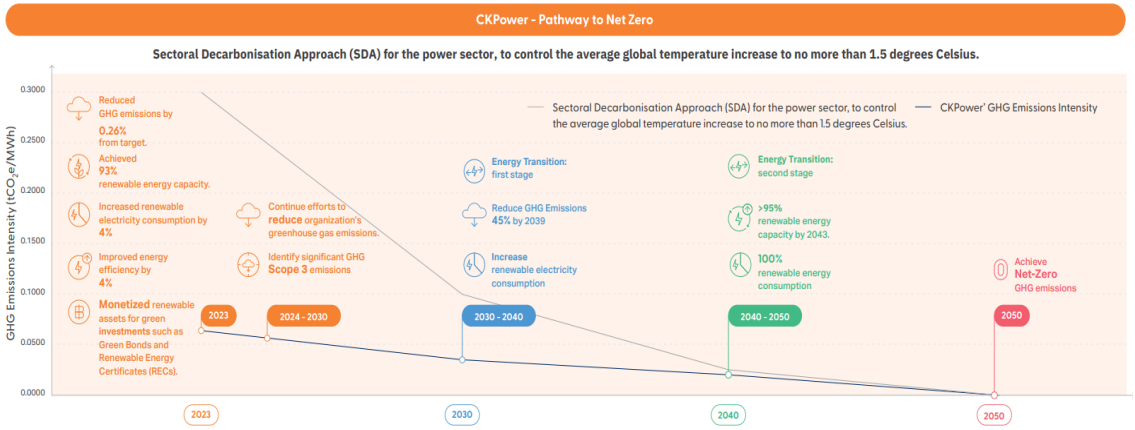


Figure 11: CKPower Group's energy transition pathway

In 2023, Xayaburi Power Co., Ltd. (XPCL) issued green bonds valued at THB 3,500 million. These bonds have a maturity of three years and were issued under a framework verified by Det Norske Veritas (DNV), a globally recognized accreditor. This framework aligns with the 2021 Green Bond Principles and the 2018 ASEAN Green Bond Standards. The issuance of these green bonds earned XPCL two prestigious awards: the Best Green Bond Hydropower Plant Framework Award at the International Finance Awards, organized by International Finance Magazine, a leading business and finance publication, and the 'Most Sustainable Hydro Power Company' at the Global Economics Awards in the Utility & Energy category, hosted by The Global Economics, a prominent UK finance magazine.

CKPower is studying the adoption of Internal Carbon Pricing (ICP) to ensure proper implementation within the organization, prepare for government regulations, and analyze additional costs and returns from GHG emission reduction in order to formulate its GHG management plans and strategies.

For more details on our **Climate Change Strategy**, please see Link for Energy Management and Climate Change Website and see Link for our 2023 Sustainability Report.

Climate-related Strategy (9/9)

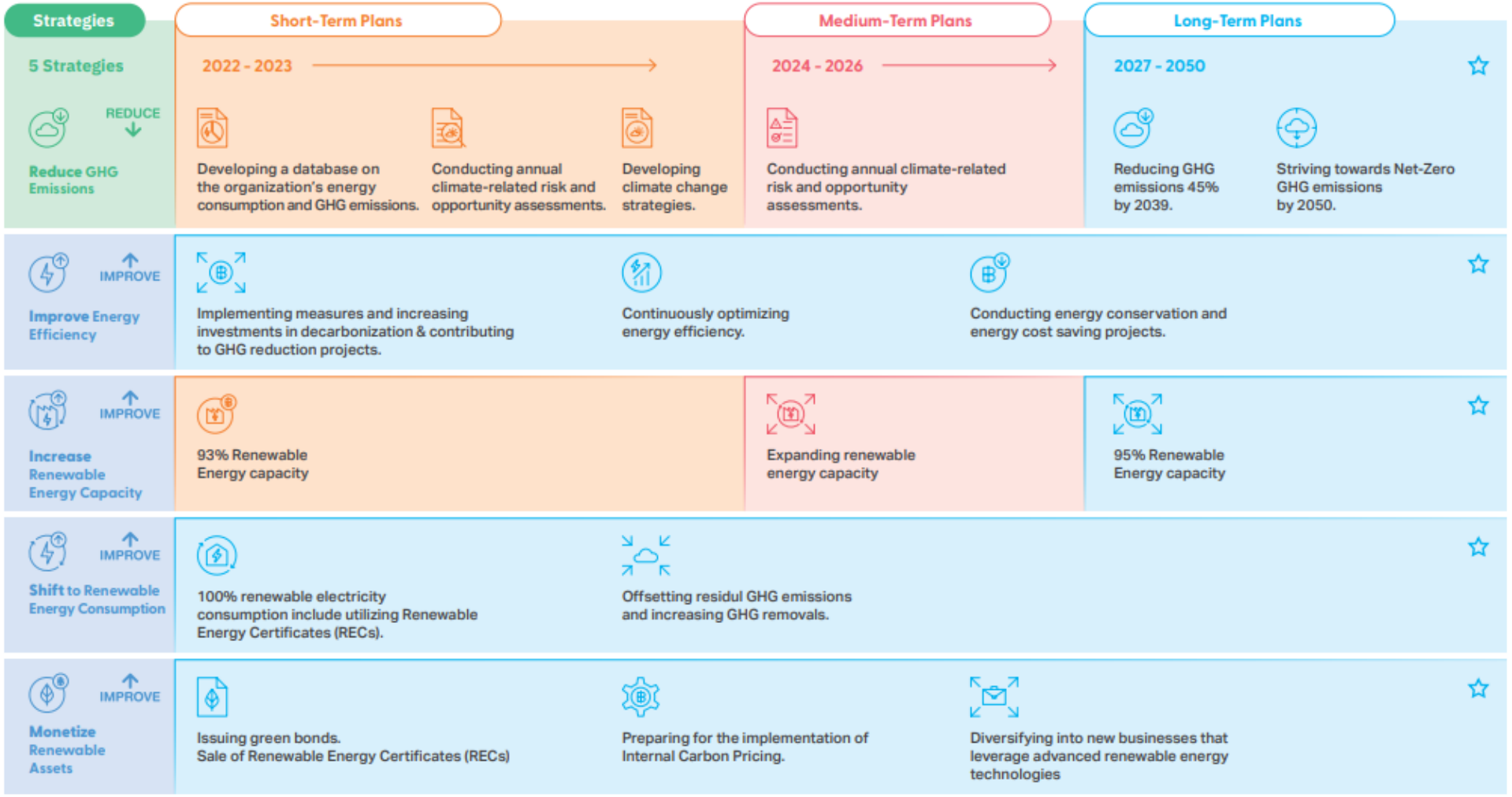


Figure 12: Climate-related Strategy

04

IFRS S2 aligned Report: Risk Management

Climate-related Risk Management (1/3)

1. Inputs and Parameters Uses for Risks and Opportunities Assessment

In 2023, CKPower conducted climate-related risk assessment by identifying relevant physical and transition risks with reference from various sources, ranging from scientific publication, global trend, emerging regulations, and news.

The example of data providers which are used for physical risk assessment such as;

Table 7 Example of data providers for physical risk assessment

Data Provider	Indicator
Coupled model intercomparison project 6 (CMIP6) data, extracted from inter-sectoral impact model intercomparison project (ISIMIP) downscaled global climate models (GCMs)	• Warm spell duration index (extreme heat) • Cold spell duration index (extreme cold) • Forest fire danger index (wildfires) • Maximum flooding inundation depth (extreme rainfall and river flooding projections) • Rainfall-induced landslide index (landslides)
World Resources Institute	• Maximum coastal flooding inundation depth (coastal & offshore) • Water Stress Index (water stress & drought)
Fathom-Global 2.0	• Maximum flooding inundation depth (extreme rainfall and river flooding baseline)
NASA	• Rainfall-induced landslide index (landslides)
European Space Agency	• Maximum burned area (wildfires for baseline only)

The company then screened and short-listed the relevant risks which potentially impact to CKPower. This was to ensure that each risk/driver identified not only relevant but also comprehensive in covering the various view of physical/transition risks. The scope of assessment was covered all operations of CKPower, including upstream and downstream.

2. Scenarios and Timeframes Uses for Risks and Opportunities Identification

Regarding the Paris Agreement, around 200 countries agreed to limit global warming to no more than 2 degrees Celsius by 2100. Also, pursuing efforts to limit the temperature increase to 1.5 degree Celsius above or pre-industrial levels. Thailand in line with the Paris Agreement, intends to reduce its greenhouse gas emissions by 20 percent from the projected business-as-usual (BAU) level by 2030.

CKPower, We, as the electricity power producer, prepare ourselves to support the National Determined Contribution (NDC) and Paris Agreement. We focus on the actual and potential projected trends of climate-related risk and opportunity via climate scenario analysis. This allows company to explore and develop an understanding of how the physical and transition risks of climate change may impact businesses, strategies, and financial performance over time.

Each risk was assessed in collaboration with third-party consultant to evaluate level of impacts across CKPower's operations in different scenarios aligning with Shared Socioeconomic Pathways (SSP1-2.6 and SSP5-8.5) for physical risk. The scope for analysis included value chain activities. Physical risk was used Climate Impact Platform for the analysis. Transition risks were assessed through the identification material for low economy transition risks and impacted business areas of CKPower, as well as value chain impacts to cover the risks which could potentially happen to CKPower. All those transition risks were assessed under two scenarios, IEA STEPS and APS. The risk and opportunity assessment is impacted by two variables – intensification of climate drivers in a low carbon economy (APS scenario) compared to the base case (STEPS scenario) as well as the exposure ratings ("likelihood X impact") of each climate driver based on our judgement of the likelihood of a driver affecting CKPower and the associated magnitude of impact on CKPower's business should it happen.

Both physical and transition risks were projected under two timeframes medium-term 2030 and long-term 2050. The consolidated outcomes were taking into consultation with internal stakeholders which enables the company to be aware and understand the impacts of key risks and also conduct a systematically review on risk management strategies and approaches across the business. More information is presented on page 22-23.

Climate-related Risk Management (2/3)

3. Nature, Likelihood and Magnitude Assessment

3.1 Physical Risks

The nature, likelihood, and magnitude of the effects of those risks in qualitative factors were assessed through the Climate Impact Platform (CIP) for physical risk. The assessment of climate risks in CIP is a two-way process. It evaluated both the significance of the risk itself and the vulnerability of the assets of the company. The evaluation was then interpreted into risk scores.

Risk scores were calculated for both baseline (present day) and future, projected timeframes. The differences in these risk scores were then used to identify the magnitude of change between time periods.

3.2 Transition Risks

The approach to conduct the transition risk was primarily selected the drivers by incorporating the external factors as the putting pressure to transition into low-carbon economy, to determine whether it presents a risk or an opportunity for CKPower's business. The data support is referred to IEA World Energy Outlook 2023 datasets.

The transition risk & opportunity heatmap is then conducted based on the assessing the internal factors (likelihood and magnitude ratings of each selected driver). The input data is provided as the internal input from internal stakeholders who have the competencies to provide the perspective view related with CKPower business and strategy were consulted to linkage the idea across the business to identify the risk or seize the opportunity.

Relevance weightings were scaled and applied to each scenario data value, depending on the commercial importance of the indicator to the portfolio sector. Then, the weightings range from high risk to high opportunity were considered, called exposure rating (used the combination of likelihood and impact ratings to generate).

Risk				Opportunity		
High Relevance	Moderate Relevance	Low Relevance	Neutral	Low Relevance	Moderate Relevance	High Relevance

Figure 13: Exposure Rating

4. Prioritization of Climate-related Risks Relative to Other Types of Risks

The identified climate-related risks were prioritized in accordance with corporate risk matrix, which include several aspects—i.e. financial, operational, strategic, and compliance aspects. The strategies and management approaches of these risks were defined as well as integrated into Enterprise Risk Management (ERM) framework as corporate risks.

Furthermore, CKPower conducts risk analysis based on risk assessment criteria, which take into account the type and severity of impact in conjunction with the likelihood of such impact and are divided into five levels of risk exposure ranging from very low to very high. The overall risk level considered to be within the risk appetite/risk tolerance is the medium or low level. For risks that exceed the risk appetite, CKPower will formulate additional risk mitigation plans to manage such risks as well as designate responsible persons and specify completion time. More details please refer to Link

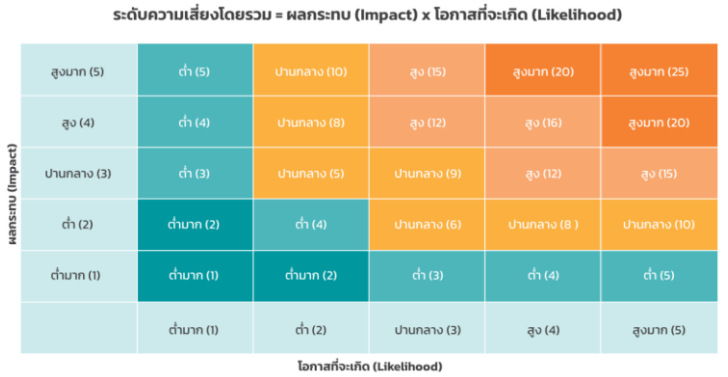


Figure 14: Risk Prioritization of CKPower

Climate-related Risk Management (3/3)

5. Managing the Climate-related Risks

By making decision to mitigate risk, CKPower cascades climate-related risks to company executive members and site representatives for decision making and to validate that the management strategies are appropriate. This process was done on an annual basis to systematically review and update to be in line with internal and external context. Relevant Key Performance Indicators are set up and deployed to key functions and employees to ensure the effectiveness of risk management, which are reviewed on an annual basis.

6. Monitoring the Climate-related Risks

CKPower regularly conducts climate-related risk assessments in line with the IFRS S2 and TCFD frameworks. By incorporating both physical and transition risks into the company's Enterprise Risk Management (ERM) framework, CKPower ensures a proactive approach to mitigating climate risks while capitalizing on opportunities from the energy transition. Additionally, progress updates regarding sustainability and climate change issues including risks are provided to the Sustainable Development Steering Committee on a semi-annual basis by CKPower's sustainability working teams. This ensures that the Committee is regularly informed and can offer guidance and advice on decision-making related to sustainability and climate change issues.

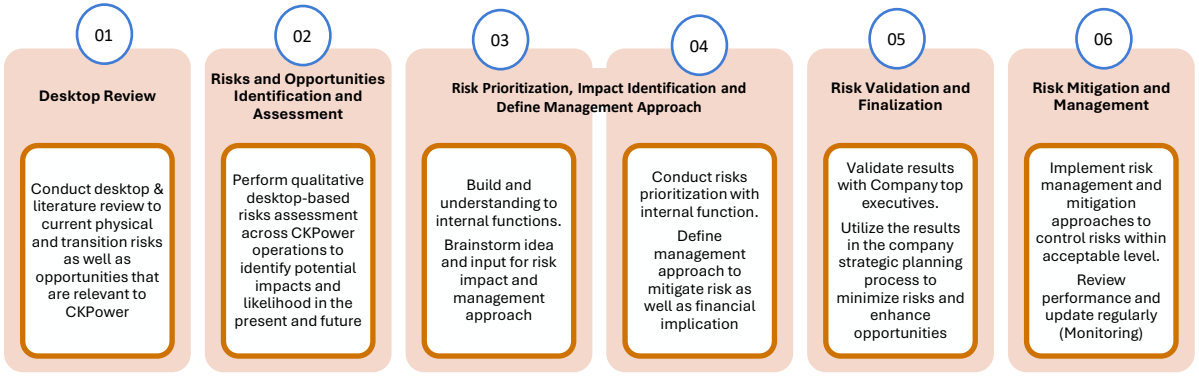


Figure 15: Climate-related Risk Management Process

7. The Process to Identify, Assess, Prioritize and Monitor Climate-related Opportunities

The opportunities are identified through both climate physical and transition issues with reference from various sources of information; e.g. literature review, peer benchmarking etc. The example of data providers which are supported for opportunity identification such as IEA World Energy Outlook 2023 datasets. Then, the information was matched with CKPower business context. Meanwhile, internal stakeholders who have the competencies to provide the perspective view related with CKPower business and strategy were consulted to linkage the idea across the business to seize the opportunity. Climate-related scenarios analysis was reviewed to project trend of the risks in various scenarios and timeframes against the list of opportunities. The objective is to ensure the possibility of the selected opportunities compare to the risk which could potentially happen.

The process for climate-related risk and opportunity identification, assessment and management are conducted regularly, in which the results are integrated into Enterprise Risk Management (ERM) Framework by embedding into corporate risks including strategic and operational risks following the **Figure 16.**

Accordingly, these risks were then translated into overall risk management framework under Plan-Do-Check-Act (PDCA) principle, to set up and define roadmap and Key Performance Indicator (KPI) to effectively implement risk management across the company. In addition, CKPower has actively taken actions to identify key strategies to not only manage these risks but also consider opportunities arising from these risks, which could lead the company into more advantageous position in the industry.

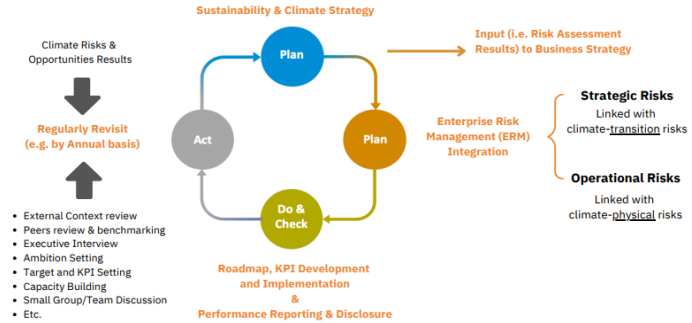


Figure 16: The integration of climate-related risk into CKPower's risk management process

05

IFRS S2 aligned Report: Metrics and Targets

Climate-related Metrics (1/3)

We also recognize that, our business operations can be a part of climate change impact. Consequently, we derives our climate-related metrics and targets which is reference to IFRS S2 cross-industry metric categories and Industry-Based Guidance.

GHG emission related indicators are measured in accordance with internationally recognized standards to ensure quality of performance monitoring and reporting. GHG inventory methodology is aligned with the GHG Protocol Corporate Accounting and Reporting Standard by WRI and WBCSD, in which the emission factors are taken from multiple sources including the Sixth Assessment Report (AR6) of IPCC, and national sources (Thailand Greenhouse Gas Management Organization or TGO and Ministry of Energy of Thailand). Our approach on GHG accounting is as **Operational Control Approach.** Climate-related metrics are shown as the below details;

Table 8: Key climate-related metrics and targets of Direct (Scope 1) and Indirect (Scope 2) emissions

2023 Key Metrics	Units	2023 Total	CKPower Group	
			consolidated accounting groups (own operation, subsidiaries)	other investees (joint venture, associate company etc.)
Direct GHG emission, Scope 1	tCO_2e	719,930.32	719,482.72	447.60
Indirect GHG emission, Scope 2 (from EGAT contractual Instrument)	tCO_2e	1,851.15	1,786.07	65.08
- Scope 2: Location-based	tCO_2e		1,786.07	65.08
- Scope 2: Market-based	tCO_2e		1,786.07	65.08
GHG Intensity Emission (Scope 1&2) per total energy generated	tCO_2e/MWh	0.0693		

Remark:

(1) The data from **other investees** (joint venture, associate company etc.) only included **Xayaburi Power Company Limited (XPCL).** Other joint ventures/associated companies are not included in 2023 reporting scope.

(2) The data of **consolidated accounting groups** is included Nam Ngum 2 Power Company Limited (NN2), Banpa-in Cogenneration Limited (BIC), Bangkhenchai Company Limited (BKC) and CKP Head Office.

Regarding our GHG emission against target, the result is met the 2023 target we have set. This is done through our various initiatives such as cascading the climate-related metrics into functional and individual KPIs of CKPower employee and are directly linked to monetary incentive as part of their performance evaluation in order to drive goal achievement.

CKPower has studied the adoption of Internal Carbon Pricing (ICP) to prepare for government regulations in the future and to analyze addition costs and returns from GHG emission reduction in order to formulate its GHG management plans and strategies.

Additionally, we place an emphasize on our upstream and downstream GHG emission. CKPower starts to collect the GHG emission Scope 3 data in 2023. The primary focusing activity is Category 3: Fuel- and Energy-Related Activities not Included in Scope 1&2.

Table 9: Corporate Value Chain Scope 3 Emission

Scope 3 Emission	2023 GHG emission (tCO_2e)
Category 3: Fuel- and Energy-Related Activities (Not Included in Scope 1 or Scope 2)	119,586.41
- Transmission & Distribution losses of purchased electricity	365.49
- Upstream GHG emission from fuel uses	119,220.92

Furthermore, we derived our environmental metrics related with climate-relate issues such as water consumption, energy consumption etc. which are disclosed in our CKPower's Sustainability Report and our corporate website.

Table 10: Example of Energy Management Metrics related with climate-related metrics

Key Metrics	2023 Target
Renewable Energy Capacity (%)	93
Renewable Energy Consumption within the organization (%)	92

Climate-related Metrics (2/3)

CKPower, we produces and distributes the electricity generated from various types of energy sources. The company currently invests in companies operating the business of production and distribution of electricity on three types of power plants, comprising Hydroelectric Power Plant, Cogeneration Power Plant and Solar Power Plant.

The products produced by CKPower include electricity and steam, both of which need the distribution systems with reliability and availability to reach its customers. The electricity will be transmitted through the Transmission Line, with a Substation stabilizing the voltage before supplying electricity, resulting in steady electricity transmission. As for industrial steam supplied by CKPower to customers of Bangpa-in Cogeneration Power Plants within the Bangpa-in Industrial Estate, it will be conveyed through the pipeline whose pressure and temperature must be adjusted to satisfy the needs of customers.

From our climate-related risks and opportunities analysis, the result show the percentage of our assets vulnerable to climate-related physical risks and aligned business types with transition risks & opportunities as below;

Table 11: The amount and percentage of assets vulnerable to climate-related physical risk

Asset	Asset	Percent (%)
Total Asset	21 Assets	100
Assets vulnerable to climate-related physical risk	2 Assets	9.52

Assets vulnerable to climate-related physical risk is counted at “High and very high level” of risk score

Table 12: The amount and percentage of business aligned with climate-related transition risk & opportunities

Asset	Business type
Business types aligned with climate-related risks – transition risk	Cogeneration Power Plant
Business types aligned with climate-related opportunities	Solar Power Plant and other renewable power plant

Capital deployment — the amount of capital expenditure, financing or investment deployed towards climate-related risks and opportunities

Table 13: The amount of capital deployment

Detail of Capital Expenditure	Type of Response (Mitigate/Support)	Amount (THB)
Log Boom Restoration	Mitigate	2.2 million THB

Climate-relate Targets (3/3)

Regarding the GHG emission and other metrics related to climate change issue, we derives our targets both short-term and long-term, aiming to reduce GHG emission and increase the proportion of renewable energy consumption.

Our scope of GHG emissions cover all business operations which is calculated based on the GHG Protocol Corporate Accounting and Reporting Standard covered 7 greenhouse gases. Since 2021, GHG emissions were verified by an independent third-party in line with GRI Standards (GRI 305-1 and 305-2). The climate-related targets ambitious to support the National Determined Contribution (NDC) and the pledge in COP28 for Global Renewables and Energy Efficiency Pledge which endorsed by 130 national governments (including Thailand), as well as in line with the global community's intentions as outlined in the Paris Agreement, which seeks to limit the global average temperature increase to no more than 1.5 degrees Celsius, supporting Sectoral Decarbonisation Approach (SDA).

Table 14 : Climate-related Targets

Key Performance Indicator	Unit	Baseline		Target
		Value	Baseline Year	
Absolute GHG Emission (Scope 1 and Scope 2)	tCO_2e	721,310.00	2021	To achieve Net Zero GHG Emission by 2050
Intensity GHG Emission	tCO_2e/MWh	0.07	2021	
Installed Capacity Renewable Energy	% of portfolio	89	2021	95% by 2043
Renewable Electricity Consumption within organization including REC	%	89	2021	100% by 2043

CKPower's performance against each climate-related target can be found at our 2023 sustainability report.

Moreover, CKPower has identified opportunities to diversify its business into low-carbon products that correspond to changes in customer behaviors and global energy consumption trends. The company plans to participate in the voluntary environmental attribution market by generating carbon credits and Renewable Energy Certificates (RECs) where applicable as financial opportunities. A summary of climate-related risks can be found on pages 17 of the report.