

TRANSFORMING TOMORROW

► Pathway to net zero

Sustainability Report 2022

COULD THE WORLD RUN ON 100% RENEWABLE ENERGY?

CLEAN ELECTRICITY ► ∞

To endless renewable energy. We strive toward Net Zero GHG emissions by driving clean renewable energy for better tomorrow and sustainable future.



WHAT IF WE CAN SHARE OUR DREAM?

KIND NEIGHBOR ► ∞

Better Quality of life for all. We aim to create value to communities near and far, and fully support human rights and equality throughout our value chain.



WHAT MAKES A COMPANY BETTER COMPANY?

PARTNERSHIP FOR LIFE ► ∞

We adapt, develop, and build partnerships.
We welcome new generations to participate
in tackling challenges and seizing new opportunities
to deliver clean energy for the better world.

CKPOWER TRANSFORMING TOMORROW PATHWAY TO NET ZERO

RENEWABLE ELECTRICITY FOR A SUSTAINABLE FUTURE ► ∞

We commit to strengthen energy stability and strive to lead the region in producing renewable energy to help reduce global warming and build stable and sustainable future.

VISION ► ∞

TO BE A LEADING
POWER BUSINESS COMPANY IN
THAILAND AND ASEAN REGION
WITH THE EFFICIENT OPERATION



OUR MISSION ► ∞

01.

TO GENERATE AN OPTIMAL,
STABLE AND FAIR RETURN
FOR SHAREHOLDERS.



02.

TO BE RESPONSIBLE
TO THE ENVIRONMENT,
COMMUNITY AND
ALL STAKEHOLDERS.





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MESSAGE FROM THE MANAGING DIRECTOR



Thanawat Trivisvavet
Managing Director

Dear Shareholders and Stakeholders,

“Renewable Electricity towards a Low-carbon Society” is one of CKPower Group’s vision, aimed at combating climate change and is a crucial strategy in achieving our long-term goal of achieving net-zero greenhouse gas emissions by 2050. In 2022, as one of the largest producers of electricity from renewable energy with the lowest carbon footprint in the region, CKPower fulfilled its commitments in a tangible manner by initiating various GHG reduction projects and setting a target to increase renewable energy capacity from 89% to 95% by 2024.”

In addition, our company has started implementing a sustainable strategy framework, consisting of three main strategies: “C-K-P”, covering important issues in the dimensions of environmental (C – Clean Electricity), social (K – Kind Neighbor), and economic and governance (P – Partnership for Life), as well as established concrete five-year targets and action plans (2022-2026). It is CKPower’s conviction that its sustainable business strategies will help minimize negative impacts and amplify positive impacts on both the business and all stakeholders across the value chain.

For the past 11 years, the CK Power Group has been driving its organization to become one of the largest producers of renewable electricity in the region. In 2022, we were honored with the “SET Awards 2022” in the Sustainability Excellence category, Rising Star, as well as being selected for the ESG Emerging List and the Sustainability Disclosure Recognition award for outstanding sustainability disclosure by ThaiPAT Institute. Additionally, we have continuously received an “Excellent” rating in corporate governance assessment by the Thai Institute of Directors (IOD) for the past 5 consecutive years. The accolades reflect CKPower’s business direction and attest to its commitment to achieving a balance between business operations, environmental sustainability and social responsibility, and corporate governance. To amplify

—
“Renewable Electricity towards a Low-carbon Society” is one of CKPower Group’s vision, aimed at combating climate change and is a crucial strategy in achieving our long-term goal of achieving net zero greenhouse gas emissions by 2050. In 2022, as one of the largest producers of electricity from renewable energy with the lowest carbon footprint in the region, CKPower fulfilled its commitments in a tangible manner by initiating various GHG reduction projects and setting a target to increase renewable energy capacity from 89% to 95% by 2024.
—



**Increase renewable
capacity to**

95%

by 2024



—

It is CKPower's conviction that its sustainable business strategies will help minimize negative impacts and amplify positive impacts on both the business and all stakeholders across the value chain

—

our positive impacts on an international scale, CKPower has also joined United Nations Global Compact since 2020 and continues to play a vital role in advocating its 10 principles on human rights, labor, environment, and anti-corruption efforts.

Furthermore, CKPower promotes a sense of consciousness in regard to natural resources and environmental conservation and encourage employees' participation in this aspect throughout the organization. This includes opening opportunities for employees to contribute their knowledge and creativity in developing projects and innovations that focus on energy conservation and reducing greenhouse gas emissions. As a result of these efforts, the Company won the Asian Power Awards for the third consecutive year and was certified as a climate action leading organization in greenhouse gas management.

With regard to social and community care, CKPower has instilled a culture of giving back into the DNA of our staff, leveraging on our expertise in renewable energy, to enhance society that aligns with Sustainable Development Goals (SDGs). CKPower is aimed at creating sustainable value for society as well as bringing light along with a better quality of life to communities in both Thailand and the Lao PDR through the "Hinghoi" Project, which has been carried out for the seventh consecutive year under the strategy of "Competency – Co-Creation – Cooperation – Connection". In 2022, the company was honored with the Asia Responsible Enterprise Awards for the exceptional social empowerment efforts, making CKPower an exemplary organization in promoting social sustainability.

On behalf of the management team, I would like to express my heartfelt gratitude for the unwavering trust and support continuously given to CKPower, as well as the valuable contribution of our employees who are a key driving force for the company, especially during challenging times with economic volatility that has impacted the World. This is a true testament to the capability and resilience of CKPower, which has enabled CKPower to continue to grow and create value for all stakeholders throughout the value chain.

I am filled with a great sense of pride and gratitude that all personnel of CKPower have executed their works and duties with utmost care and to the best of their abilities with the shared goal of creating a better quality of life for the society and advancing the organization towards Net-Zero GHG emissions future. This is a goal that we share, and we are committed to achieving it. CKPower, Renewable Electricity for a Sustainable Future

Thanawat Trivisvavet
Managing Director



ABOUT THIS REPORT



About This Report

CK Power Public Company Limited (hereinafter referred to as the “Company” or “CKP”) has prepared this 2022 annual sustainability report to disclose its performance in environmental, social and governance and economic dimensions under its corporate governance system, reflecting our sustainable development practices in key materiality that are important for business operations and stakeholders. The report covers our performance from January 1 to December 31, 2022. Reported and published annually since 2020, the scope of the sustainability report includes the performance of companies under CK Power Public Company Limited group and companies in which CK Power Public Company Limited holds more than 50% of the shares or has management control. The report is in accordance with the internationally recognized Global Reporting Initiatives Sustainability Reporting Standards (GRI Standards) and presents the Company’s operations in alignment with the United Nations Sustainable Development Goals (SDGs). The content of this report is based on the assessment of the Company’s 13 key materiality issues, and some of the content is disclosed on the Company’s website under “Sustainable Development” section.

Report Verification

To improve the reliability and compliance with GRI Standards, the indicators disclosed in this sustainability report have been verified with limited assurance by a third-party verifier - EY Office Limited.

GRI Number	GRI Detail
GRI 302-1	Energy consumption within organization
GRI 305-1	Direct (scope 1) greenhouse gas emissions
GRI 305-2	Energy indirect (scope 2) greenhouse gas emissions
GRI 305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions
GRI 306-3	Waste generated
GRI 306-4	Waste diverted from disposal
GRI 306-5	Waste directed to disposal
GRI 403-9	Work-related injuries



Scope of Reporting

Country	Company	Shareholding Percentage (%)	Operation Control	Environment	Social	Governance and Economic ¹
Lao PDR	Nam Ngum 2 Power Company Limited (NN2) (Subsidiary) ²	46.0%	Yes	○	○	○
Thailand	Bangpa-in Cogeneration Limited (Subsidiary)	65.0%	Yes	○	○	○
Thailand	Bangkhenchai Company Limited (Subsidiary)	100.0%	Yes	○	○	○
Lao PDR	Xayaburi Power Company Limited (Associated company)	42.5%	Yes	○	○	○
Lao PDR	Luang Prabang Power Company Limited (Associated company) ³	50.0%	Yes	□	□	□
Thailand	Nakhon Ratchasima Solar Company Limited (Jointly controlled entity) ¹	30.0%	No	×	×	×
Thailand	Chiangrai Solar Company Limited (Jointly controlled entity) ¹	30.0%	No	×	×	×
Thailand	CKP Solar Limited ³	100.0%	Yes	□	□	□
Thailand	Vis Solis Limited ³	100.0%	Yes	□	□	□
Thailand	Helios Power Limited ³	100.0%	Yes	□	□	□
Thailand	Apollo Power Limited ³	100.0%	Yes	□	□	□
Thailand	Sole Power Limited ³	100.0%	Yes	□	□	□

○ Full implementation of policies, guidelines and/or complete performance data collection

×

Remark:

¹ Economic performance and its reporting boundary can be found in Annual Report 2022 (56-1 One Report)

² Nam Ngum 2 Power Company Limited ("NN2"); 46 percent owned by the Company via SouthEast Asia Energy Limited ("SEAN").

³ Not in operation

The company is committed to continuously improving the quality of our sustainability report to ensure that the information presented is accurate and in line with sustainable development reporting principles, and to enhance the transparency of our disclosure. The Company welcome feedback and suggestions through the channels below.

□ Partial implementation of policies, guidelines and/or partial performance data collection

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Website: www.ckpower.co.th

2022 HIGHLIGHT PERFORMANCE

CLEAN ELECTRICITY ENVIRONMENT

Energy Management and Climate Change



Renewable energy
capacity

89%



Renewable electricity
consumption within the
organization

92%



Reduce GHG emissions by

0.49%

from base year 2021

Biodiversity



DEVELOPED

Biodiversity strategy



FORMULATED

Phase 1 of the Biodiversity
Roadmap



>110

Fish species have
been able to migrate
upstream safely

2022 HIGHLIGHT PERFORMANCE

KIND NEIGHBOR SOCIAL



The local way of life along the Mekong River
near the Xayaburi Hydroelectric Power Plant

Social and Community Care



ZERO

unresolved
complaints



create shared value for
society and ecosystems
through renewable
electricity

1,753
children and youths



8

renewable energy
learning resources
for communities
and society

Respect for Human Rights



ZERO CASE

human rights violation
across the value chain



100%

human rights due
diligence, rectification,
and remediation
measures established

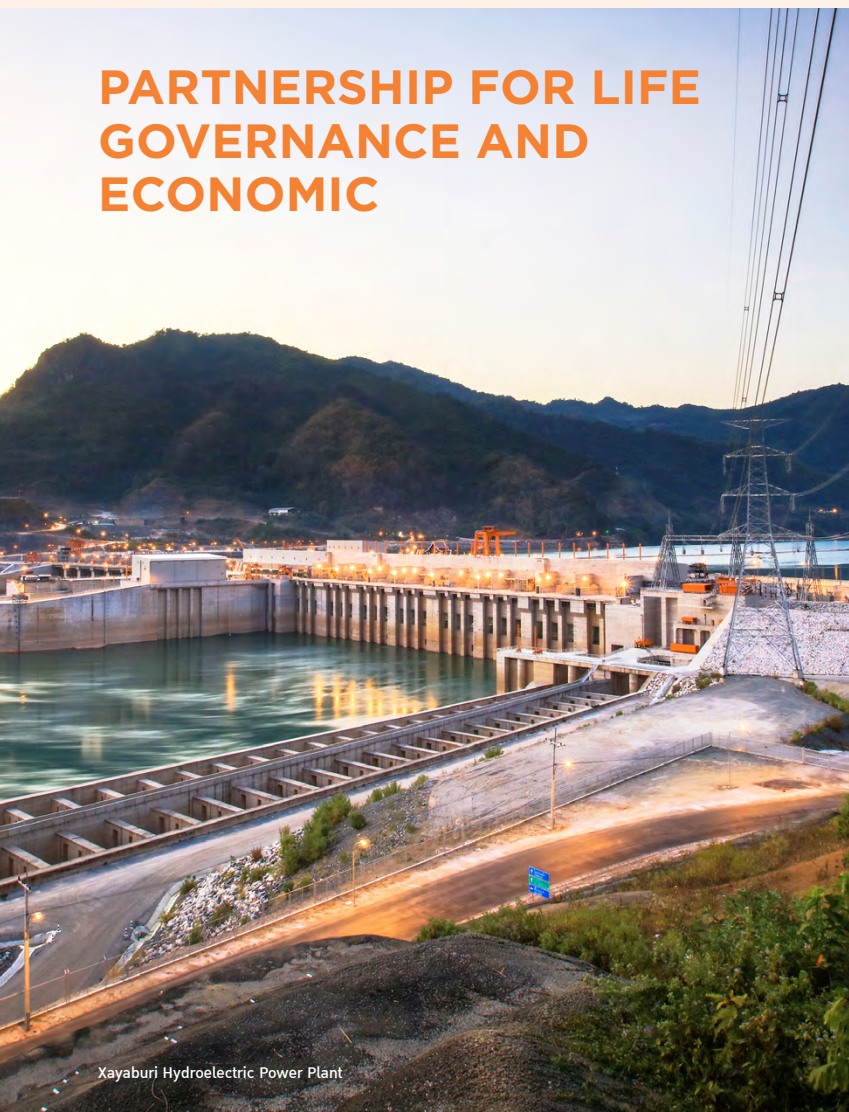


100%

awareness-raising
on human rights
among all employee
level

2022 HIGHLIGHT PERFORMANCE

PARTNERSHIP FOR LIFE GOVERNANCE AND ECONOMIC



Xayaburi Hydroelectric Power Plant

Business Model Resilience



96%

Plants availability
factor



DEVELOP

Digital technology to
enhance Hydrological
forecast of the inflow
volume



1,929

Renewable energy
capacity (MW)

Innovation Management



Eco-friendly production
enhancement innovations

2

Projects



Innovators developing
eco-friendly innovations
within organization

16

Innovators



ABOUT CKPOWER

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OUR BUSINESS

Hydroelectric Power Plants



Xayaburi Hydroelectric Power Plant

Solar Power Plants



Bangkhengchai Solar Power Plant

Cogeneration Power Plants



Bangpa-in Cogeneration Power Plant

Business Overview

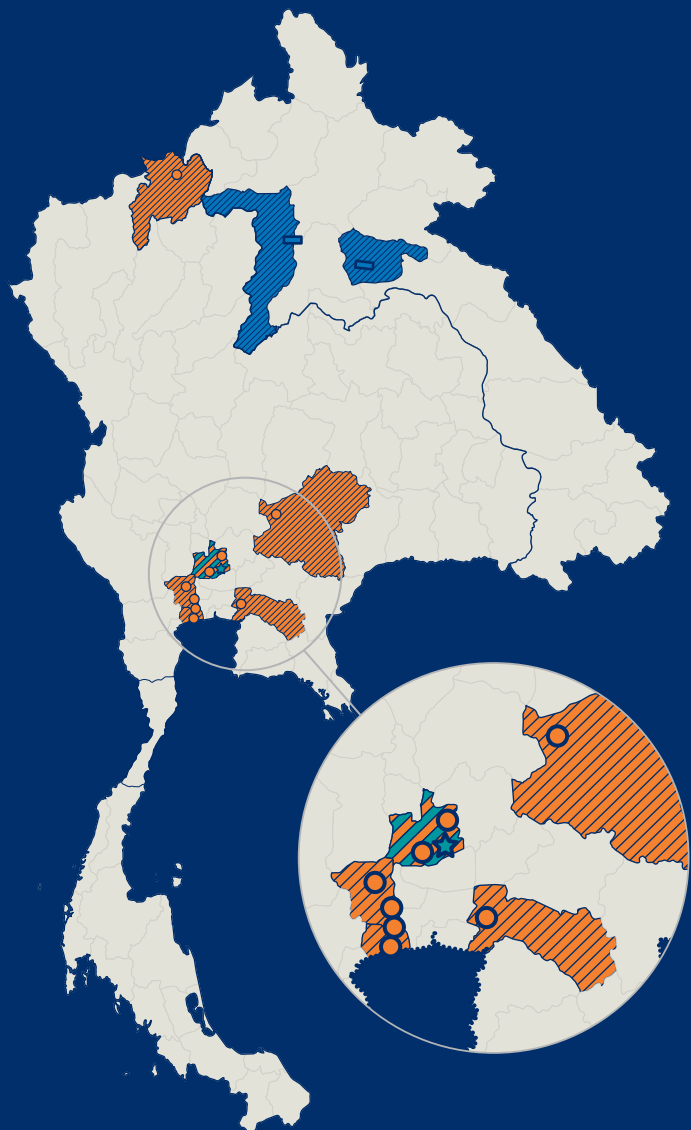
CK Power Public Company Limited (the “Company” or “CKP”) was founded by CH. Karnchang Public Company Limited Group (“CH. Karnchang Group”) and registered its incorporation on June 8, 2011, with its registered capital of THB 1,000,000 with the objective of becoming the core company of CH. Karnchang Group, focusing on investment in the business of production and distribution of electricity generated from various types of energy sources. The Company registered its conversion into a public company on

February 6, 2013, and its ordinary shares were listed as listed securities and began trading on the Stock Exchange of Thailand (“SET”) on July 18, 2013, with its registered fully paid-up capital of Baht5,500 million. On April 10, 2015, the Company registered its capital increase to Baht 9,240 million. At present, the Company’s registered and paid-up capital amounts to Baht 8,129 million.

The Company currently invests in companies that produce and distribute electricity in three types of power plants, namely, hydroelectric power plants, cogeneration power plants, and solar power plants, divided into a total of seven subsidiaries and associated companies.



Business Overview



		Hydroelectric Power Plants		1,900 MW
	2 Plants Lao PDR	Nam Ngum 2 Hydroelectric Power Plant Reservoir		615 MW
		Xayaburi Hydroelectric Power Plant Run-of-River		1,285 MW
		Solar Power Plants		29 MW
	9 Plants Thailand	Solar Power Plants Rooftop		4 MW
		Solar Power Plants Farm		25 MW
		Cogeneration Power Plants		238 MW
	2 Plants Thailand	Bangpa-in Cogeneration Power Plant		238 MW



The Transmission line from Xayaburi Hydroelectric Power Plant

Vision

To be a leading power business company in Thailand and the ASEAN region, with efficient operation.

Missions

- To generate optimal, stable and fair returns for shareholders.
- To be responsible to the environment, communities, and all stakeholders.

Operational Goals:

CKPower has set a goal to increase its renewable power capacity from 89% to 95% by 2024 and to achieve that Net Zero GHG emissions by 2050 in order to become one of the largest renewable power producers with the lowest carbon footprint in the region.



ACHIEVING NET ZERO GHG EMISSIONS by 2050



Value Chain of CKPower

Main Activities



Support Activities





Sustainability Awards and Recognitions



1. Sustainability Excellence and Rising Star Sustainability Awards at SET Awards 2022

CKPower was honored with a SET Award in the Sustainability Excellence category and a Rising Star Sustainability Award at the SET Awards 2022 for its active initiatives in the area of sustainability in the environmental, social, and governance and economic dimensions. The accolades attest to CKPower's unwavering commitment to power generation based on renewable and clean energy and its determination to leverage its electrical engineering expertise to promote societal well-being in accordance with its business philosophy.

2. Thailand Sustainability Investment Index (TSI) 2022 (Third consecutive year)

For the third consecutive year, CKPower was selected by the Stock Exchange of Thailand as one of the 170 companies to be included in the Thailand Sustainability Investment Index (TSI) for meeting the criteria in the Resources category in the year 2022. The inclusion on the list assures investors of the priority the Company has given to sustainable business practices with regard to the environment, society, and governance and economic

3. ESG Emerging List

CKPower was placed on the ESG Emerging List of 2022 by the ThaiPat Institute in recognition of its outstanding performance in the disclosure of environmental, social, and governance data in the Energy and Utilities category.

4. Sustainability Disclosure Recognition 2022

CKPower was honored with the Sustainability Disclosure Recognition for the year 2022 by the ThaiPat Institute. This award highlights the company's commitment and dedication to conducting business operations and disclosing information on its economic, social, and environmental impacts that reflect its sustainability values.

5. Corporate Governance Assessment by the Thai Institute of Directors (IOD)



CKPower received an excellent rating in the Corporate Governance Report of Thai Listed Companies from the Thai Institute of Directors (IOD) for the fifth consecutive year in 2022.



Energy Management and Climate Change Awards and Recognitions



1. Asian Power Awards 2022

CKPower was honored by Asian Power, a prominent magazine in Asia's electricity industry, for the third consecutive year at the Asian Power Awards 2022 with the following awards:

The Power Utility Award for its successful fuel gas system optimization project and the Gas Engine Combined Cycle Award – Silver for its efficient steam turbine load adjustment.

Asian Power Awards were deliberated by a panel of experts in the global electricity industry and given to electricity operators and power plant projects across Asia demonstrating exceptional and internationally recognized achievements.

2. Carbon Footprint Product Certificates

Bangpa-in Cogeneration Power Plant received Carbon Footprint Product certificates from the Thailand Greenhouse Gas Management Organization (Public Organization) for meeting the carbon footprint label scheme requirements and generating carbon footprint below the established level.

3. Climate Action Leading Organization Certificate

CKPower was certified as a Climate Action Leading Organization by the Thailand Carbon Neutral Network in recognition of its declaration of intent to support the achievement of carbon neutrality and net zero emissions by 2050 in support of Thailand's policy and the target of the global community under the Paris Agreement.

4. Certificate of Appreciation for Contribution to the Development of Economic Mechanism for Carbon Pricing and Greenhouse Gas Reduction Investment Project Year 2

CKPower was given a certificate of appreciation for its contribution to the development of economic mechanism for carbon pricing and greenhouse gas reduction investment project Year 2 as a pilot company and to the success of the initiative as well as for its role in providing knowledge on internal carbon pricing (ICP) and green finance to more than 14 leading organizations across Thailand.



Social and Community Awards



1. Asia Responsible Enterprise Awards 2022

CKPower won a certificate of achievement in the Social Empowerment category at the Asia Responsible Enterprise Awards 2022, hosted by Enterprise Asia, a leading non-governmental organization that promotes responsible entrepreneurship in Asia, in recognition of its Hing Hoi Project, a corporate social responsibility program carried out for over six consecutive year with the goal of contributing value through its Competency-Co-Creation-Cooperation-Connection strategies to communities around its power plants and in remote areas both in Thailand and Lao PDR in a manner that aligns with the community's way of life.

2. CSR-DIW Award 2022

CKPower was honored at the CSR-DIW Award 2022, hosted by the Department of Industrial Works, the Ministry of Industry, as part of the CSR-DIW to Achieve SDGs Project, in recognition of Bangpa-in Cogeneration Power Plant for its sustainable and ethical business practice, ability to generate stable long-term returns, and responsibilities towards society and stakeholders across the value chain.

Membership in Partnership Networks



Task Force on Climate-related Financial Disclosures Supporter: TCFD

CKPower has joined the Task Force on Climate-related Financial Disclosures Supporter (TCFD) as a supporter.

WE SUPPORT



United Nations Global Compact: UN Global Compact

CKPower has joined UN Global Compact as a member for the third consecutive year and operates its business in alignment with its 10 Principles, upholding its fundamental responsibilities with respect to human rights, labor standards, environmental protection, and anti-corruption efforts.



Thailand Carbon Neutral Network (TCNN)

CKPower has joined the Thailand Carbon Neutral Network (TCNN) and become a certified Climate Action Leading Organization.



Thai Renewable Energy (RE100) Association

CKPower has become a member of the RE100 Association.



Sustainability Disclosure Community (SDC)

CKPower has become a member of the Sustainability Disclosure Community, established by the Thaipat Institute.



CSR-DIW Network

CKPower has become a member of the CSR-DIW Network, which promotes the sustainable co-existence between manufacturing plants and communities.

SUSTAINABILITY FRAMEWORK

In 2022, CKPower reviewed its sustainability activities and utilized materiality topics to inform the formulation of its sustainability strategies to ensure alignment with its vision to become a leading clean power producer and distributor in Thailand and Southeast Asia. In conjunction, the Company actively preserved an ecological and environmental balance and promoted a better quality of life in communities and society at large through brainstorming sessions between executives and operations-level employee representatives and through interviews with stakeholders across all sectors.

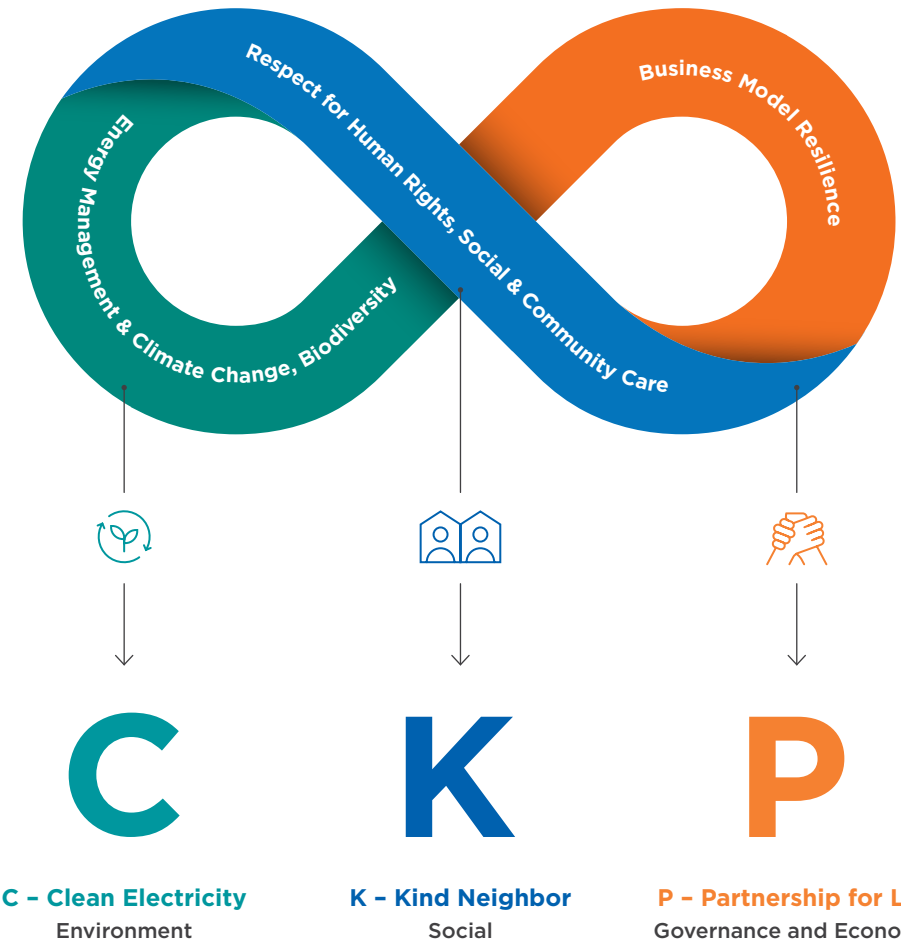
The Company's sustainability framework consists of three core strategies known as "C-K-P," which cover important issues in the dimensions of environment (C - Clean Electricity), social (K - Kind Neighbor), and governance and economic dimensions (P - Partnership for Life). CKPower has also established targets and performance indicators for successful operation, as well as formulated five-year action plans (2022-2026) for key issues in all five dimensions, including

- 1) Energy Management and Climate Change
- 2) Biodiversity
- 3) Social and Community Care
- 4) Respect for Human Rights
- 5) Business Resilience

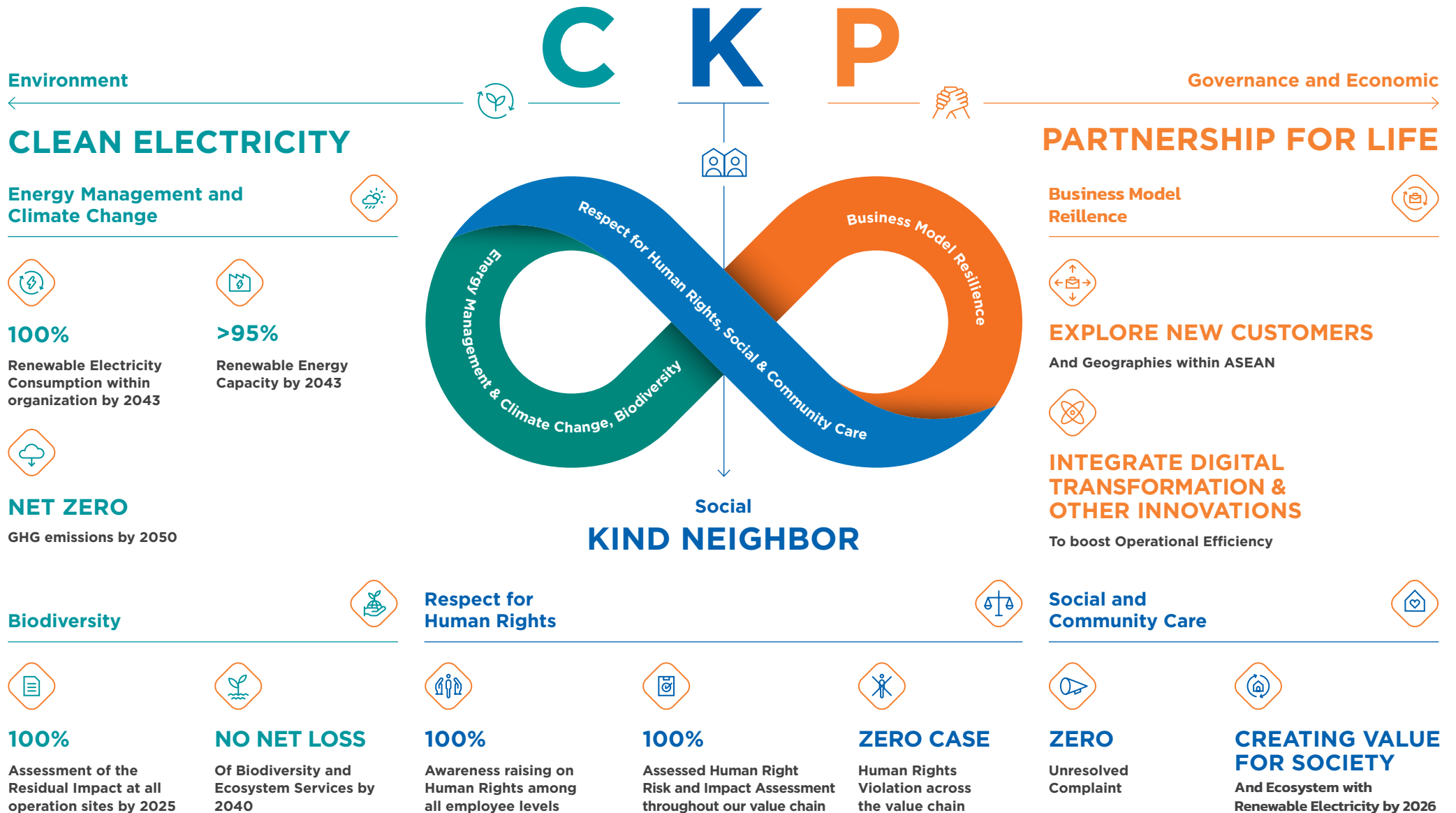
The goals are to drive the Company's sustainable business practices, reinforce its position as one of the region's largest producers of electricity from renewables with one of the lowest carbon footprints, and enable it to cope with challenges and achieve endless business growth in the future.

To drive the Company's sustainable business practices, reinforce its position as one of the region's largest producers of electricity from renewables with one of the lowest carbon footprints, and enable it to cope with challenges and achieve endless business growth in the future.

Sustainability Strategy



SUSTAINABILITY FRAMEWORK



Sustainability Management Structure and Guidelines

CKPower has appointed the Sustainable Development Steering Committee chaired by the company’s management team, with executives from all power plants covering all relevant areas of work joining as committee members. The responsibilities of the committee are as detailed below:

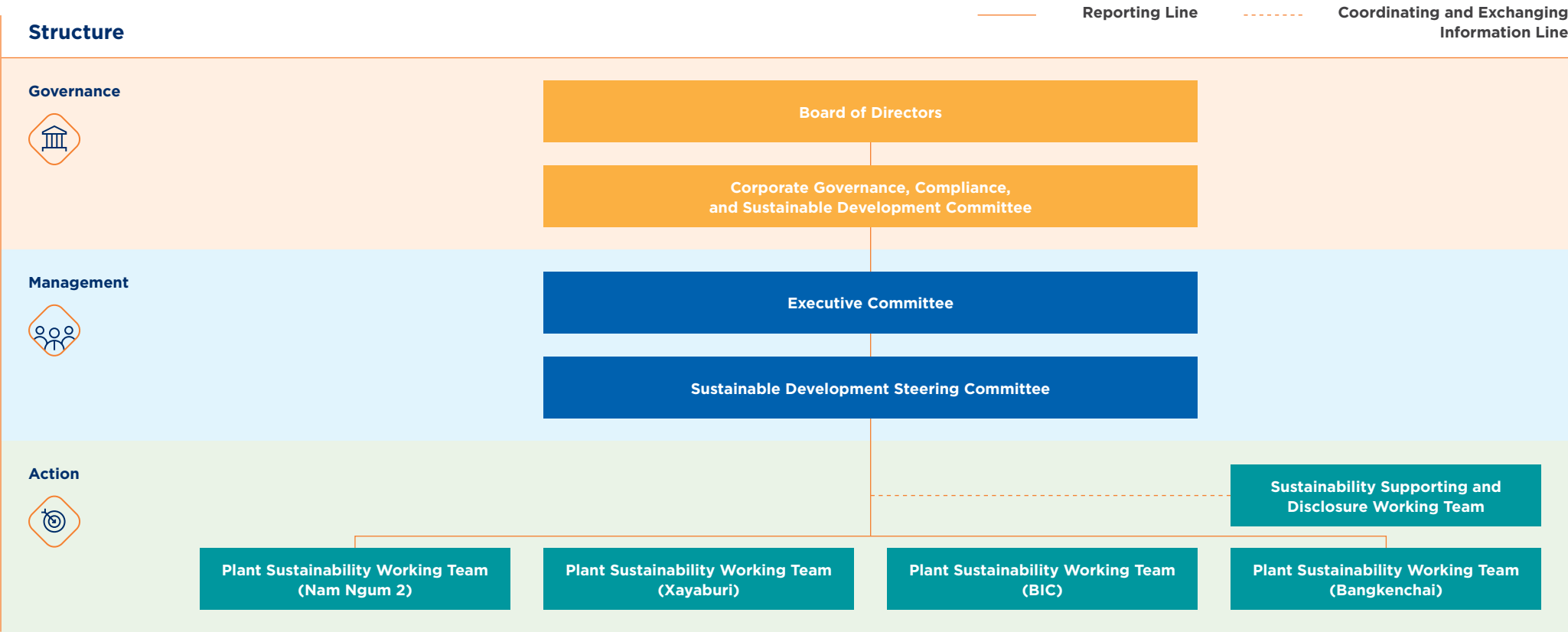
- Establish strategic directions and goals in line with national and international sustainability policies and frameworks for sustainable organizational management standards. Provide recommendations and guidance on sustainability management to the sustainability working teams.

- Appoint the sustainability working teams of CKPower and its subsidiaries.
- Monitor, review, and evaluate the performance of the sustainability working teams of CKPower and its subsidiaries.
- Report the progress of sustainability management to the Corporate Governance, Risk Management and Sustainable Development Committee and the Board of Directors.

In addition, CKPower has appointed a Sustainability Supporting and Disclosure Working Team and a Plant Sustainability Working Team in its every plant to work together in advance the sustainability activities of CKPower Group.

See further
details on the
sustainability
management
policy

CLICK

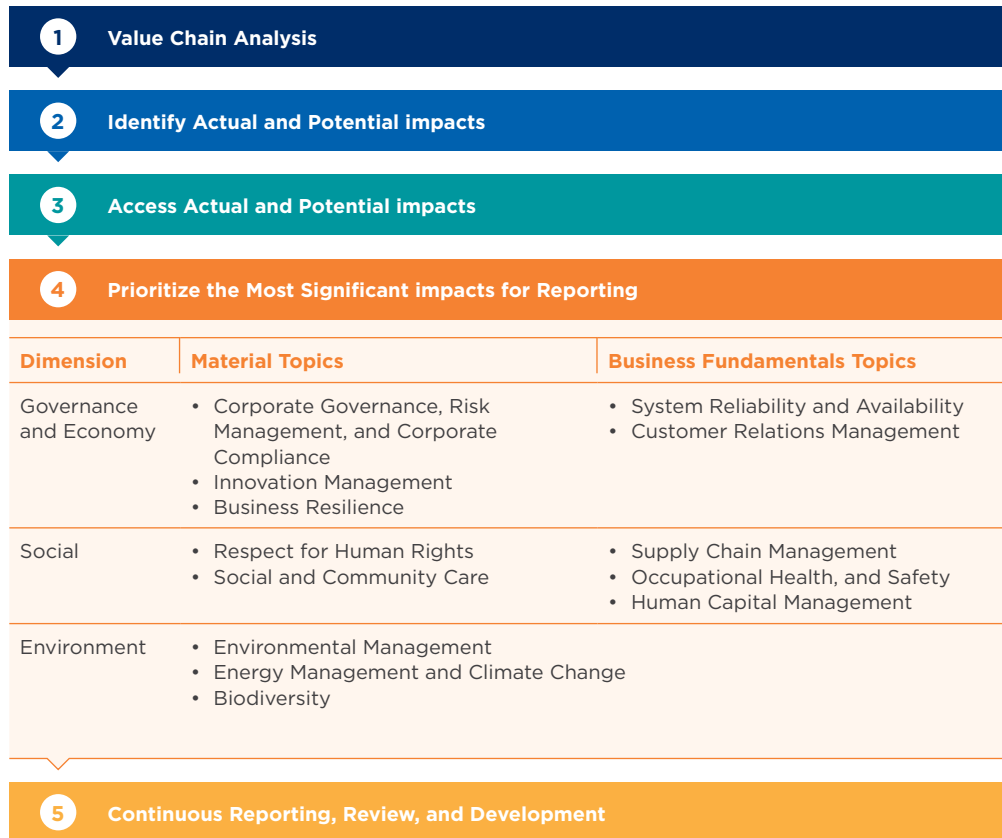




MATERIALITY 2022

Materiality Analysis

In 2022, CKPower has identified its material topics by focusing on analyzing the impacts on stakeholders in the dimensions of environment, social, and governance and economic factors. The company has also considered human rights issues in its impact analysis, in accordance with the guidelines provided in the Global Reporting Initiative (GRI) 2021 standards. The process of identifying materiality topics involved the following steps:



1. Value Chain Analysis

The company conducts a comprehensive analysis of all business activities along the value chain, including both core and support activities, to gather relevant data for assessing their impact on all stakeholders involved in the value chain. The analysis covers all activities throughout the value chain to ensure that every stakeholder is considered. The stakeholders who are taken into account in the value chain include employees, customers, communities and society, investors and shareholders, business partners, and government agencies.

2. Identify Actual and Potential Impacts

The Company reviews the impacts of its business on each stakeholder group across environmental, social, and corporate governance dimensions and links them in the corresponding of human rights impacts. Interviews of stakeholders are also conducted to identify impacts and concerns, and relevant internal and external organizations with expertise are consulted to gather issues, encompassing both positive and negative, existing, and potential impacts in the short and long terms on each group of stakeholders.

3. Access Actual and Potential Impacts

The identification of sustainability issues related to a company's business operations constitutes the framework for considering sustainability topics.. The components used in the assessment cover both internal and external factors of the organization,, including the Company's activities and nature of business, issues of interest in the electricity industry, and global sustainability trends based on guidelines and goals developed by various leading sustainability agencies, such as the GRI Reporting Principles, the Sustainable Development Goals (SDGs), the Sustainability Accounting Standards Board (SASB), the Sustainability Assessment Framework of the Stock Exchange of Thailand (SET), S&P Global's ESG Indices and Dow Jones Sustainability Indices (DJSI), and the United Nations Global Compact (UNGC).



4. Prioritize the Most Significant impacts for Reporting

Conducting an operational meeting to gather feedback from executives and employee representatives to analyze and evaluate the impacts on stakeholders of various sustainability issues. In conjunction with the data obtained from Steps 2 and 3. In addition to the level of impact, feasibility, positive and negative impact, and connection to human rights issues, the severity of the impact in each dimension must be considered in this process to enable the separation of material topics and business fundamentals topics.

5. Continuous Reporting, Review, and Development

The Company has established plans and operational guidelines to mitigate impacts of its material issues and business fundamental issues. The outcomes of the preliminary materiality identification are presented to the executives and the Corporate Governance, Risk Management, and Sustainable Development Committee for consideration and approval for disclosing information. The Company regularly reviews the process and discloses relevant data in its sustainability reports to provide an opportunity for the company to consider appropriate impact and management strategies in response to the changing environmental, social, and economic circumstances each year.

Outcomes of Materiality Identification

Based on stakeholder impact analysis and materiality prioritization, CKPower has identified topics relevant to its business, categorized into eight topics of materiality and five business fundamentals topics.

In analyzing the impacts of its business operations on each group of stakeholders, CKPower links such impacts to human rights issues in each dimension based on internationally accepted human rights requirements and standards. A total of 24 human rights issues are taken into consideration. As such, the action plans and guidelines for the 13 issues above will not only help to minimize negative impacts and amplify positive impacts but will also mitigate human rights risks for the Company. OR In the process of assessing the impacts of the company's business operations on each group of stakeholders, in relation to the dimensions of environment, social, corporate governance, and economic, the company links the relationship with human rights issues of the impacts of each dimension, referring to internationally recognized human rights regulations and standards, totaling 24 issues. Therefore, planning and establishing a course of action in the aforementioned 13 issues can reduce negative impacts and promote positive impacts on stakeholders, and also reduce the company's human rights risks.

CKPower's Material Topics

● ● Materiality Topics



● ● Business Fundamentals Topics



Governance and Economic



Relevant SDGs	Relevant Stakeholders	Impacts on Stakeholders	Actions
1. Corporate governance, Risk Management, and Compliance			
 	<ul style="list-style-type: none"> Employees Government agencies Customers Communities and society Suppliers Investors and shareholders 	<p>Complaints on legal and regulatory violations and lack of proper risk management may cause business disruption, which may in turn affect operational reliability and stakeholders overall. ●</p> <p>Good corporate governance, risk management, and compliance are key factors that affect the confidence of all stakeholder groups, which the Company can enhance if it demonstrates that it operates properly, transparently, without discrimination, and in line with stakeholder expectations. ●</p>	<ul style="list-style-type: none"> Establish corporate governance policies and guidelines, such as a corporate governance policy, a risk management policy, a business code of conduct, and anti-corruption guidelines. Conduct corporate risk assessment to evaluate and monitor risk management measures and keep risk within the risk appetite. Create a whistleblowing channel.
2. Innovation Management			
   	<ul style="list-style-type: none"> Employees Suppliers Communities and society Customers Investors and shareholders Communities and society 	<p>Innovation development helps enhance skills and knowledge exchange. ●</p> <p>Resource consumption is reduced and operational efficiency and processes relevant to each stakeholder group are enhanced. ●</p> <p>Innovation enhances power production efficiency and reliability and contributes to investment security. ●</p> <p>The application of innovation in communities can enhance the quality of life for local residents. ●</p>	<ul style="list-style-type: none"> CKPower has established guidelines for developing innovation knowledge, beginning with personnel development and network building to further build upon its innovations. Promote innovation diffusion to external stakeholders. Apply innovation to social and community development.

Relevant SDGs	Relevant Stakeholders	Impacts on Stakeholders	Actions
3. Business Resilience			
 	<ul style="list-style-type: none"> Employees Customers Investors and shareholders Government agencies Communities and society 	Enhancing responsiveness, agility, and adaptability to change can enhance stakeholder confidence. ●	<ul style="list-style-type: none"> Establish concrete operational strategies and guidelines. Increase internal and external collaboration. Expand investments in renewable energy-based electricity production from a more diverse range of renewable energy sources.
	<ul style="list-style-type: none"> Employees 	<p>By giving employees opportunities to develop their potential, the Company can attract talents and in turn enhance operational efficiency. ●</p> <p>The Company may initiate restructuring or adjust its production to suit a new business model, which may change the number of positions and employees in each function. ●●</p>	<ul style="list-style-type: none"> Increase business expansion geographically. Increase opportunities in carbon credit and renewable energy certification business in pursuit of the organization's GHG targets.
	<ul style="list-style-type: none"> Suppliers 	Increase and reduction in business models can lead to changes in suppliers. ●●	
	<ul style="list-style-type: none"> Communities and society 	Expansion into new areas can cause disturbance to local residents or lead to relocation. On the contrary, if the Company provides support to local communities and society, such an initiative will expand the reach of the Company's CSR projects. ●●	



Social



Relevant SDGs	Relevant Stakeholders	Impacts on Stakeholders	Actions
4. Respect for Human Rights			
	<ul style="list-style-type: none"> Employees Government agencies Customers Communities and society Suppliers Investors and shareholders 	<p>Human rights violations can lead to lawsuits for damages, business disruption, and loss of stakeholder confidence. ●</p> <p>Equitable care and treatment across the supply chain promotes the human rights of all stakeholders as well as confidence in and the positive corporate image of the organization. ●●</p>	<ul style="list-style-type: none"> Establish policies and guidelines for monitoring and preventing human rights risks across the supply chain in compliance with international standards, which will contribute to business stability and sustainability. Establish concrete operational strategies and guidelines. Conduct human rights due diligence. Organize projects or activities fostering human rights awareness. Put in place guidelines for preventing human rights violations for all stakeholder groups. Establish whistleblowing channels for human rights complaints.
5. Social and Community Care			
	<ul style="list-style-type: none"> Employees Customers Suppliers Communities and society Investors and shareholders 	<p>The fostering or deescalating of relations with communities can affect stakeholder confidence. ●●</p>	<ul style="list-style-type: none"> Establish community engagement and development policies. Establish concrete operational strategies and guidelines. Conduct community and social engagement activities and projects in line with the Company's business operations.
	<ul style="list-style-type: none"> Communities and society 	<p>The operation of the power plants may impact the environment, the health, and the way of life of people surrounding the plants. ●●</p>	
	<ul style="list-style-type: none"> Employees 	<p>CSR activities enhance employee competency, build their understanding of local communities, motivate them to participate in CSR activities, and foster their engagement with the organization. ●●</p>	




Environment



Relevant SDGs	Relevant Stakeholders	Impacts on Stakeholders	Actions
6. Environmental Management			
	<ul style="list-style-type: none"> Government agencies Customers Communities and society Suppliers Investors and shareholders 	<p>Violation of environmental laws can impact communities and lead to the filing of complaints to state regulators and in turn business disruption, which can affect stakeholders across the supply chain, reduce stakeholder confidence in the organization, and affect overall investment. ●</p>	<ul style="list-style-type: none"> Establish environmental policies. Put in place processes for monitoring and inspecting environmental quality and environmental management efficiency. Put in place environmental management systems that are consistent with international standards. Keep water, general waste, and hazardous waste management and air quality control in compliance with the law and promote innovation development to enhance production efficiency. Establish environmental criteria for supplier screening.
	<ul style="list-style-type: none"> Employees 	<p>The use of environmental management innovation can enhance employees' knowledge and enable them to help the organization achieve its performance targets. ●</p>	
	<ul style="list-style-type: none"> Communities and society 	<p>Environmental management, including resource consumption and discharge control of waste from business activities, can impact the quality of life in communities. ●●</p>	
	<ul style="list-style-type: none"> Customers Suppliers 	<p>Green procurement and low-carbon products under fair and non-discriminatory supplier selection can promote collaboration and sustainable mutual growth. ●</p>	



Relevant SDGs	Relevant Stakeholders	Impacts on Stakeholders	Actions
7. Energy Management and Climate Change			
 	<ul style="list-style-type: none"> Customers Government agencies Investors and shareholders 	<p>The Company's energy and climate change management affect targets, expectations, requirements, and policies prescribed by customers' companies or government agencies as well as enhance the efficiency and stability of the operation and business investment. ●●</p> <p>The sake REC and green bonds creates investment opportunities for stakeholders, broadens customer markets, and aligns with state policies. ●</p>	<ul style="list-style-type: none"> Establish energy saving and climate change policies. Conduct climate change risk assessment to formulate responses. Establish concrete operational strategies and guidelines. Publish and disseminate guidelines for producing electricity from renewable energy to communities and society and exchange beneficial information with internal and external stakeholders. Increase investment in renewable energy-based power production. Increase renewable energy capacity and apply innovation to enhance production efficiency.
	<ul style="list-style-type: none"> Employees 	<p>The use of innovation to promote energy and climate change promotion can enhance employees' knowledge and enable them to help the organization achieve its performance targets. ●</p>	
	<ul style="list-style-type: none"> Communities and society 	<p>Energy and climate change management both catalyze and mitigate impacts on energy consumption and climate change, which can affect society as a whole. ●●</p>	
	<ul style="list-style-type: none"> Customers Suppliers 	<p>Green procurement and low-carbon products under fair and non-discriminatory supplier selection can promote collaboration and sustainable mutual growth. ●</p>	
	<ul style="list-style-type: none"> Government agencies 	<p>As a stakeholder of the government sector, the Company can serve as a mouthpiece to inform the government of the operation approach of the private sector and exchange information on crises and opportunities through projects/activities held by the government sector. ●</p>	

Relevant SDGs	Relevant Stakeholders	Impacts on Stakeholders	Actions
8. Biodiversity			
	<ul style="list-style-type: none"> Customers Communities and society Suppliers Investors and shareholders 	<p>The enhancement or degradation of ecosystems and biodiversity can impact the way of life and the livelihood of local communities and affect confidence in the organization. ●●</p>	<ul style="list-style-type: none"> Establish biodiversity management policies. Establish concrete operational strategies and guidelines. Plan biodiversity assessment and take action to promote biodiversity services through various projects.
	<ul style="list-style-type: none"> Employees Suppliers 	<p>The use of environmental management innovation to boost biodiversity can enhance knowledge for employees and suppliers and enable them to help the organization achieve its performance targets ●</p>	
	<ul style="list-style-type: none"> Customers Government agencies 	<p>The Company's biodiversity enhancement action can support the biodiversity policies and targets of its customers and government agencies, enabling them to manage biodiversity across the value chain and comply with state policies. ●</p>	

SUPPORTING THE SUSTAINABLE DEVELOPMENT GOALS (SDGs) AND JOINING THE UNITED NATIONS GLOBAL COMPACT

Joining the United Nations Global Compact

[CLICK](#)



Supporting the Sustainable Development Goals (SDGs)

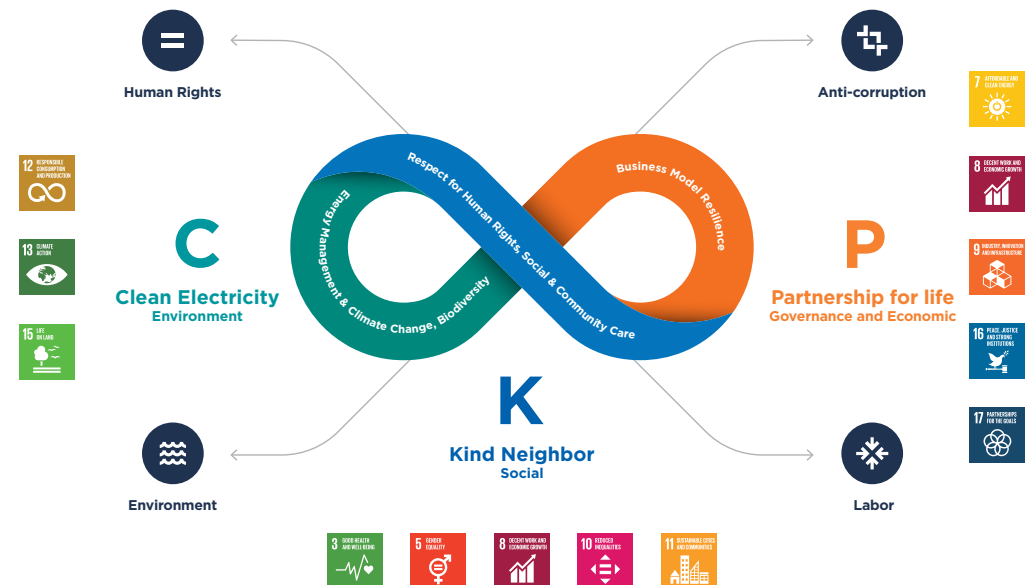
CKPower drives its sustainability actions by supporting the United Nations' Sustainable Development Goals (SDGs) that align with its capabilities and business potential. Encompassing three dimensions: environment, society, and governance and economic, the Company's sustainability actions support 13 out of the 17 SDGs through its eight material topics and five business fundamentals topics.

Dimensions	SDGs
Environment	
Social	
Governance and Economic	

Joining the United Nations Global Compact

CKPower recognizes the significance of fulfilling its role as a good corporate citizen in the global community and thus strives to advance, support, and foster a good quality of life in society. To this end, CKPower has joined the United Nations Global Compact (UN Global Compact) as a member to demonstrate its intent and commitment to sustainable business practices in accordance with its 10 international principles as well as its fundamental responsibility with regard to human rights, labor standards, environmental protection, and anti-corruption efforts, in order to raise awareness of adherence to such principles in business practice in Thailand's business sector.

CKPower strives to support the Sustainable Development Goals (SDGs) and the 10 principles of the United Nations Global Compact under its C-K-P sustainability management framework in order to align its sustainability actions with internationally recognized goals and requirements.





PATHWAY TO NET ZERO

CKPower Group's sustainability strategy follows a three-pronged "CKP" approach, that encompasses key issues in three dimensions: environment (C – Clean Electricity), social (K – Kind Neighbor), and governance and economic (P – Partnership for Life). This strategy aims to position CKPower as one of the region's largest renewable energy companies with one of the lowest carbon footprints, while also promoting the balance of the ecosystem and the environment and promoting well-being in the community and society.

To achieve these objectives, CKPower has established a clear roadmap for each strategic dimension, working to raise awareness and promote cooperation with both internal and external agencies to bring about tangible changes. The initiatives under the "C - Clean Electricity" dimension are particularly focused on addressing climate change, with a shared goal of reducing greenhouse gas (GHG) emissions and moving towards Net Zero GHG emissions, as outlined in the 27th Paris Agreement on Climate Change (COP27).

As part of the joint operation "Together for Implementation," CKPower's efforts align with the global community's intentions to mitigate the effects of climate change and limit the global average temperature increase to no more than 1.5 degrees Celsius within this century. By adopting the CKP approach, the Company is well-positioned to achieve sustainable growth and contribute towards a better future for the environment, society, and the global community as a whole.

Pathway to Net Zero

2021-2022

CREATE

a comprehensive and accurate company-wide GHG Emissions database and develop the climate change strategy.

2022

89%

Renewable Energy capacity

2024

95%

Increase Renewable Energy capacity

- Implement measures to reduce GHG emissions & Expand investments in GHG reduction projects
- Continuously increase the energy efficiency.

NET

2050

ACHIEVE
NET ZERO
EMISSIONS

2043

RE100

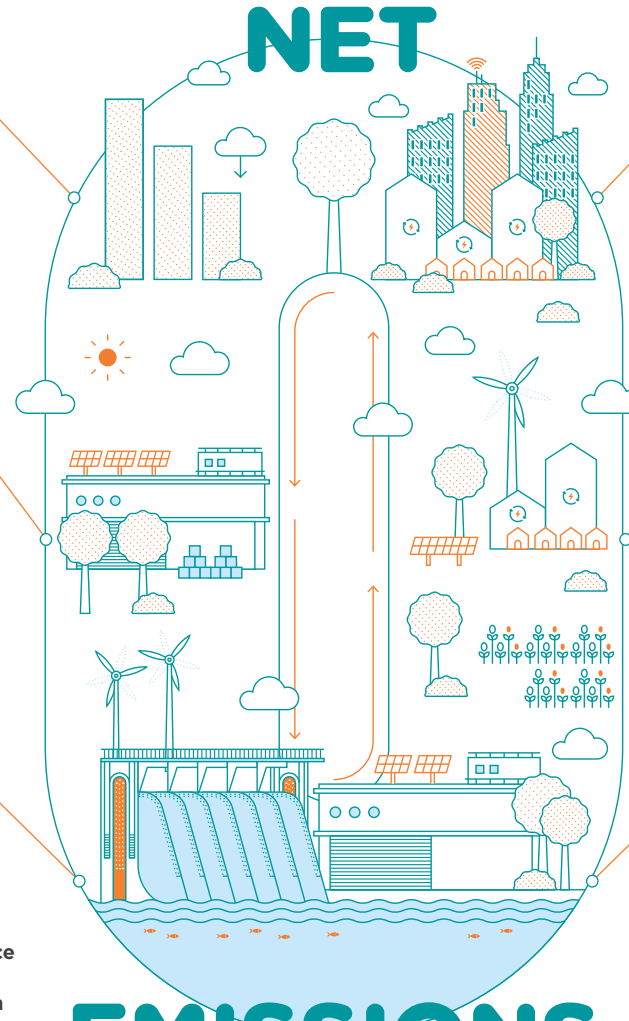
100% Renewable Electricity Consumption (RE100) Offset residual GHG emissions. Increase GHG sequestration.

2042

45%

Reduction in GHG emissions

EMISSIONS



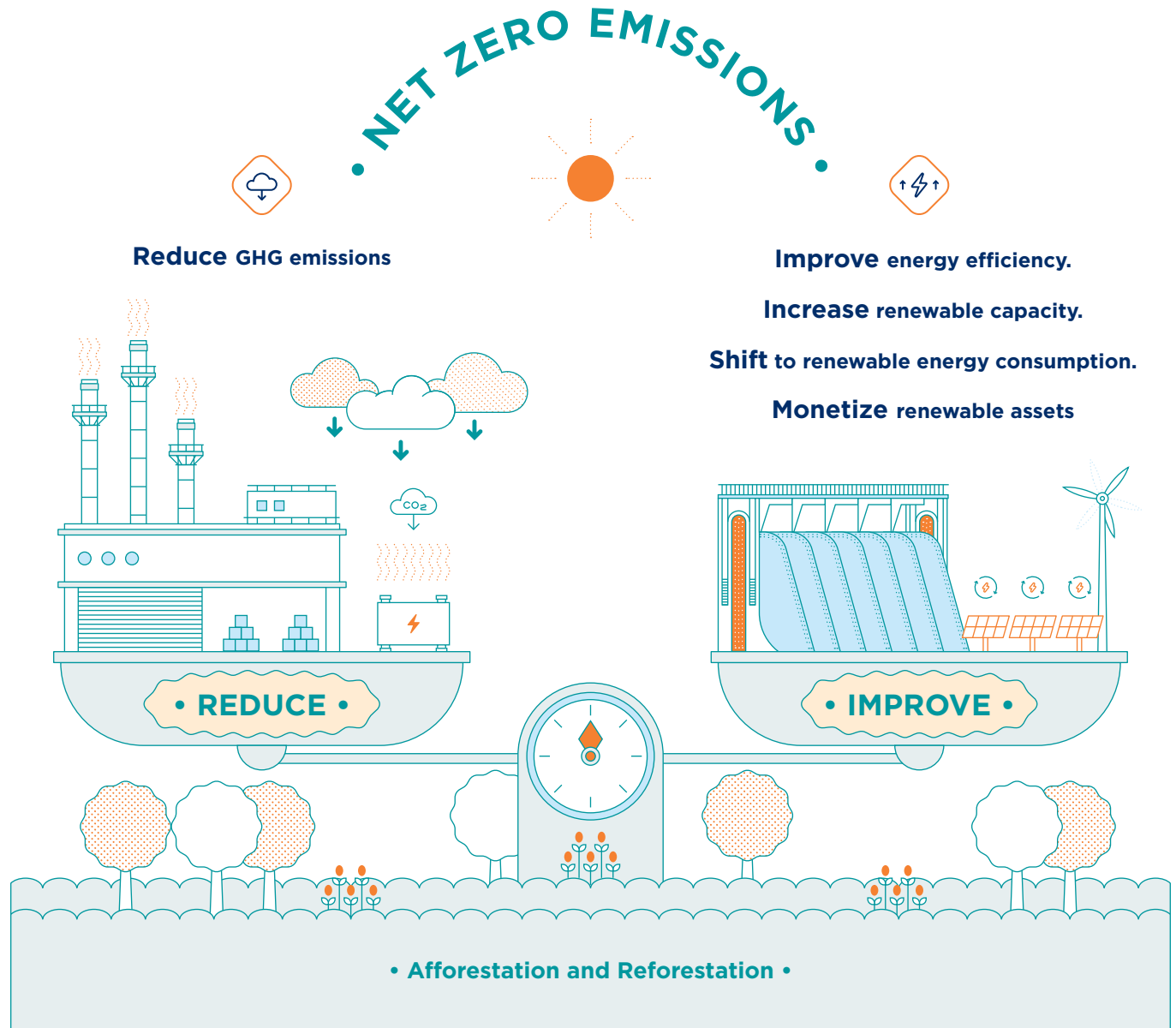


Commitment

CKPower is committed to addressing climate change and reducing its greenhouse gas (GHG) emissions. To this end, we have established a clear organization-wide guidelines regarding climate change under a five-year strategic framework (2022-2026) based on Science-Based Targets (SBT), which are international guidelines for the private sector, as well as the guidelines of the Task Force on Climate-Related Financial Disclosures (TCFD). We have also announced our intention to become a Net-Zero GHG emissions organization by 2050. To achieve this goal, CKPower promotes the development of engineering knowledge and efficient resource management among personnel employees at all levels. the Company encourage learning and development of operational systems to create innovations that will help enhance efficiency and reduce GHG emissions. We also prepared to implement internal carbon pricing (ICP) mechanisms, and created opportunities in green finance to reduce its GHG emissions, thereby ensuring that CKPower aim to become one of the region's largest producers of electricity from renewables with one of the lowest carbon footprints. CKPower believe that these measures are necessary to address climate change and promote a more sustainable future. We are committed to transparent reporting on our progress towards our goals and will continue to explore new opportunities to reduce our environmental impact.

Energy Management and Climate Change Strategies

CKPower has formulated energy management and climate change strategies and guidelines in order to reduce energy consumption and GHG emissions as well as to expand investment in renewable energy, improve the efficiency of energy generation, and increase forest areas and green areas for GHG sequestration. The main goal of this initiative is for CKPower to achieve Net Zero GHG emissions by 2050.





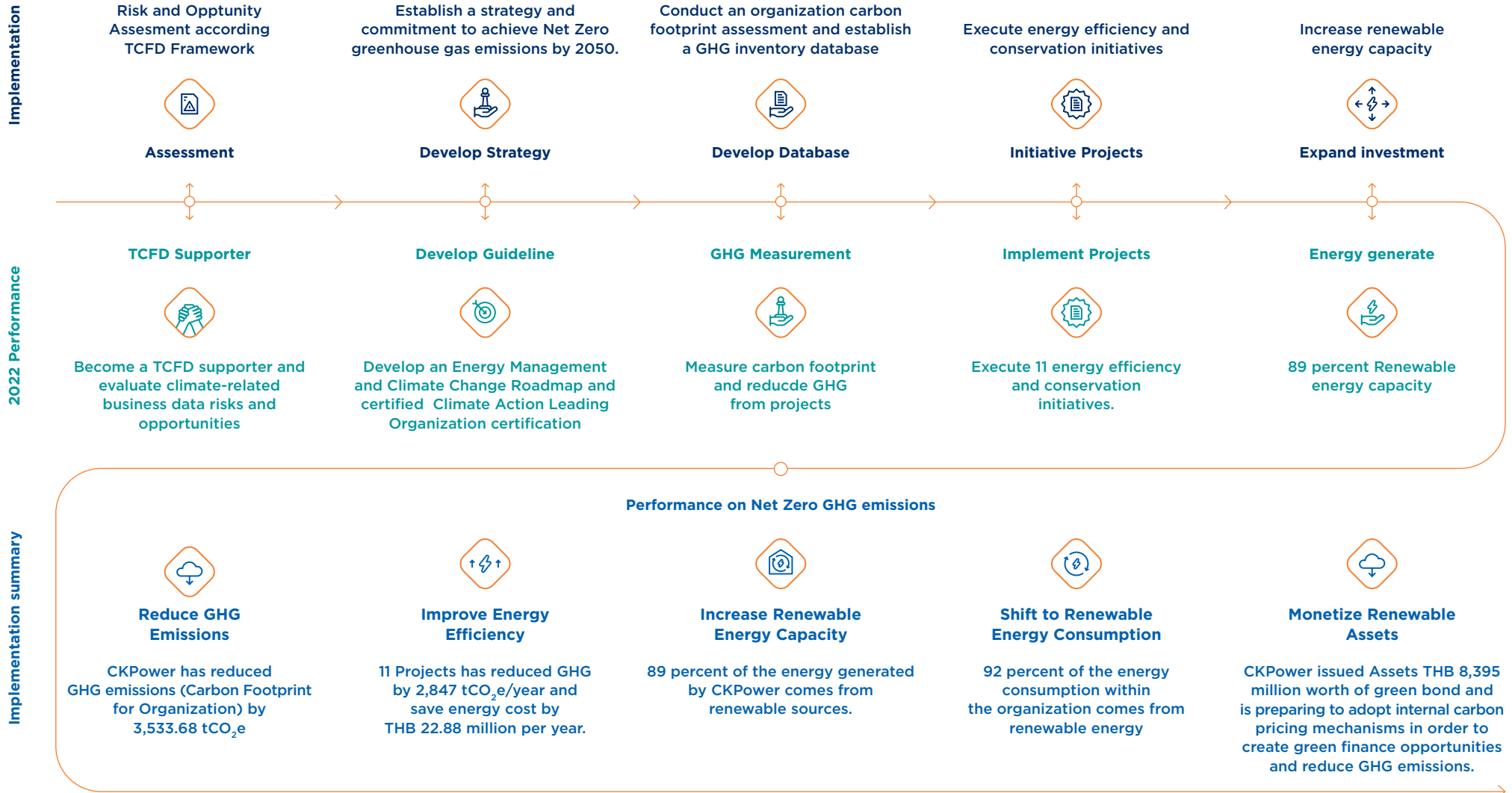
2022 Performance

● Implementation

● 2022 Performance

● Performance on Net Zero GHG emissions

CKPower has formulated energy management and climate change strategies and guidelines to implement in all invested power plants.



CLEAN ELECTRICITY

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• Biodiversity	54



ENERGY MANAGEMENT AND CLIMATE CHANGE



The Transmission line from Xayaburi Hydroelectric Power Plant

SDGs



2022 Achievements



6.28% reduction in energy
consumption
per electricity generation unit
compared to the 2021 base year



0.49% reduction in
GHG emissions
compared to
the 2021 base year



Renewable Energy
Capacity of
89%



92%
Renewable electricity consumption
within the organization

Short-term targets



3% reduction in energy
consumption
per total electricity generation in
2022 compared to the base year
of 2021



0.24%
reduction in GHG emissions in 2022



Increases Renewable
energy capacity to
95%
by 2024

Long-term targets



Transitioning to 100% renewable
electricity consumption include
utilizing Renewable Energy
Certificates (RECs)



Increase renewable
energy capacity to

RE100
by 2043

>95%
by 2043



Achieving Net Zero
GHG emissions

NET ZERO
by 2050



Impact on Business

Climate change is a pressing issue that has demonstrated signs of exacerbating, leading to a rise in the global average temperature and an escalation in the severity of natural disasters. This presents CKPower with both physical and transition risks due to rapid changes in policies, regulations, technology, and consumer behavior, driven by heightened global community awareness.. In 2016, Thailand signed the Paris Agreement under the United Nations Framework Convention on Climate Change, also known as the Paris Agreement, in order to carry on the commitment of the Kyoto Protocol. The agreement requires all the participating nations to establish their nationally determined contributions (NDCs) for GHG reduction and climate change action in support of the goal of limiting the increase in average global temperatures to under 2 degrees Celsius. In this regards, Thailand has revised its national GHG reduction target (second revision) and declared its intent to decrease GHG by 30% compared to business-as-usual, with a goal to increase the reduction to 40% through financial, technological support, and capability enhancement via international cooperation.. Additionally,, Thailand's Long-Term Low Greenhouse Gas Emission Development Strategy (LT-LEDS) has been improved to ensure the country can achieve carbon neutrality by 2050 and net-zero GHG emissions by 2065. Therefore, CKPower must promptly adapt to various risks in response to these developments.

Challenges and Opportunities

The significance of the energy sector in mitigating climate change and propelling the world towards the target of net-zero greenhouse gas emissions is acknowledged by international and regional organizations, such as the World Bank and the Asian Development Bank (ADB). To support funding for renewable energy

initiatives, these institutions have introduced green bonds. This will aid in lowering the weighted average cost of capital (WACC) for renewable-based electricity producers to a level comparable to or lower than fossil fuels-based electricity producers. At the same time, the Thai government has implemented measures for amending laws and policies to promote the use of renewable energy and just energy transition (JET) in order to incentivize investors to prioritize renewables-based energy production businesses as they can help decrease risks arising from changes in policies and the ever-intensifying environmental and GHG reduction regulations. Such measures have yielded positive outcomes, as evidenced by the surge in the securities prices of companies with concrete plans to shift towards renewable energy.

Furthermore, new financial mechanisms, such as renewable energy certificates (REC) and carbon credits, have provided renewable electricity producers with instruments to earn additional revenue through the sale of RECs based on renewable power production or the sale of carbon credits for certified carbon offsets certified by central agencies or scheme owners.

In consequently, its present an excellent opportunity for CKPower as it centers its business on renewable power production, which accounted for 89% of its total capacity in 2022. The Company strives to procure and produce electricity from renewable energy to accommodate the future growth in demand for clean energy through efficient resource management. CKPower has also continuously developed and improved its internal energy consumption to reduce energy costs and GHG emissions , promoting stable and sustainable growth and transitioning towards an era of "clean energy for a low-carbon society."



—
“The impact of climate change has intensified every year, making it a concern and a challenge for all sectors. As such, CKPower is determined to join the global community in address this issue by formulating short-term and long-term plans and strategies to increase power production from clean energy sources and reduce GHG to zero. Under these plans, CKPower also considers enhancing internal energy efficiency – a challenge that requires cutting-edge knowhow – and seeks to enhance the capabilities of its personnel in preparation for the Company's long-term GHG reduction.”
—

Mr. Bhak Rakbamrung-

Chief Engineer - Civil Engineering Department

Head of Ambition - Energy Management and Climate Change

Commitment

CKPower is fully committed to increasing the production of renewable energy, such as hydropower, solar power, and wind power, to 95% by 2026 and exceeding 95% by 2043. In addition, the Company has established management guidelines of efficient GHG reduction in pursuit of net-zero GHG emissions by 2050 as well as guidelines for promoting and driving innovation for reducing energy consumption, enhancing electricity production efficiency, and raising awareness of energy conservation across its organization value chain. Operational Guidelines



Operational Guidelines

Energy Management and Climate Change Governance

CKPower has implemented an energy conservation policy and a climate change policy and has established organization-wide targets for reducing energy consumption, including in offices and production processes. The Company also aims to raise awareness of environmental conservation among all units across the organization to encourage employees to develop innovations for reducing energy consumption, enhancing electricity production efficiency, and decreasing GHG emissions while also ramping up investments in renewable energy as well as increasing forested and green areas to GHG removals.

To oversee energy and climate change management, CKPower’s energy and climate change management is supervised by the Corporate Governance, Risk Management, and Sustainable

Development Committee and driven by the Sustainable Development Steering Committee, which is responsible for defining strategic directions and goals in accordance with sustainability and climate change policies and operational frameworks to ensure alignment with international standards and trends and for monitoring and working with the working team of every power plant. In addition, CKPower has prescribed the roles and responsibilities, as well as the remuneration indicators, of executives in each area of operation, assigning them to be responsible for sustainability and climate change oversight through monitoring to ensure alignment with the Company’s target and to work with the Sustainability Supporting and Disclosure Working Team to report the performance to the Board of Directors on a quarterly basis.

Energy
Conservation
Policy

[CLICK](#)



Climate
Change Policy

[CLICK](#)



Task Force on Climate-
related Financial
Disclosure: TCFD

[CLICK](#)



CKPower is committed to expanding its climate change data disclosure to encompass the entire supply chain in line with the guidelines of the Task Force on Climate-Related Financial Disclosures (TCFD).

Climate Risk Management

CKPower conducts an annual evaluation of the risks and opportunities associated with climate change. The company recognizes that although climate change may not have a direct impact on its business operations, it has made preparations by performing assessments of its operations in Thailand and Lao PDR, which are categorized into short-, medium-, and long-term timeframes. Once the climate risks and opportunities are identified and prioritized, they are incorporated into the list of corporate risks and mitigation plans, both for physical risks and transition risks, are developed to address them. CKPower ensures transparency in its risk assessments and the establishment of its climate management guidelines in accordance with the guidelines of the Task Force on Climate-Related Financial Disclosures (TCFD).

Energy Management and Climate Change Strategies

CKPower has developed energy management and climate change strategies in accordance with international assessment standards and the guidelines of the Task Force on Climate-Related Financial Disclosures (TCFD), the results of which are used in risk and opportunity analysis in order to formulate action plans for the Energy Management and Climate Change Roadmap.

Structure of Sustainability and Climate Change Governance





The Company has created a five-year strategic plan (2022-2026) that aligns with the Net Zero GHG emissions goal by 2050.

Strategy	Short-term plans			5-year medium-term plans		Long-term plans
Reduce GHG Emissions	 Developing a database on the organization's energy consumption and GHG emissions.	 Conducting annual climate-related risk and opportunity assessments.	 Developing climate change strategies.	 Conducting annual climate-related risk and opportunity assessments.	 Reducing GHG emissions by 45% by 2039.	 Striving towards Net Zero GHG emissions by 2050.
Improve Energy Efficiency	 Implementing measures and increasing investments in projects contributing to GHG reduction.	 Continuously optimizing energy efficiency.			 Conducting energy conservation and energy cost saving projects.	
Increase Renewable Capacity	 Increase renewable energy capacity to 89%	 Increase renewable energy capacity to 95%			 Increase renewable energy capacity to more than 95%	
Shift to Renewable Energy Consumption	 100% renewable electricity consumption include utilizing Renewable Energy Certificates (RECs).	 Offsetting residual GHG emissions and increasing GHG removals.				
Monetize Renewable Assets	 Issuing green bonds.	 Preparing for the implementation of Internal Carbon Pricing.			 Diversifying into new businesses that leverage advanced renewable energy technologies	



Green Financing Activities in 2022

Green Bond

In 2022, Xayaburi Power Co., Ltd. (XPCL) issued green bond worth THB 8,395 million under a green bond framework verified by Det Norske Veritas (DNV), world-class accreditor, as an independent external reviewer in alignment with the Green Bond Principles 2021 and the ASEAN Green Bond Standards 2018.

Also, the green bond issuance won the Best Green Bond Hydropower Plant Framework Award at the International Finance Awards, hosted by International Finance Magazine, a leading business and finance magazine published in London, UK, and was named a winner of the Most Sustainable Hydro Power Company Award in the Utility & Energy Award Winners category at the Global Economics Awards, organized by the UK's leading finance magazine The Global Economics.

Internal Carbon Pricing (ICP)

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.

Projects for the Reduction of Energy Consumption and GHG Emission in 2022

CKPower is actively implementing 11 energy efficiency and conservation projects to reduce energy consumption and GHG emissions. These projects focus on minimizing energy loss, increasing efficiency, and promoting employee awareness on energy conservation and carbon footprint reduction in compliance with the ISO 50001:2018 energy management standard. These solutions are developed through observation and innovation, utilizing existing resources such as human resources and equipment without adding to the company's budgetary burden.

Performance of Energy Conservation Projects in 2022



Reduction in energy
consumption

6,142
MWh



Reduction in
GHG emissions

2,847
tCO₂e/year



Reduction in
energy costs









22.88
million baht

A breakdown of the contributions of the projects is as shown below.

Project	Reduction in energy consumption (MWh)	Reduction in GHG emissions (tCO ₂ e/year)	Reduction in energy costs (baht/year)
Steam turbine load adjustment project	3,250	1,502	12,100,000
Air dryer deactivation project	3	1.3	10,000
Cooling fan deactivation project	188	87.1	701,000



A breakdown of the contributions of the projects is as shown below.

Project	Reduction in energy consumption (MWh)	Reduction in GHG emissions (tCO ₂ e/year)	Reduction in energy costs (baht/year)
 Cooling tower optimization project	103	47.5	383,000
 Lower gas pressure - better heat rate project	1,904	880	7,090,000
 Improvement online cleaning system for air compressor air system of steam turbine project	293	135	1,087,000
 Gas compressor power reduction project	238	110	885,000
 Office energy consumption reduction project	10	5	60,000
 Dam crest and outdoor lighting improvement project	136.26	68.12	461,000
 Energy efficiency enhancement project (LED replacement)	16.16	8.08	96,000
 Internal Combustion Engine to PHEV transition project	-	2.88	-



Improvement Online Cleaning System for Air Compressor System of Steam Turbine Project



Studies on the efficiency optimization of Bangpa-in Cogeneration Power Plant

Bangpa-in Cogeneration Power Plant implemented an online system to improve the cleaning of the air compressor of the gas turbines, reducing the frequency of washing required. This initiative resulted in water and electricity savings without impacting the efficiency of the air compressing system.



Reduction in energy
consumption

293
MWh/year



Reduction in energy costs

1.09
million baht



Reduction in GHG
emissions

135
tCO₂e/year

Gas Compressor Power Reduction Project



Gas Compressor Power Reduction Project of Bangpa-in Cogeneration Power Plant

Bangpa-in Cogeneration Power Plant enhanced its electricity production efficiency by adjusting the circulation level to suit the condition of the power plant in order to reduce the energy consumption of the gas compressor.



Reduction in energy
consumption

238
MWh/year



Reduction in energy costs

885,952
baht



Reduction in GHG
emissions

110
tCO₂e/year

Electricity Saving Project



Electricity Saving Project in office

CKPower launched a campaign encouraging employees across the organization to save energy at work using the “Switch off – Adjust – Change – Unplug” method with the goal of rising awareness of resource efficiency and the value of resources.



Reduction in energy
consumption

10
MWh/year



Reduction in energy costs

60,234
baht



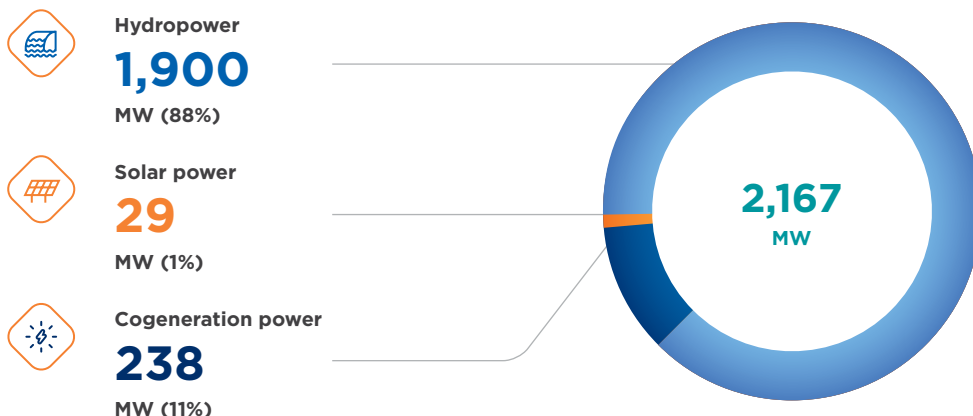
Reduction in GHG
emissions

5
tCO₂e/year

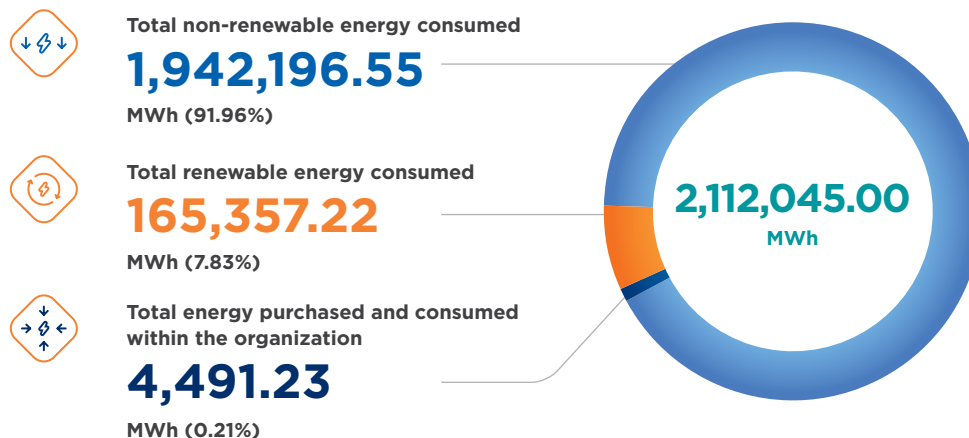


Performance

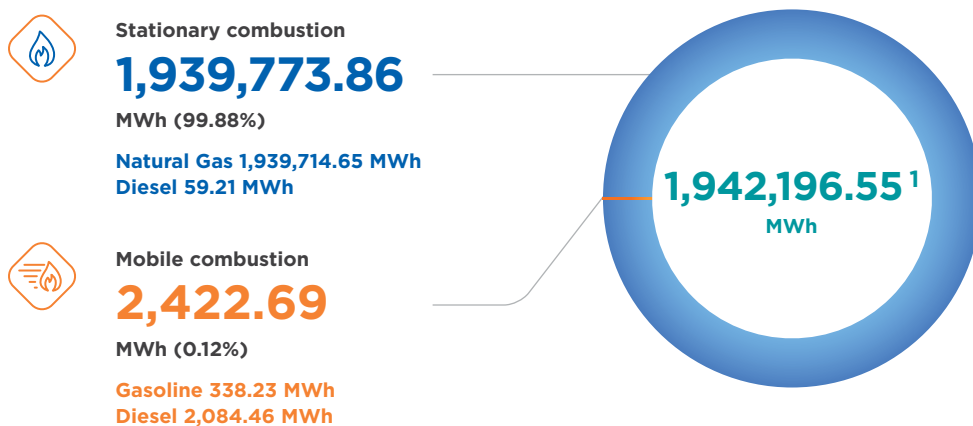
In 2022, CKPower's investment in renewable energy was as detailed below.



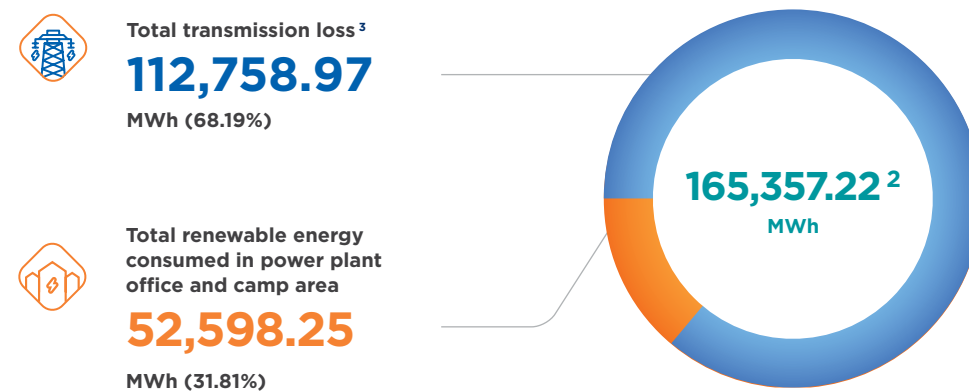
Total energy consumption within the organization



Total non-renewable energy consumed



Total renewable energy consumed



Note:

1. Calculate from Total non-renewable energy consumed [3,536,148.18 MWh] - Total non-renewable energy sold [1,593,951.63 MWh] in 2022

2. Calculate from Total renewable energy generated [10,048,423.25 MWh] - Total renewable energy sold [9,883,066.03 MWh] in 2022

3. Calculate from Total renewable energy generated [10,048,423.25 MWh] - Total renewable energy sold [9,883,066.03 MWh] - Total renewable energy consumed in power plant office and camp area [52,598.25 MWh] in 2022



In 2022, CKPower successfully achieved its GHG emission reduction target and surpassed its goal for reducing Scope 1 and Scope 2 emissions



Resulting in
a total GHG reduction of

3,533.68
tCO₂e

GHG emissions per total
electricity generation

0.0613
tCO₂e/MWh

Scope	Total GHG emissions (tCO ₂ e)	GHG emissions targets (tCO ₂ e)
1,2	717,775.96	721,309.64
1	715,530.79	716,049.76
2	2,245.17	5,259.88



ENVIRONMENTAL MANAGEMENT



2022 Achievements

Case of violation of environmental laws or regulations



0

case

Water resources

The quality of the water
discharge complied with
the standards required by the law.



Total water withdrawal
amounted to

10,621.26 million liters

Waste management

The management of non-hazardous
and hazardous waste complied with
the standards required by the law.



Total weight of non-hazardous waste
generated amounted to

120.53 metric ton



Total weight of hazardous waste
generated amounted to

15.62 metric ton

Air quality

The air quality at the flare stacks
complied with the standards
required by the law.



The amount of NOx emitted
amounted to

636.07 metric ton



The amount of SOx emitted
amounted to

34.19 metric ton



The amount of
particulate matters (PM)
emitted amounted to

28.98 metric ton

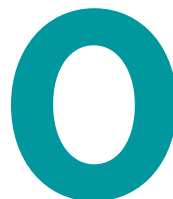
SDGs





2022 Targets

Case of violation of environmental laws or regulations



case

Water resources

The quality of the discharged water complies with the standards required by the law.



Total water withdrawal amounts to

11,155 million liters

Waste management

The management of non-hazardous and hazardous waste complies with the standards required by the law.



Total weight of non-hazardous waste generated amounts to

130 metric ton



Total weight of hazardous waste generated amounts to

20 metric ton

Air quality

The air quality at the flare stacks complies with the standards required by the law.



The amount of NOx emitted amounts to

750 metric ton



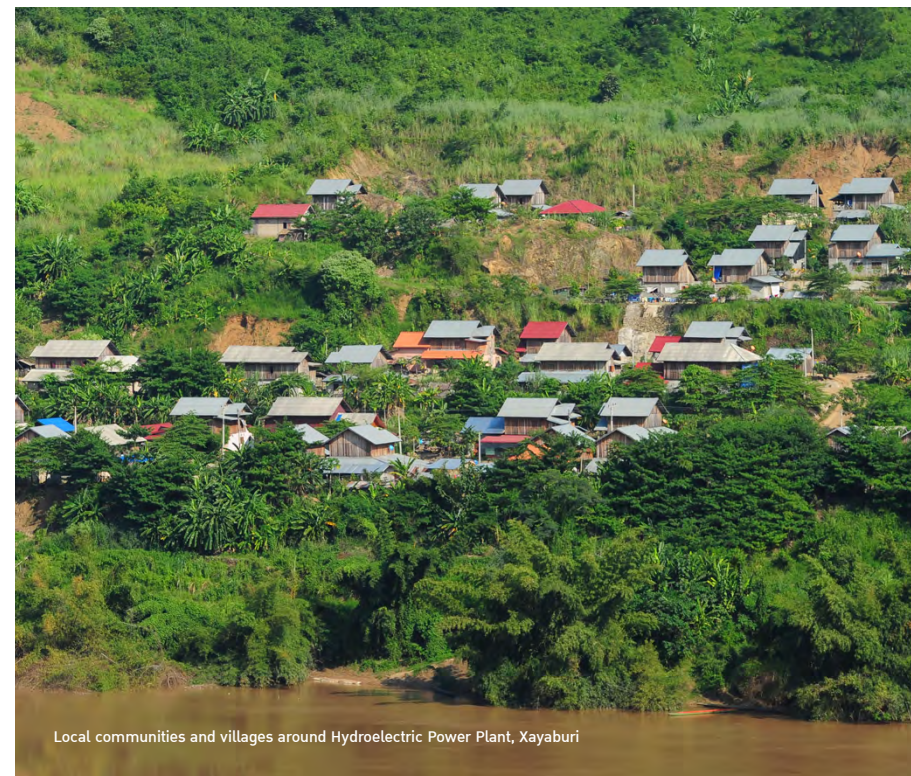
The amount of SOx emitted amounts to

231 metric ton



The amount of particulate matters (PM) emitted amounts to

88 metric ton



Local communities and villages around Hydroelectric Power Plant, Xayaburi

Impact on Business

CKPower recognizes the significance of the conservation of natural resources and the environment as industrial development without proper environmental management can adversely impact the economy and the quality of life in local communities and society at large. Such as a producer of electricity from renewable energy, which creates minimal pollution and ensures maximum resource and operational efficiency, CKPower strives to reduce resource consumption in its business operations, minimize environmental impact through effective environmental management, prioritize cutting-edge environmentally friendly technology, and foster knowledge and awareness among its stakeholders to contribute to the sustainability of society.

Challenges and Opportunities

The power production industry plays a crucial role in driving the economy. CKPower places emphasis on renewable energy in its power generation in order to mitigate environmental impact on the macro level, in line with the increased concern over the health of the environment and natural resources of the international community. In addition, CKPower devises business strategies in response to such trends to better accommodate eco-friendly business management each year and adjusts its business operations in compliance with the increasingly stringent laws and requirements of the regulatory bodies. In response to such challenges, it is vital for CKPower to improve its engineering knowhow, develop the capabilities of its employees, and adopt advanced green technologies to ensure its sustainable growth.



— **“In addition to environmental impact control, monitoring, and inspection and preventive measures against potential impact in compliance with laws and regulations, CKPower has made active effort to increasingly reduce GHG emissions in preparation for a zero-carbon era and utilize the knowledge of its specialists to initiate projects and educate communities around its power plants so that they can apply the knowledge to their daily lives.”**

—

Ms. Panisa Jattamas

Senior Specialist – Environment and Society
Sustainability Working Team

Commitment

CKPower is committed to sustainable business expansion through the increase of renewables-based production capacity alongside resource efficiency maximization and efficient environmental management in strict compliance with international standards and relevant laws. In tandem, the Company seeks to develop its personnel and technologies in support of its ever-evolving guidelines for environmental management.

Operational Guidelines

Guidelines for Environmental Management

CKPower is committed to investing in renewable energy projects, including hydroelectric power plants and solar power plants. Despite its cogeneration power plants, which can produce both electricity and steam and is powered by natural gases, the Company strives to develop a production process that emits low pollution and can reduce GHG, maximize resource efficiency without causing environmental impact, elevate its innovation and technology for environmental quality inspection to the legally-mandated and international standards, as well as disseminate knowledge to employees as well as external stakeholders.

To accomplish these goals, CKPower has formulated an environmental policy and social and environmental guidelines and has obtained ISO 14001:2015 accreditation for its environmental management systems. In addition, all of CKPower's plants have undergone environmental impact assessments, consisting of a stakeholder engagement process on relevant environmental issues, impact mitigation and prevention, and impact remediation. Every power plant has been given approval to operate from relevant regulatory bodies, and CKPower reports its performance as specified in the environmental impact prevention and mitigation measures and environmental impact inspection measures. In 2022, CKPower underwent environmental, waste, and air pollution data verification by EY Office Co., Ltd., an external verifier.

Environmental Policy

[CLICK](#)



Social and Environmental Guidelines

[CLICK](#)



1

Prioritizes investment in clean and renewable energy projects



2

Maximize resource efficiency and minimize environmental impact



3

Develop and utilize innovative technology to ensure compliance with legal requirements and international standards for environmental quality.



4

Collaborate with stakeholders to co-develop resource management practices and promote sustainable development and conservation in local communities.

Water Management

CKPower's water management approach is comprehensive and aimed at ensuring a sustainable and efficient use of this critical resource in its power generation activities. Given that hydroelectric power accounts for over 80% of its total power generation, CKPower recognizes the importance of monitoring water sources to prevent shortages, reducing water consumption and promoting water efficiency, as well as ensuring compliance with the required standards for discharged water across all its buildings and areas of operation.

CKPower has established a process for monitoring the water sources for the production of each power plant and taken into account factors for water shortage in each locality by conducting a risk analysis based on the AQUEDUCT Water Risk Atlas, developed by the World Resources Institute (WRI), in order to identify areas experiencing water stress and establish suitable water management for each context. The Company also studies impact on its production and the water consumption of local communities as well as promotes the participation of local residents and government agencies in engaging in water conservation from upstream to downstream, establishing preventive and mitigation measures, and defining water management targets. CKPower has also developed innovations and deployed them in the main inlet valve adjustment project and put in place measures to maximize water efficiency, such as the production system improvement at BIC to enable closed-loop water circulation.

Waste Management

CKPower has implemented waste management protocols to minimize direct and indirect environmental and social impacts of hazardous and non-hazardous waste. These protocols are applied to all of the Company's activities, both in its offices and power plants. The aim is to reduce the amounts of resources consumed and waste generated, and to ensure that waste is reused in accordance with circular economy principles. Each type of waste is managed correctly and appropriately, and training on proper waste management is provided to employees. The Company is committed to complying with relevant regulations in this area.

Air Pollution Management

CKPower prioritizes renewable energy sources, such as hydropower and solar power, which do not involve the burning of fossil fuels or emit air pollutants, for over 80% of its total power generation, while natural gas is used as a fuel at the cogeneration power plants.

To ensure compliance with environmental regulations and standards, CKPower monitors and measures the air quality at its power plants through continuous emission monitor systems (CEMs), which are installed at the flare stacks and show results in real time. The Company also discloses the results of its air quality inspection as stipulated in its environmental impact monitoring and inspection measures in environmental impact assessment (EIA) reports twice a year. In 2022, the air quality at the power plants was above the legally required standard across all categories.

Waste Management Activities in 2022

Biowaste Soil Conditioner Project



The Vegetable patches from Biowaste Soil Conditioner Project

The Xayaburi Hydroelectric Power Plant initiated the Biowaste Soil Conditioner Project, to reduce the amount of waste generated, create added value, and reduce GHG emissions from incineration. The project involved sorting biodegradable waste, such as food scraps and fruit peels, from kitchens and canteens and subjecting them to biodegradation into a soil conditioner for use in vegetable patches in the area of operation and employee accommodations. In 2022, CKPower produced 526 kilograms of soil conditioners from a total of 9.20 tons of non-hazardous waste. The project not only provided employees organic pesticide-free vegetables but also reduced food ingredient expenses both for the power plant kitchen and the employees' households.



In 2022, CKPower was
produced soil conditioners

526 kg



Reduced non-hazardous
waste disposal

9.20 tons

Think Before You Print Project

CKPower has implemented the “Think Before You Print Project” to encourage employees to reduce the printing of color documents and promote awareness of sustainable practices. The goal of the project is to reduce color document printing by 35% per person. In 2022, CKPower achieved a 42.27% reduction in color document printing compared to the previous year.

The company communicated the successful outcome to employees at all levels to foster morale and encourage continued cooperation in improving sustainability efforts in the future.



Target of the project is to
reduce color printing rate

35% per person



In 2022, CKPower was able to reduce
in color printing rate

42.27% per person

Paper-X Project

CKPower launched the Paper-X Project with the aim of reducing waste and maximizing paper recycling and reuse. The project was initiated to reduce 1,000 kilograms of waste paper, which was divided into three types (1) white paper, 2) cardboard/brown paper, and 3) others] for proper recycling and distribution to schools in the vicinity of CKPower’s power plants. The project was successful in enabling employees to sort waste paper correctly, reducing resource consumption in paper production, and supporting local education.

In 2022, CKPower was able to enter a total of 2.02 tons of sorted used paper into a proper recycling process, which was produced into 30 reams of paper to be distributed to the schools around its power plants, namely Bangpa-in School, Wat Prem Preecha School, Chumchon Wat Kampang School, Ban Plub School, Chaofasang School, and Wat Rat Sattatham School in Ayutthaya, thus reducing resources for white paper production. The total paper produced was valued at THB 2,700, amounting to 1.26 trees, 519.17 liters, 28.18liters of fuel, and 296.67 kWh of electricity saved.

The Paper-X Project demonstrated CKPower’s commitment to waste reduction and recycling while supporting local education, contributing to the Company’s sustainability efforts.



In 2022, CKPower was able to enter
used paper in to recycling process

2.02 tons



Recycle paper

30 reams

ReFun Machine



Employees help each other to bring plastic bottles for recycle at Wat Chak Daeng Community

CKPower launched the ReFun Machine Project as part of its efforts to promote proper waste separation as well as educate employees on each type of waste and ask for their cooperation in reducing plastic waste by collecting used plastic bottles to be recycled and processed into various products for Wat Chak Daeng Community. The project not only reduces waste and adds value to plastic bottles but also generates income and creates jobs for local residents. The products from Wat Chak Daeng Community were also given to children, the elderly, and local residents around the power plant as part of community engagement and CSR projects.

In 2022, the ReFun Machine Project successfully collected 1,193.21 kilograms of PET bottles, equivalent to 41,0452 bottles. These bottles were transformed into 500 cloth bags for use as disaster relief care packages, which were given to victims of natural disasters and children. Additionally, the project generated THB 25,000 in revenue for the Chak Daeng Temple Community.

This project not only contributes to waste reduction and environmental sustainability but also fosters community engagement and generates social and economic benefits for local communities.



Collected plastic bottles

41,052 bottles



Generated revenues and created jobs
for Wat Chank Daeng Community

25,000 baht

Waste Sorting Bin Program



CKPower has initiated the Waste Sorting Bin Program to ensure that waste in its offices is properly sorted and recycled or disposed of appropriately, to add further value to the waste. The following six categories of waste bins have been placed at various points within the offices: 1) general waste 2) paper 3) recyclable plastic 4) hazardous waste 5) infectious waste 6) organic waste. The weight of each type of waste is recorded as comparison data for determining the reduction of waste in the future, and employees are encouraged to learn how to separate waste at the source. To this end, knowledge and understanding of the types and proper sorting of waste have been instilled in employees and executives through the training activity on CKPower Academy mobile application. In 2022, employees were able to separate waste correctly, enabling proper disposal and generating further value from the waste.



“Grow Green Hero” Project for Waste Reduction

CKPower joined forces with the Scholars of Sustenance Foundation and Green2Get Co., Ltd. to launch the Grow Green Hero Project, aimed at raising awareness and educating employees on proper waste management. The project focused on addressing waste problems, proper waste management from upstream to downstream, and the creation of added value to waste, in order to expand towards projects and activities where everyone could take part in reducing waste continuously and sustainably.

As part of the project, change leaders known as “Grow Green Heroes” were developed to promote proper waste management. The participating employees were divided into groups to collaboratively develop waste management projects that could be applied to their organizations and lead to tangible changes. An ideation workshop was also held. The winners were given budgets to further develop their projects for deployment in 2023.

In 2022, the project produced a total of 23 Grow Green Heroes to drive waste management in their respective organizations.

The project aims to reduce waste continuously and sustainably, while promoting environmental stewardship and responsibility among CKPower’s employees.



Grow Green Hero
in 2022

23 persons

2562 - 2565



Violation of environmental laws or
regulations (number of case)



Environmental liability (baht)



Expected environmental liability
accrued at year-end (baht)

=

0



BIODIVERSITY



The local way of life along the Mekong River near the Xayaburi Hydroelectric Power Plant

2022 Achievements



DEVELOPED

Biodiversity Strategy



FORMULATED

Phase 1 of the Biodiversity
Roadmap

Long-term targets



DEVELOP

a biodiversity roadmap
by 2023



ASSESS

residual impacts at all operation
sites by 2025



NO NET LOSS

of biodiversity and ecosystem
services by 2040

Impact on Business

Biodiversity, in terms of ecosystems, species, and genetics, not only contributes to ecological balance and fosters stability for all lives, including for humanity, also provides resources for fostering business growth and enhancing competitiveness. As its business is closely linked to local

communities by nature, it is necessary for CKPower to understand and implement careful biodiversity management in order to preserve ecological equilibrium, which can create sustainable benefits for the business, environment, and communities.

SDGs





Any business operation failing to take into consideration its impact on biodiversity can lead to ecosystem degradation, loss of valuable biodiversity areas, and species extinction, which can potentially affect the social trust upon the company and may cause business disruption. As such, CKPower operates its business with fully aware of potential impacts upon the biodiversity. The biodiversity impact assessment have been undertaken at every operation sites in order to formulate preventive and mitigation measures. The Company also promotes the use of technology and innovation to support environmental conservation, rehabilitation and collaboratively networking with local communities and stakeholders in the vicinity of its businesses toward the participatory approach in the preservation of ecological balance.

Accordingly, CKPower emphasizes on maintaining the biodiversity across all processes at every operation sites. The studies and biodiversity impact assessment is undertaken to formulate preventive and mitigation measures for all sectors. The Company also promotes the use of technology and innovation to support environmental conservation and biodiversity restoration and fosters participation among local communities around its plants and relevant stakeholders.

Challenges and Opportunities

CKPower is committed to increasing its clean energy capacity by promoting ecological and biodiversity services in order to foster national energy security and contribute to the mitigation of climate change. However, as power production may impact the area around the site of operation environmentally, it is essential for CKPower to study the impacts of its power plants on ecosystems and biodiversity to prevent or minimize as well as initiate programs to offset, promote, and restore biodiversity.

Furthermore, the promotion of ecosystem and biodiversity services is in line with the Taskforce on Nature-related Financial Disclosures (TNFD) Framework issued by the United Nations and

with Sustainable Development Goal (SDGs) 15, which directly affects the business sector, under Part 2 of the 15th meeting of the Conference of the Parties to the UN Convention on Biological Diversity (CBD COP 15 Part 2), held in December 2022. Such services also demonstrate CKPower's stance as a clean energy producer that values biodiversity in accordance with international operational guidelines.



—
“CKPower prioritizes conservation of the biodiversity in every process at all operation sites and highly regard the ecosystem services to the livelihood of the local communities along the Mekong River Basin. Intensive studying, impact assessment, and continuous monitoring have been undertaken as the basis for implementation of preventive and mitigation measures. In particular, the migratory fishes in the upper zone of Mekong River, the fish migration pattern and life cycle have been exclusively studied using an advance well-functioning technology, the passive integrated transponders (PIT) tags to monitor and identify species and physical characteristics.”
 —

Mr. Thanasak Poomchaivej

Chief Engineer - Environmental and Social Division
 Head of Ambition - Biodiversity

Commitment

CKPower is dedicated to biodiversity preservation and management and has incorporated biodiversity into its sustainability strategies as well as established plans for the assessment of residual impacts resulting from the operation of every plant under its management as well as every new project and joint venture. These assessments aim to define suitable management guidelines for the prevention and mitigation of impacts on biodiversity and promote the preservation and restoration of ecological balance across the supply chain, in line with its aspiration to achieve no net loss (NNL) of biodiversity and ecosystem services by 2040. To this end, CKPower has announced its biodiversity management commitment and policy as well as developed a biodiversity roadmap to demonstrate its intention and provide unified enterprise-wide guidelines for the promotion of biodiversity. CKPower aims to become a leader in environmentally responsible energy production, contributing to the long-term sustainability of the planet and the well-being of local communities.

Operational Guidelines

Biodiversity Management

In line with its vision to become a leading electricity producer in Thailand and Southeast Asia that operates efficiently on the basis on environmental responsibility and strives to promote biodiversity in order to sustainably preserve and pass on natural resources to posterity, CKPower has established a Biodiversity Management Policy to serve as guidelines for uniform practice across the organization. The core principle is to operate in strict compliance with biodiversity laws and regulations, promote the utilization of innovation and technology in business operations, communicate and raise awareness among employees at all levels and all stakeholders across the supply chain. Biodiversity preservation and restoration projects have been initiated to sustain the ecosystem services through the community engagement.



Biodiversity
Management Policy

CLICK



Alongside its biodiversity preservation efforts and electricity production under its management framework, CKPower has applied the Mitigation Hierarchy to various processes, from design to construction all the way to the management of all operation sites to avoid activities with potential impacts upon the biodiversity. It has also formulated measures to minimize and mitigate any potential impacts as well as engaged in restoration efforts and offset any residual impacts through ecosystem and biodiversity services to ensure no net loss overall.

Biodiversity Roadmap

In 2022, CKPower developed Biodiversity Roadmap Phase 1 spanning a five-year period from 2022-2026 in pursuit of its goal to achieve no net loss of biodiversity and ecosystems by 2040. The roadmap includes the following:



1



Monitor

CKPower monitors the terrestrial and aquatic biodiversity in accordance with the Environmental and Social Management and Monitoring Plan during Operation Phase (ESMMP-OP) under the principles of environmental impact prevention and mitigation measures. Biodiversity risk assessments have also been conducted at Nam Ngum 2 Hydroelectric Power Plant and the Xayaburi Hydroelectric Power Plant in compliance with applicable laws, encompassing construction projects and the operation of both power plants. In addition, biodiversity management initiatives have been undertaken with the goal of preserving the aquatic biodiversity at a level as close as possible to its previous natural state, including:

- The water quality monitoring of the reservoir of the Nam Ngum 2 Hydroelectric Power Plant. Support and takes part in the preservation of the ecosystem of the watershed catchment area as to maintain its natural condition for sustainable ecosystem services.
- The Xayaburi Hydroelectric Power Plant keep tracking of the environmental quality elements of the Mekong River, such as sediment load and concentration, , river water quality, fish abundance and species, and fish larvae and eggs in the area. Support has also made to the forest conservation and reforestation efforts.

2



Study

The study of the biodiversity and species is planned in 2024 to assess the protected and conservation areas, and the protected species published by the International Union for Conservation of Nature (IUCN) 2024. Currently, None of power plants and offices operated by CKPower are located in the forest reserves, world heritage sites, and neither in the IUCN protected area categories 1-4.

3



Access

CKPower assesses risks and residual impacts on biodiversity resulting from the operation of all business units under its management to plan offsets through ecosystem and biodiversity services and prevent net loss despite the fact that some of its facilities operate in industrial estates and have low ecological impacts.

4



Manage

A biodiversity management plan has been drawn up to encompass all critical biodiversity areas.

5



Support

CKPower fosters engagement with stakeholders by supporting the development of wildlife conservation projects and occupation promotion initiatives with the communities in the vicinity of its power plants.



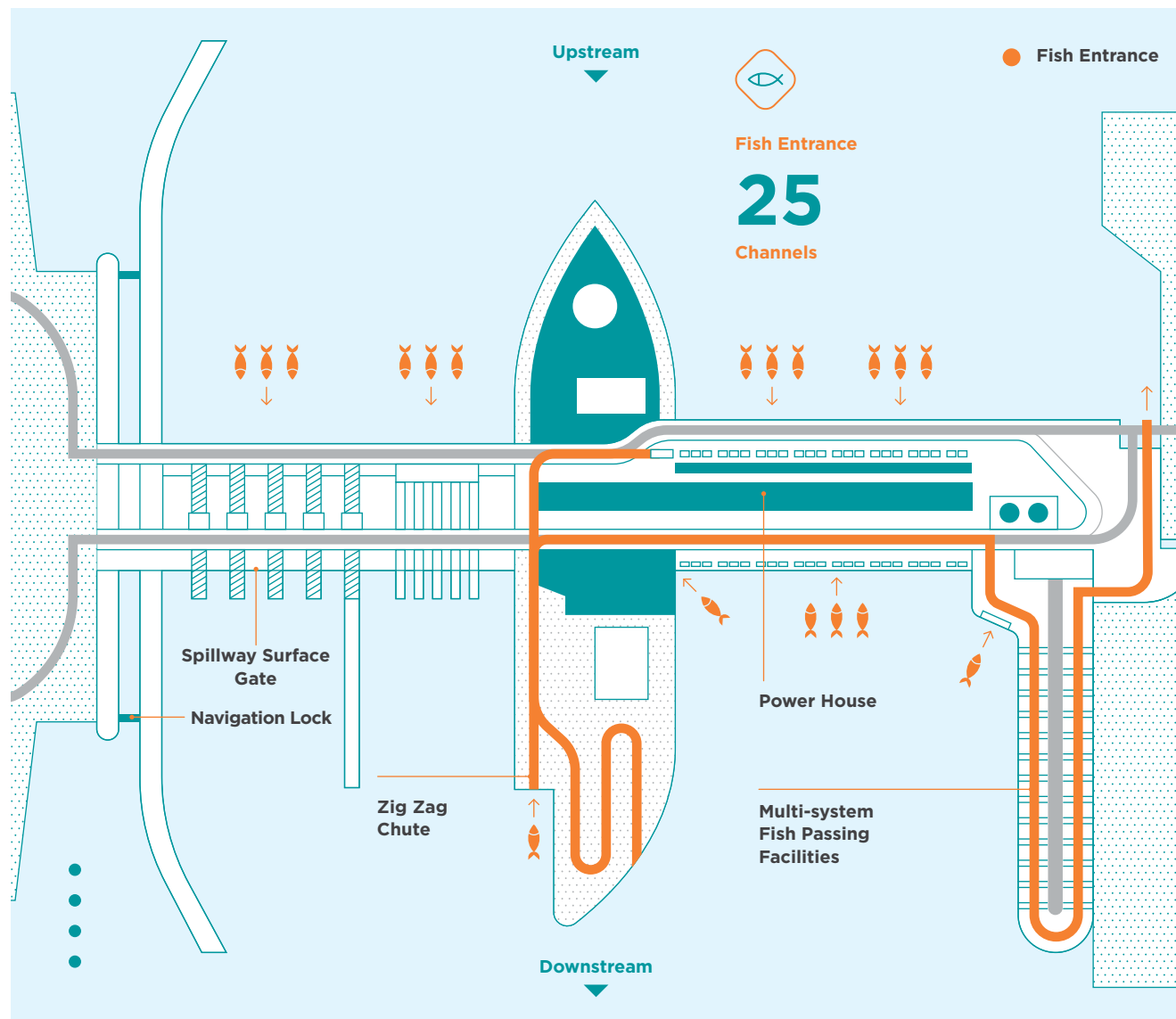
Biodiversity Management Projects

Multi-System Fish Passing Facilities at Xayaburi Hydroelectric Power Plant

CKPower operated the multi-system fish passage facilities which designed to protect the Mekong River aquatic biodiversity in association with the Xayaburi Hydroelectric Power Plant. The Xayaburi HPP is a 1,285 MW power plant located on the Mekong River between Xayaburi and Luang Prabang in Lao PDR with an operational area of 564,000 hectares. During the design and construction phases, the Company conducted studies to ensure the facilities would be suitable for the local fish species and assessed the extinction risk of marine species based on the IUCN Red List before launching the operation of the facilities.



Xayaburi Hydroelectric Power Plant



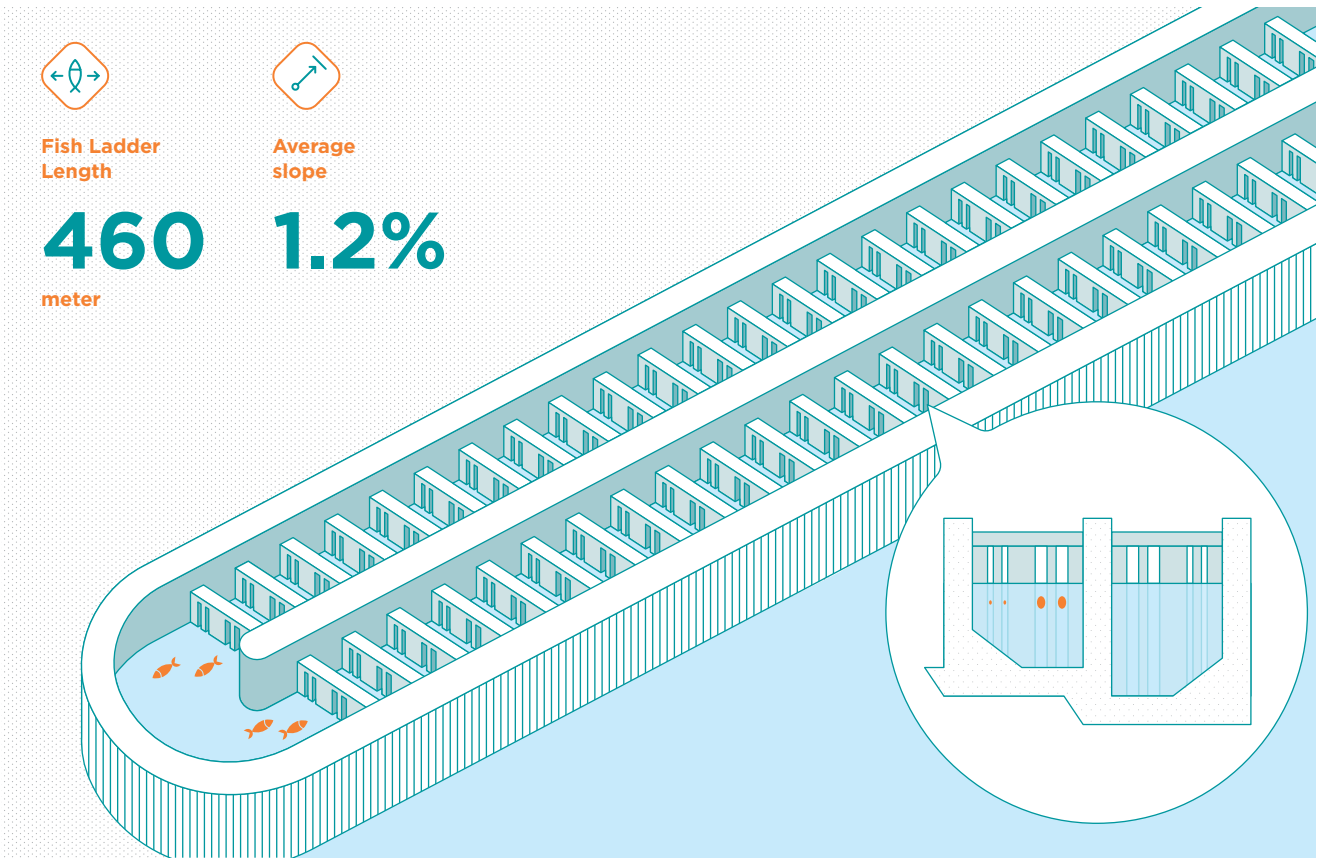
The multi-system fish passage facilities at the Xayaburi Hydroelectric Power Plant comprises of a vertical-slot fishway and large fish lock with the size of 18 meters in width and 16 meters deep at the deepest part. The design of the facilities has been tailored specifically to the sizes and behavior of the fish in the Mekong River,

which usually migrate upstream during the breeding and spawning season, in order to preserve the diversity of the fish species and their life cycles. As such, the facilities have enabled the Xayaburi Hydroelectric Power Plant to operate while also maintaining the natural balance of the Mekong River Basin.

To study the suitability of the multi-system fish passage facilities and track their efficiency, CKPower has formed partnerships with the following:

- Australian Center for International Agricultural Research (ACIAR)
- Charles Sturt University, Australia Living Aquatic Resources Research of Lao (LARReC)
- National University of Lao (NUOL)

The Multi-System Fish Passage Facilities



Multimedia on the Multi-system
fish passage facilities

CLICK

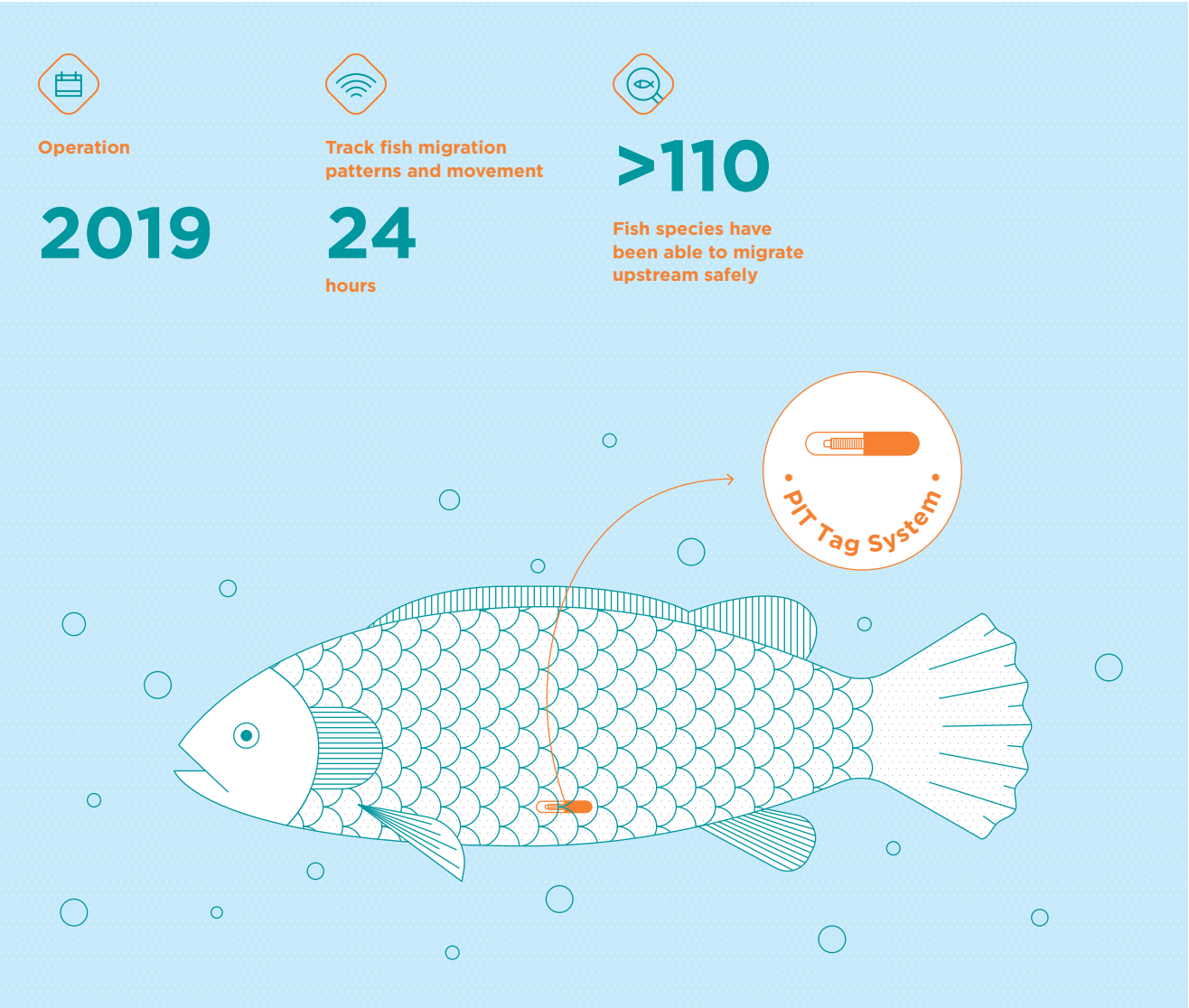


CKPower has implemented the Passive Integrated Transponder (PIT) Tag System to study fish behavior in association with the fish passage facilities. The Hydroacoustic Cameras (ARIS) is utilized to track fish migration patterns and movements passing the power plant 24 hours. Since the beginning of its operation in 2019, the multi-system fish passage facilities has shown successfully facilitation to fish passing over the structure as designed and over 110 species have found to migrate upstream safely. As such, the multi-system fish passage facilities have enabled CKPower to meet its power production target without impacting fish migration.



Study of fish migration using Hydroacoustic Cameras (ARIS)

Passive Integrated Transponder: PIT Tag System



KIND NEIGHBOR



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SOCIAL AND COMMUNITY CARE



Local residents and job creation in the neighboring communities of the Xayaburi Hydroelectric Power Plant

SDGs



2022 Achievements



ZERO

unresolved
complaint



CREATE

shared value for society and
ecosystems through renewable
energy.



736
children



12
communities



Renewable Energy to
improve the quality of life
in local communities.

34,030
watts



Achieved a reduction in greenhouse
gas emissions through various
initiatives and innovations

53,476
kgCO₂e/year

Targets and Performance Indicators



ZERO

unresolved complaint



CREATING

shared value for society and ecosystems
through renewable energy by 2026.



Community Engagement and Development Policy

[CLICK](#)



Social and Environmental Guidelines

[CLICK](#)



“CKPower seeks to cultivate a giver DNA among its employees and enhance its clean energy engineering capabilities to meet current demand and advance towards collaboration for better quality of life in communities and society through “Competency – Co-creation – Cooperation – Connection” strategies, thus generating sustainable positive value consistent with the way of life in communities around the power plants and in remote areas, both in Thailand and Lao PDR.”

Ms. Wipawinee Chaisutthiroj

Senior General Manager – Corporate Sustainability Management Division
Head of Ambition - Social and Community Care

Commitment

CKPower recognizes the importance of social responsibility and prioritizes both business development and sustainability for communities, which are key stakeholders and essential to its operations. In line with this, the company has established a community engagement and development policy to ensure the effectiveness and consistency of its community development efforts. CKPower also seeks to utilize its capabilities and business expertise to support development initiatives and promote knowledge exchange between the company, its employees, and communities to create shared value and enhance the quality of life for local residents.

Operational Guidelines

CKPower has established a comprehensive community engagement and development policy, as well as social and environmental guidelines, to provide guidance for its business operations and social and community engagement efforts. The Sustainability Working Group is responsible for utilizing these policies and guidelines to develop key performance indicators, guidelines, and action plans that align with CKPower’s sustainability objectives and strategic goals in support of the United Nations Sustainable Development Goals (UN SDGs). The group is also responsible for tracking, assessing, and reviewing performance to ensure continuous improvement and sustainable co-existence with communities. These efforts demonstrate CKPower’s

commitment to responsible business practices and creating shared value with its key stakeholders.

Community Engagement

CKPower places high importance on community engagement to foster confidence and demonstrate its transparency in every community across 100% of its areas of operation before and during power plant construction and during commercial operation. The Company conducts site surveys to understand the traditional way of life and the quality of life in communities around the power plants across economic environmental, social, and human rights dimensions as well as carries out surveys on their problems, needs, and satisfaction and works with local residents to identify impacts and initiate CSR activities/projects to address their expectations and concerns that can be integrated in accordance with CKPower’s clean energy engineering capabilities in order to create social value. This is achieved through the 3Cs principle.



Under the 3Cs principle, CKPower carries out community engagement projects compatible with the local way of life through the “Competency – Co-creation – Cooperation – Connection” strategies. In essence, CKPower uses its capabilities to empower communities, society, and stakeholders (Competency), advances ideas, innovations, and processes towards sustainability (Co-creation), fosters employee and stakeholder participation (Cooperation), and collaborates with its network partners for sustainable development (Connection).

Impact on Business

CKPower recognizes that communities and society are critical stakeholders, and thus provides them with opportunities for engagement while addressing issues affecting their quality of life. This approach aims to strengthen their economic resilience and reduce social inequalities, which could potentially impact other stakeholders. In order to ensure a sustainable and reliable power generation business, it is necessary to obtain a social license to operate. To achieve this, CKPower supports local communities through the provision of expertise, skills, and equipment via various community activities. This helps to enhance employee engagement, build brand awareness, and strengthen relationships with the communities, thereby adding significant value to the business.

Challenges and Opportunities

CKPower recognizes the importance of cooperation and understanding among all sectors in promoting the growth of the company, particularly in a time of information overload. To ensure that the company is aware of concerns and can correct misconceptions, CKPower has established engagement and feedback processes. By doing so, CKPower can formulate plans and address potential impacts effectively and promptly. Moreover, the company has fostered a collaborative network with all sectors to conduct activities that meet stakeholders’ expectations. This approach allows CKPower to create shared value, improve the quality of life, promote self-reliance in communities, and drive sustainable development.

“Competency-Co-Creation-Cooperation-Connection” strategy.



Community visit and discussion panels with communities around the Xayaburi Hydroelectric Power Plant

COMPETENCY

Empower communities with our core competency and give a better quality of life through access to clean energy and essential utilities

CO-CREATION

Co-create with community to improve processes, and develop innovations for a sustainable society

Connect with value co-creation partners to sustainably strengthen and empower society

COOPERATION

Cooperation with employees and communities to bring about development and advancement of society at large

CONNECTION

CKPower values the opinions and needs of its local communities and has established a mechanism for community engagement to ensure the transparency of its operations. In 2022, opinion surveys identified areas of concern for the communities around power plants, including the improvement of their quality of life, access to renewable energy, educational support, and provision of public infrastructure. CKPower worked with the communities to address these issues and implemented remediation actions. The company also has a process for receiving and responding to community complaints in accordance with ISO14001 standards, and holds annual seminars with local communities. The outcomes of opinion surveys and site visits have informed CKPower’s CSR strategies for the years 2022-2026, which aim to create projects that align with local customs and the company’s expertise in clean energy engineering. CKPower is committed to building sustainable relationships with its communities and addressing their concerns to create shared value.

CSR Strategies

In 2022, CKPower formulated its community and social care strategies that would enable it to meet the needs of local communities and fully utilize the Company’s clean energy engineering capabilities for their benefits in accordance with United Nations Sustainable Development Goals (UN SDGs) in order to produce quantifiable benefits. The strategies also encompass the development of innovation that can bring to communities economic, social, and environmental benefits. The Company has also outlined the direction of its social and community care efforts for a five-year period from 2022 to 2026. One of the key objectives of its CSR strategies for community and social care is to establish a framework for its social value creation initiatives based on three key principles.

Three Key Principles



1 Quality of Life:

Improving access to renewable energy for a better quality of life.

2 Natural Resources and Environment:

Conserving, protecting, and restoring natural resources and the environment sustainably

3 Job Security:

Further enhancing innovations and creating opportunities of occupation development for communities



CKPower's Framework for Social Value Creation

Mission

To generate the optimal, stable and fair return to stakeholders
and to be responsible for environment, community and all stakeholders.



CSR focus

Improving access to renewable energy for a better quality of life.



Project driver

1. Hinghoi Project

- Clean electricity for communities
- Clean water for communities
- Clean electricity for Teacher for Change
- Introducing Clean Energy to Communities

Outcome in 2026

Children and communities have access to renewable energy, in accordance with their specific needs, while reducing greenhouse gas emissions.

Education and awareness raising programs on renewable energy are provided for children and youth



CSR focus

Conserving, protecting, and restoring natural resources and the environment sustainably.



Project driver

2. Grow Green

- Waste to Value
- Grow Together
- Green Power Plant

Outcome in 2026

Natural resource and environmental protection education and awareness raising programs are provided for employees, children, and communities. Terrestrial forest conservation and protection areas are expanded.

Renewable electricity for a better quality of life

Preserving and restoring natural resources



Implementing renewable energy solutions promotes innovation within society, generates value for both the community and the environment, and leads to a more sustainable and enhanced quality of life

Co-creating innovations to enhance opportunities for communities



CSR focus

Further enhancing innovations and creating opportunities of occupation development for communities



Project driver

3. OPOP (One Power plant One Product)

- Development of innovations to create job opportunities, improve products, and increase income for local communities.
- Strengthening the network among partners for innovations in occupation development

Outcome in 2026

Product development in communities leads to increased income and overall benefits

Performance



Surveys of opinions, concerns, and needs and impact assessments were conducted in 100% of the communities around the power plants.

100%



Volunteer work

5,800
hours



Access to renewable energy for enhancing the quality of life in communities

53,476
kgCO₂e/year



The satisfaction rate among communities regarding the CSR activities was 80%.

80%



Create shared value for society and ecosystems through renewable energy

736
children



Access to renewable energy for enhancing the quality of life in communities

34,030
watts



complaint and unresolved complaint

0
complaint



Create shared value for society and ecosystems through renewable energy

12
communities



CSR projects/activities

84
projects/activities

CSR Projects/Activities in 2022

7

projects/activities

Renewable energy for better quality of life in communities
11.18 million baht

10

projects/activities

Support for networks for renewable energy
0.27 million baht

20

projects/activities

Community relations and charity
0.66 million baht

4

projects/activities

Natural resource conservation and restoration
0.17 million baht

1

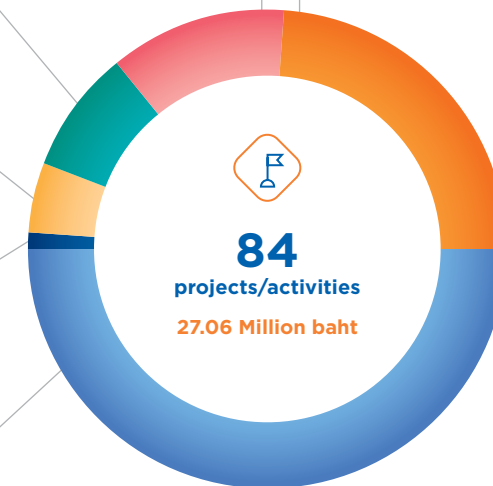
projects/activities

Innovations for the creation of opportunities for communities
0.03 million baht

42

projects/activities

Quality of life around power plants
14.75 million baht



Quality of life around power plants

11

projects/activities

Education
0.55 million baht

6

projects/activities

Public health
5.36 million baht

6

projects/activities

Sports
5.68 million baht

3

projects/activities

Tradition and culture
0.12 million baht

13

projects/activities

Public infrastructures
2.60 million baht

3

projects/activities

Natural disaster reliefs
0.44 million baht

Renewable Energy for Better Quality of Life in Communities

Overall Performance



Children benefitting from
outreach programs

736
children



Communities engaged

12
communities



Renewable energy have been
made accessible for better
quality of life

34,030
watts



Greenhouse gas emissions reduced

53,476
kgCO₂e/year

Improving access to renewable energy

Pa Khao Lam Village,
Chiang Mai



900
watts

Improving access to renewable energy

Ban Mae Mu Nai Border Patrol Police
Learning Center under the support of
CKPower Plc., Chiang Mai



3,000
watts

Improving access to renewable energy

Khlong Jik Community,
Ayutthaya



1,200
watts

Improving access to renewable energy

Wat Na Haui, Pranburi District,
Prachuap Khiri Khan



16,630
watts

Improving access to renewable energy

Hin Hua Suea Nursery School,
Lao PDR



2,400
watts

Improving access to renewable energy

Na Bong Village,
Lao PDR



9,900
watts

Providing support for renewable energy education to teachers in Teach for Thailand Project

Pakthongchai Choonhawan
Wittayakarn School,
Nakhon Ratchasima



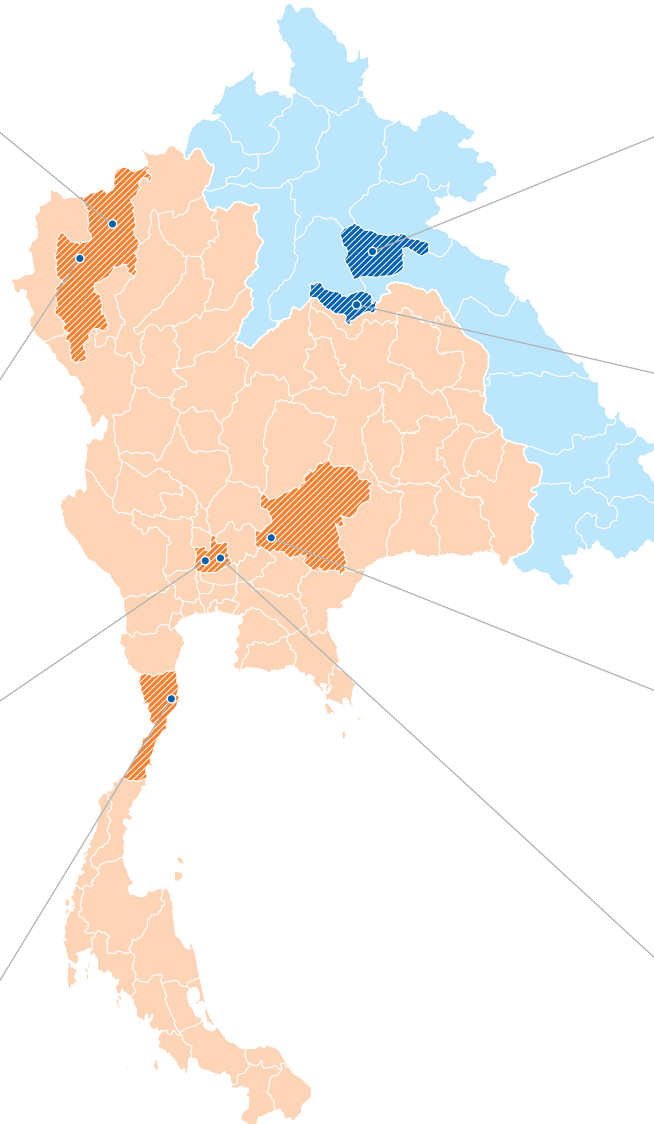
334
teachers

Providing support for renewable energy education to teachers in Teach for Thailand Project

Udomseelwitthaya School,
Ayutthaya



143
teachers



BIC's Khlong Jik Revitalization Project

BIC's Khlong Jik Revitalization Project was conducted in 2022 in Khlong Jik Community, located in the vicinity of Bangpa-in Cogeneration Power Plant (BIC). An initial needs survey revealed that the community was faced with the problem of polluted water in Khlong Jik canal, which prevented them from making use of the water. In addition, the living environment was not optimal due to a lack of a water treatment system for when the water gate was closed. In response, CKPower initiated the project, which sustainably catered to the local way of life through the Competency – Co-creation – Cooperation – Connection strategies and promoted community engagement. As part of this project, four solar-powered water turbines were developed and installed in the canal to improve the water quality as well as to raise awareness of the significance of environmental conservation and the preservation of water quality in communities, for which CKPower was given excellent cooperation from local residents. After the installation, CKPower monitored and tested the water quality and found that the level of dissolved oxygen (DO) rose from < 3 mg per liter to ≥ 6 mg per liter. For 2023, CKPower is planning to monitor and scale up the project by expanding the water treatment radius in the canal.



CKPower has leveraged its engineering competency for power production from clean power to develop and install solar-powered water turbines in Khlong Jik to improve the water quality in Khlong Jik canal and environmental management in the canal in front of Wat Wiwek Wayupat.



CKPower has leveraged its engineering knowledge and expertise in clean power production to develop self-operated water turbines powered by solar cells.



Collaborated with various stakeholders including Khlong Jik Sub-district Municipality, Wat Wiwek Wayupat School, Wat Wiwek Wayupat community, and the Division of Public Health and Environment of Khlong Jik Sub-district Municipality to improve the quality of water in Khlong Jik canal.



CKPower's employees collaborated with local residents of Wat Wiwek Wayupat Community to improve the quality of water in Khlong Jik canal by formulating plans and taking necessary actions.



Target and Performance

	Solar-powered water turbines to improve the water quality in Khlong Jik canal.	Project targets	4 turbines	Outcomes	4 turbines
	Dissolved oxygen (DO), indicating improved water quality	Project targets	>4 mg/liter	Outcomes	>6 mg/liter
	Wat Wiwek Wayupat Community to have access to clean energy, benefit from the improved quality of water in the canal, and are educated about environmental conservation and water quality improvement	Project targets	70 local residents	Outcomes	91 local residents
	Wat Wiwek Wayupat Community can make use of the water in Khlong Jik canal	Project targets	>650 local residents	Outcomes	700 local residents
	Solar-powered water turbines	Project targets	1,200 watts	Outcomes	1,200 watts
	Receive training and development in engineering and innovation creation for the benefit of society	Project targets	32 personnel	Outcomes	32 personnel
	Greenhouse gas emissions reduction	Project targets	876 kgCO ₂ e/year	Outcomes	876 kgCO ₂ e/year



The installation of solar-powered streetlights in Na Bong Village, Lao PDR

Solar-powered Street Lights for Na Bong Community, Lao PDR

In 2022, CKPower carried out the Solar-powered Street Lights Project in Na Bong Community, located in the vicinity of Nam Ngum Hydroelectric Power Plant (NN2) in Lao PDR. A needs survey conducted among local people revealed the necessity of street lights along the main road of the community to ensure safe travels at night and prevent accidents and potential crime. To address these concerns, CKPower implemented its “Competency-Co-creation-Cooperation-Connection” strategies and leveraged its clean power engineering capabilities in collaboration with Na Bong Community Committee and residents to design and install solar-powered lamp posts along the main road. The project aimed to provide the community with access to clean solar power and to eliminate accidents and crime. CKPower also collaborated with the community to monitor the effectiveness of the project and ensure the functionality of the solar-powered street lights for one year. Additionally, road accidents at night were monitored to ensure the project’s targets were achieved.

SDGs



Target and Performance



Project targets

solar-powered lampposts to be installed along a 1.5-km stretch of the main road.

Outcomes

33
lampposts

33
lampposts



Project targets

hazard and motor accident to be reported at night after installation.

Outcomes

0
accident

0
accident



Project targets

have access to clean solar power.

Outcomes

6
villages

6
villages



Project targets

The solar-powered lampposts produce

Outcomes

9,900
watts

9,900
watts



Project targets

undergo development in engineering and innovation creation for society.

Outcomes

7
personnel undergo development

7
personnel undergo development



Project targets

greenhouse gas emissions are to be reduced as a result of the solar-powered lampposts.

Outcomes

21,677
kgCO₂e/year

21,677
kgCO₂e/year

Hinghoi Project VDO

[CLICK](#)



Hinghoi Project

CKPower is committed to utilizing the capacity, knowledge, and expertise of its personnel on clean energy-based electricity generation engineering to create value for communities and society through the Hinghoi Project. Launched in 2015, the project aims to promote the quality of life and provide access to clean energy and essential utilities for children and communities, with a focus on addressing a lack of access to electricity through solar power systems and solar-powered water turbines for power generation. The Company has also built school buildings, libraries, and canteens, and provided education on energy saving and the proper use of electrical appliances that use renewable energy in neighborhoods around its power plants and remote areas in Thailand and Lao PDR.

In 2022, the seventh year of the Hinghoi Project, CKPower conducted a project at Lion Mahajak 9 Border Patrol Police School and Ban Pa Khao Lam Community in Mae Taeng District, Chiang Mai. The project began with surveys of the sites and the opinions, concerns, and needs of the communities, eventually resulting in a collaboration



Provision of education on renewable energy to students in the project



The installation of streetlights in Pa Khao Lam Village

Education and promotion of energy-saving behaviors

between the company, employees, communities, schools, and network partners to address the lack of street lights in Ban Pa Khao Lam Village for safe travels at night, which could lead to road accidents and hazards. The initiatives taken include the following:

Construction: Street lights were installed at six locations on the bridge spanning Mae Taeng River, covering a distance of 90 meters and benefiting one village and one school. The street lights were powered by 900 watts of clean energy, equivalent to 1,971 kgCO₂e/year of greenhouse gases reduced per year.

Education: Teachers and students at Lion Mahajak 9 Border Patrol Police School were educated on energy saving, which is key to energy consumption reduction and proper use of electrical appliances powered by renewable energy.

Knowledge sharing: Knowledge on renewable energy was shared in school to prepare for a transition from electrical power to solar energy.

Change: CKPower studied and analyzed the power usage behavior in school and adjusted it to suit solar power systems, as well as formulated plans to prepare the school personnel for the use of renewable energy.

CKPower also collaborated with the school and community to monitor the project's effectiveness, took care of the functionality of the solar-powered street lights for a year, and formulated plans for instructing the communities on the maintenance of the street lights to ensure they reap the full benefit as intended by the company.



Hinghoi 1

2016

Poo Kham Noi Village, Mae Pa Klang Village,
Sop Moei District, Mae Hong Son Province

Employee Volunteers	Children and Youth	Benefitted Communities
20 persons	50 persons	2 community
Public benefits and public properties	Learning center for renewable energy	Partnership and network
2 Public infrastructure	1 Learning center	1 Partnerships

Hinghoi 2

2017

Ban Mae Loe Border Patrol Police Education Center,
Mae Sariang District, Mae Hong Son Province

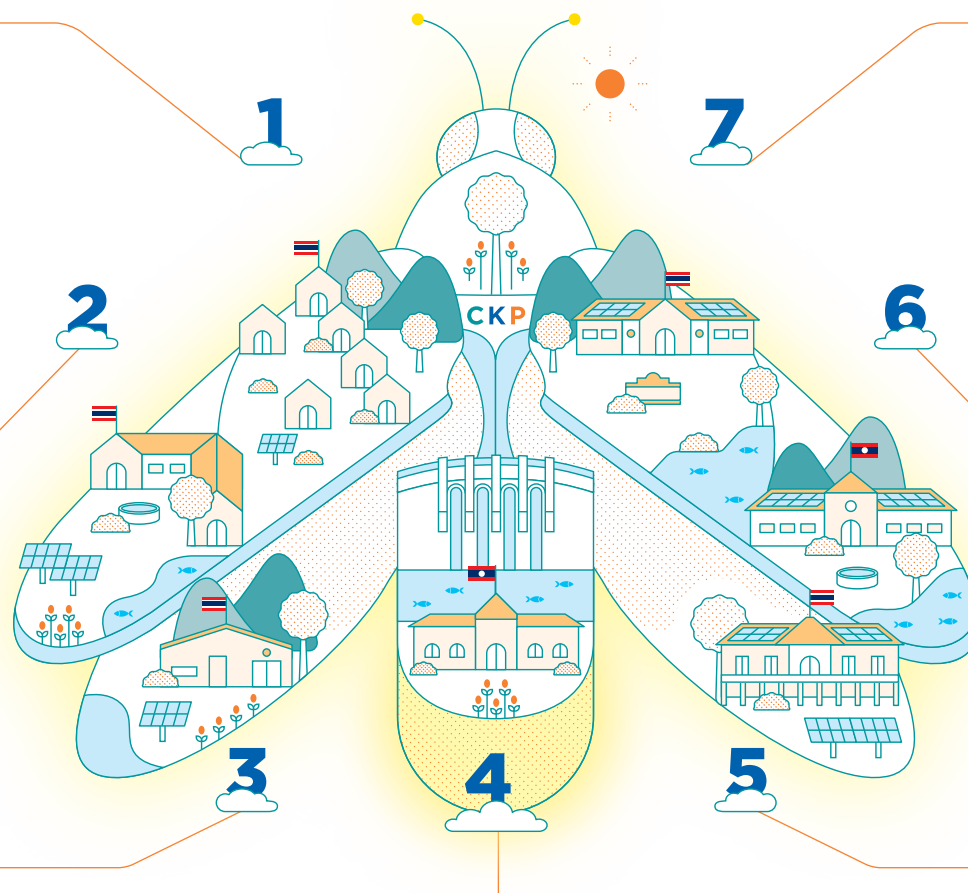
Employee Volunteers	Children and Youth	Benefitted Communities
128 persons	77 persons	1 community
Public benefits and public properties	Learning center for renewable energy	Partnership and network
5 Public infrastructure	1 Learning center	3 Partnerships

Hinghoi 3

2018

Ban Mae Mu Nai Border Patrol Police Education Center under
the sponsorship of CK Power Public Company Limited,
Mae Chaem District, Chiang Mai Province

Employee Volunteers	Children and Youth	Benefitted Communities
159 persons	77 persons	1 community
Public benefits and public properties	Learning center for renewable energy	Partnership and network
8 Public infrastructure	1 Learning center	4 Partnerships



2022

Hinghoi 7

Lion mahajak School 9 and Ban Pa Khaolam,
Mae Taeng District Chiang Mai Province

Employee Volunteers	Children and Youth	Benefitted Communities
106 persons	77 persons	1 community
Public benefits and public properties	Learning center for renewable energy	Partnership and network
1 Public infrastructure	1 Learning center	5 Partnerships

2021 - 2022

Hinghoi 6

Hin Hua Seua Kindergarten, in the vicinity of
the Nam Ngum 2 Hydroelectric Power Plant in
Xaisomboun Province, the Lao PDR

Employee Volunteers	Children and Youth	Benefitted Communities
207 persons	135 persons	1 community
Public benefits and public properties	Learning center for renewable energy	Partnership and network
9 Public infrastructure	2 Learning center	4 Partnerships

2020

Hinghoi 5

Wat Kudi Prasit School, Lam Sai Sub-district,
Ayutthaya Province and communities surrounding
Bangpa-in Cogeneration Power Plant

Employee Volunteers	Children and Youth	Benefitted Communities
165 persons	126 persons	1 community
Public benefits and public properties	Learning center for renewable energy	Partnership and network
9 Public infrastructure	2 Learning center	4 Partnerships

2019

Hinghoi 4

Ban Kang School in Luang Prabang District, Lao PDR and communities surrounding the Xayaburi Hydroelectric

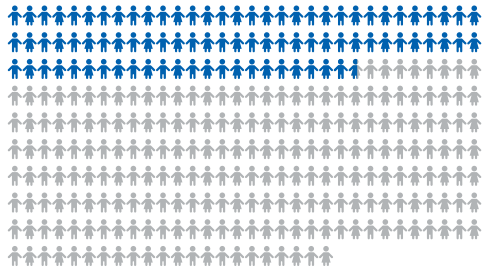
Employee Volunteers	Children and Youth	Benefitted Communities	Public benefits and public properties	Learning center for renewable energy	Partnership and network
100 persons	94 persons	2 community	3 Public infrastructure	1 Learning center	2 Partnerships

Outcomes of Hinghoi Project from 2016-2022



1,753 / 6,200

children benefitting from
outreach programs

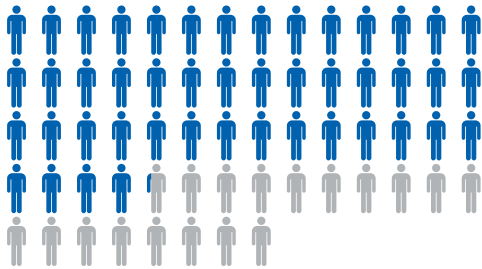


20 children =



928 / 1,279

cumulative employee
volunteers

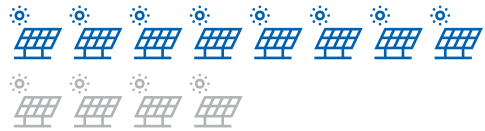


20 employees =



8 / 12

learning centers on
renewable energy



1 learning center =



20 / 26

partnering
networks

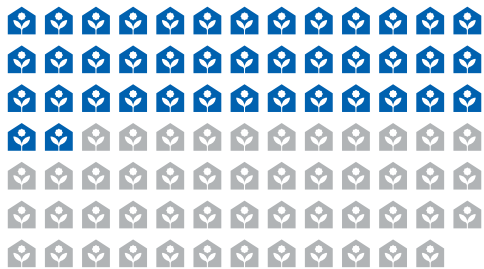


1 network =



41 / 90

public
infrastructures



1 public infrastructure =



9 / 13

communities
engaged

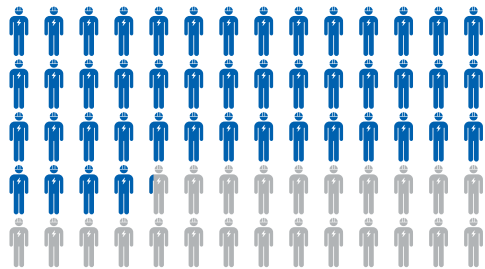


1 community =



928 / 1,279

personnel having received engineering
and social innovation development training

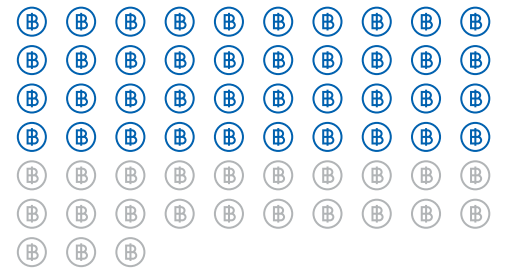


20 personnel =



4 / 6.3

external training cost savings
(Million Baht)



100,000 Baht =



RESPECT FOR HUMAN RIGHTS



SDGs



2022 Achievements



ZERO CASE

human rights violations across
the value chain



100%

of CKPower's businesses underwent
human rights due diligence, and
mitigation, rectification, and
remediation measures were
established



100%

of personnel at all levels received
human rights training and
communications

2022 targets



100%

of CKPower's businesses
undergo human rights due
diligence, and mitigation,
rectification, and remediation
measures are established.



100%

of personnel at all levels receive
human rights training and
communications.

Long-term targets



ZERO CASE

human rights violations across
the value chain



REVIEW

Conducting an annual review
of human rights risks related to
business operations across the
value chain



ASSESSMENT

Conducting an assessment of human
rights risks every 3 years



Impact on Business

CKPower prioritizes Respect for Human rights across the value chain and strives to prevent violations against the rights of its stakeholders and any vulnerable groups relevant to its business operations, such as indigenous children and foreign labor. By placing emphasis on human rights issues and continuously implementing a stringent due diligence process, the Company can earn acceptance and trust among its internal and external stakeholders and maintain its business stability.

Challenges and Opportunities

CKPower has identified human rights as a key factor for business advancement as it is a matter of concern for stakeholders and can significantly affect its operations both positively or negatively. The Company has also incorporated human rights issues into its Code of Conduct and announced its human rights policy to provide operational guidelines for all employees.



—
“We are committed to growing sustainably and respecting human rights throughout our value chain. We firmly believe that our human rights operations will provide respect, protection, scrutiny, and care for all stakeholders, in order for us to be a leading organization that considers human rights.”
—

Mr. Jessadin Suwanbubpa

Assistant Managing Director
Human Resources

Head of Ambition - Respect for Human Rights

Commitment

CKPower strives to becoming a sustainable and socially responsible organization that upholds the rights of humanity throughout its value chain. This commitment is reflected in our support and adherence to the Universal Declaration of Human Rights (UDHR), the United Nations Global Compact (UNGC), the United Nations Framework and Guiding Principles on Business and Human Rights (UNGPR), and the International Labor Organization (ILO)'s Declaration on Fundamental Principles and Rights at Work, as well as operates in accordance with the National Action Plan on Business and Human Right (NAP Implementation).

Operational Guidelines



1 Human Rights Policy

CKPower recognizes the significance of respecting human rights and has therefore established a human rights policy to prevent violations across its every activity. This policy takes into account the respect for human rights of at-risk/vulnerable groups, such as children, women, foreign labor, subcontracted labor, communities/local residents, customers/consumers, members of the LGBTQI+ community, people with disabilities, pregnant women, and the elderly, in compliance with international human rights practices across business

activities directly carried out by or related to the Company, in its services across the value chain, in the activities of its business partners, customers, suppliers and contractors, and in new investment projects.

In 2022, CKPower identified human rights issues relevant to its sustainable business strategies and developed a Human Rights Roadmap, which included measures for the period from 2022 to 2026 for use in developing and tracking human rights performance across the supply chain.

2 Human Rights Due Diligence

CKPower engaged a third party to carry out human rights due diligence across 100% of the business activities of all its affiliates.

As human rights are a major concern for CKPower, it promotes adherence to human rights principles in its engagement with all stakeholders, such as respecting the human rights of the employees, embracing the diversity of physical appearance and opinion, and undertaking non-discriminatory recruitment on the basis of race, national origin, religion, gender, color, language, ethnicity, socioeconomic status, or any other factors. CKPower also prohibits the use of forced and child labor, both within the Company itself and in the supply chain.

In 2022, CKPower communicated the human rights policy in meetings with the Sustainable Development Committee, new employee orientation, and training to raise awareness of and promote respect for human rights among 100% of the personnel at all levels. As for suppliers, CKPower incorporated human rights issues into the Supplier Code of Conduct as well as issued communications and conducted annual supplier

Human Rights Policy



Complaint and Whistleblowing Management and Human Rights Remedies Guideline



[CLICK](#)

[CLICK](#)



performance assessments and audits in order to ensure that human rights principles were upheld in their business operations and promote respect for human rights across the value chain.

3 Human Rights Risk Assessment

CKPower conducts human rights risk assessments at its significant locations of operation every three years as well as on its business partners. The risk assessment results enable the Company to ensure efficient compliance with human rights principles in at-risk sites of operation and to make preparations in anticipation of potential damage resulting from human rights trends. In addition, human rights issues relevant to its business operations across the value chain are reviewed annually to ensure the suitability, effectiveness, and currency of its mitigation, rectification, and remediation measures.

The risk assessment encompasses 14 human rights issues related to CKPower's stakeholders, from employees, contractors, and suppliers all the way to communities in the vicinity of its power plants and all companies vulnerable or prone to human rights violation. The risk assessment has revealed one high-risk issue, which is the health and safety of the employees, while other human rights risks are at low to medium levels. These risks can be managed by the Company's existing approach, with additional measures introduced to bolster prevention and closely monitor the risks.

CKPower has established measures to suitably prevent and minimize risks of human rights violation, which have been integrated into its human rights complaint handling and mitigation guidelines. The implementation of the measures is monitored and reported regularly to ensure alignment with the Company's target of achieving zero human rights violation across the value chain.

CKPower recognizes its obligation to address and resolve any violation that may occur in the future in order to assure

the affected party that suitable remedial measures, such as restitution, monetary or non-monetary compensation, and reparation, as well as relevant disciplinary action, will be taken and that such violation will not reoccur. In 2022, CKPower received no complaint or report on any form of violation of human rights laws or principles, and as such no remedial action was carried out.

4 Human Rights Complaint Handling and Response

CKPower provides stakeholders with various channels for complaints and suggestions that are reliable and independent from external parties, namely:

Channels for Human Rights Complaints



Website:

Whistleblower channel on
www.ckpower.co.th



E-mail :

Compliance@ckpower.co.th,
Directors@ckpower.co.th,
lr@ckpower.co.th



A sealed letter addressed to:

CK Power Public Company Limited
No. 587 Viriyathavorn Building,
19th Floor, Sutthisan Winitchai Road,
Ratchadaphisek Sub-district,
Din Daeng District, Bangkok 10400

Promotion of Human Rights Responsibilities and Practices in 2022

Development and Implementation of the Human Rights Roadmap in 2022

CKPower has developed a human right roadmap for a five-year period from 2022 to 2026 to establish clear targets and directions for human rights promotion and protection and to enable the

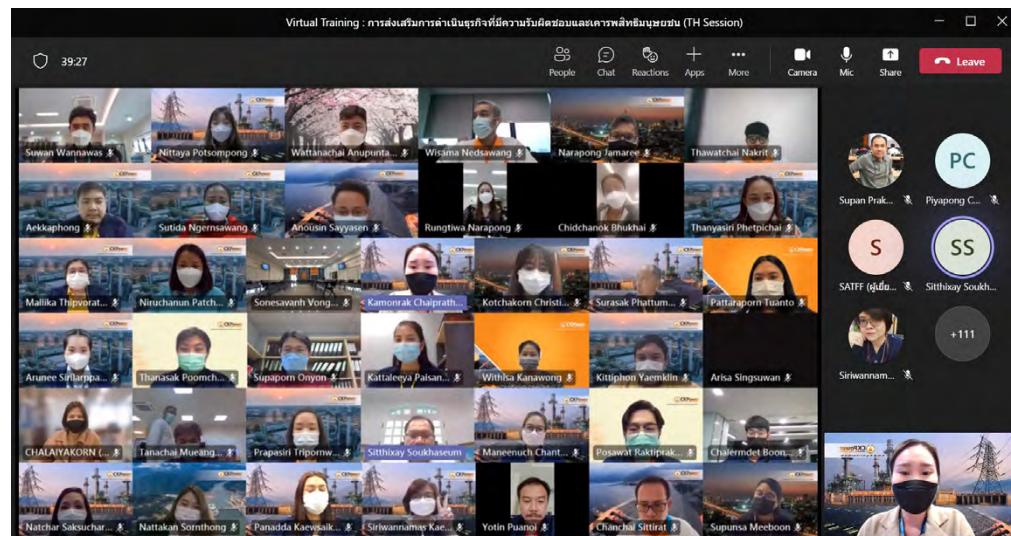
assessment and reduction of human rights risks in the future. CKPower's key activities in 2022 are as follows:

- To create value and further expand its projects, CKPower fostered human rights awareness and increased engagement with all stakeholders across the value chain on the basis of respect for human rights.
 - **Engagement with internal stakeholders:** Internal stakeholders refer to employees. CKPower organized human rights training for 100% of its personnel, focusing on respecting fundamental rights and embracing diversity in the organization to ensure harmony in the workplace amidst diversity.
 - **Engagement with external stakeholders:**
 - **Suppliers:** CKPower elevated its human rights risk management process to reduce the risk of violation and improve the quality of life in the workplace with respect to labor, health, safety, and well-being. In addition, the Company educated the suppliers to foster awareness and understanding and conducted random site visits, during which no human rights violation was found.
 - **Communities:** CKPower fostered engagement and conducted projects on the basis of respect for human rights to foster job security and elevate the quality of life for communities around its power plant and in society at large.
 - **Customers:** CKPower delivered electricity to all customers with reliability and operated with a commitment to safety, which is a fundamental right, in order to enhance the quality of life in the Company and its subsidiaries.
- CKPower joined the progress assessment of the United Nations Global Compact (UNGC).
- CKPower investigated cases of human rights violations and revised its impact mitigation measures.
- CKPower revised its human rights complaint handling and response process.

Human rights risk assessment
and monitoring



[CLICK](#)



Conducting an online human rights awareness program for employees

Human Rights Training and Communication

To promote responsible business operations and respect for human rights, CKPower has communicated human rights principles through various channels, such as virtual meetings through Microsoft Team and mobile applications and training for 100% of its personnel at all levels. In 2022, as a result of these initiatives, CKPower's employees were aware of its human rights policy, international human rights practices, and the connection between human rights issues and their roles and responsibilities, which in turn bolstered their understanding of the impact of human rights violation. In addition, thanks to the human rights training, no complaint related to human rights violations was reported to CKPower.

Human Rights Assessment and Awareness Building for Suppliers

To reiterate its commitment to the prevention of human rights violation, CKPower strives to foster human rights understanding and awareness among its suppliers. To this end, it has incorporated human rights issues into the vendor risk assessment and conducts random on-site audits annually. In 2022, CKPower required 130 high-risk Tier 1 suppliers to conduct vendor self-assessments and provided training to 28 suppliers, accounting for 100% and 21.5% of the total number of vendors in each category, respectively. None of the vendors were found to be at risk of human right violations.



Promoting human rights awareness in the Khlong Jik Community

Human Rights Awareness Building in Communities

CKPower raises human rights awareness in communities surrounding its power plants and gives them equal opportunities to express their opinions and take part in developing the quality of life in their locality in collaboration with the Company. In addition, CKPower reviews human rights risks and impacts on a yearly basis. In 2022, CKPower carried out such initiatives in 100% of the communities around its power plants, and none was found to be at risk of human right violations.



Performance

2022 targets



ZERO CASE

human rights
violation across
the value chain



100%

of CKPower's businesses
undergo human rights
due diligence, and
mitigation, rectification,
and remediation measures
are established



100%

of personnel at all
levels receive human
rights training and
communications

Performance



ZERO CASE

human rights
violation across
the value chain



100%

of CKPower's businesses
undergo human rights
due diligence, and
mitigation, rectification,
and remediation measures
were established



DEVELOPED

CKPower developed the
Human Rights Roadmap



100%

of personnel at all
levels received human
rights training and
communications

Long-term targets



ZERO CASE

Continuous absence
of human rights
violation across the
value chain



REVIEW

Annual review of relevant
human right risk issues
across the value chain



ACCESS

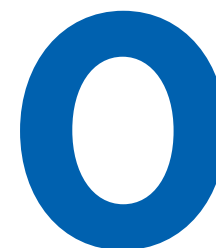
Human rights risk
assessment every
three years

Human rights complaints across the value chain

Number of complaints



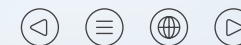
2019 - 2022



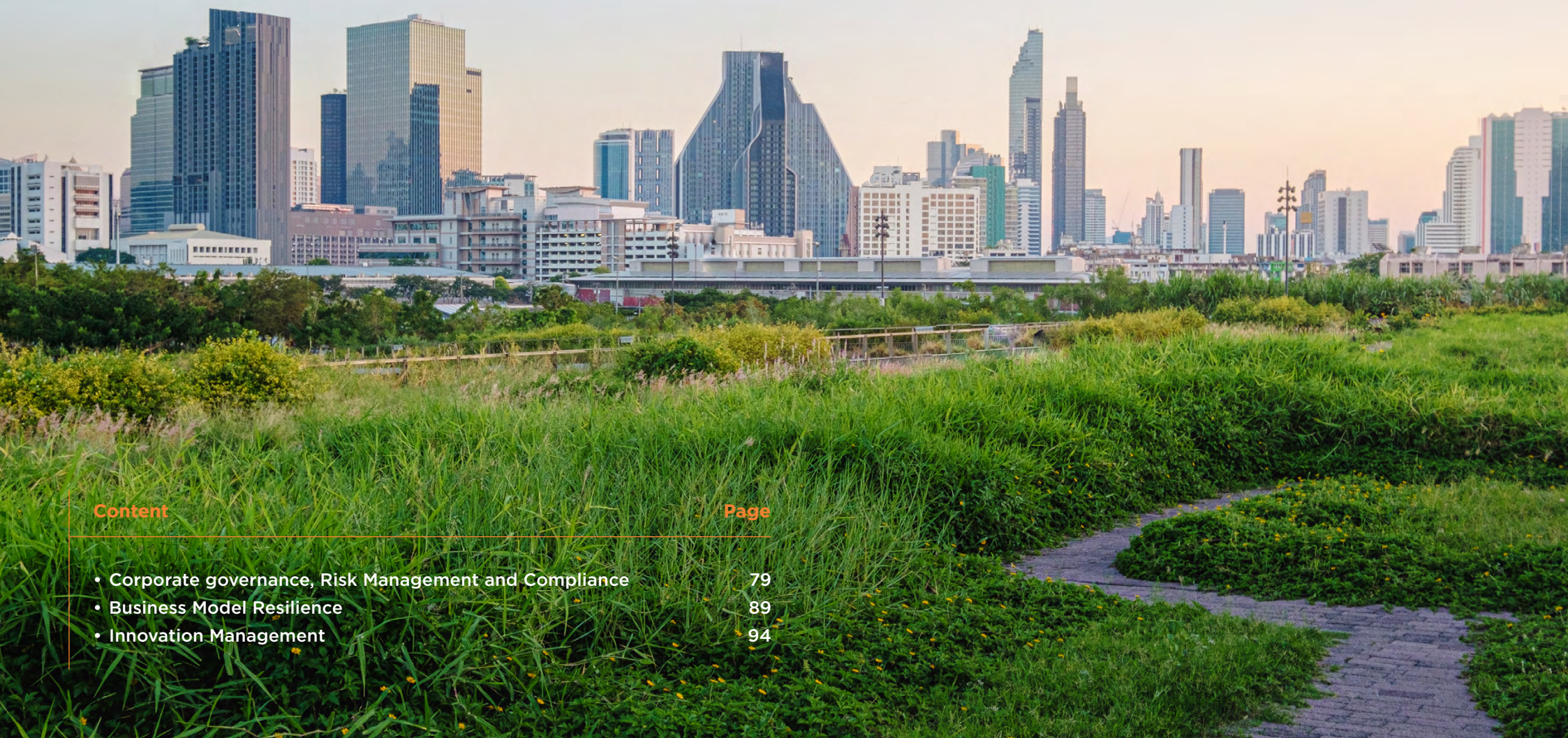
case

Human rights training and education

	2021	2022
Executives	100%	100%
Employees	100%	100%
High-risk Tier 1 suppliers who conducted vendor self-assessment	-	100%
High-risk Tier 1 suppliers who underwent human rights training	-	21.5%
Communities	-	100%



PARTNERSHIP FOR LIFE



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CORPORATE GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE



SDGs



2022 Achievements

Performance



100%

of employees and executives receive training on basic governance, policies, the business code conduct, the anti-corruption policy, and the Company's core values



ZERO CASE

internal reports of corruption



ZERO CASE

external reports of corruption

2022 Targets



100%

of employees and executives receive training on basic governance, policies, the business code conduct, the anti-corruption policy, and the Company's core values



ZERO CASE

internal report of corruption



ZERO CASE

internal report of corruption

Long-term Goals



100%

Fostering a risk management culture throughout the Company and 100% of its affiliates



ZERO CASE

internal report of corruption



ZERO CASE

internal report of corruption



Impact on Business

CKPower conducts business with emphasis on good corporate governance, which is fundamental to sustainable business growth. This fosters the organization's ability to adapt and compete in the midst of changes in the business landscape, society, and the environment. The aim is to enable the company to grow and create long-term value in response to the expectations of all stakeholders and to instill confidence in investors and all groups that have a vested interest in the company's business operations. All members throughout the value chain are committed to supporting the company's operations.

Challenges and Opportunities

Amid rapid changes and increasing competition in business, corporate governance and circumspect risk management, especially of emerging risks, that encompasses key issues is of the utmost importance in enhancing the competitiveness of various businesses. CKPower, thus, prioritizes and conducts business

strictly under the corporate governance policy and business code of conduct. This includes efforts to promote good corporate governance practices and risk management processes throughout the value chain.

Commitment

CKPower conducts business with an emphasis on good corporate governance in accordance with its corporate governance policy and related principles and the business code of conduct, on compliance with laws and regulations, and on the management of crises and risks, including emerging risks which may impact its business operations. The company strives to enhance the transparency and integrity of its business operations, and to elevate its standards for good corporate governance, which will help create business opportunities, increase competitiveness, and fulfill the expectations of all stakeholders in a sustainable manner.

Operational Guidelines

1. Corporate Governance and Anti-Corruption Efforts

Corporate Governance

CKPower's Board of Directors, executives, and employees at all levels place importance on compliance with corporate governance principles. To this end, the Company has established a corporate governance policy and a business code of conduct which are aligned with corporate governance principles as well as the Securities and Exchange Commission's (SEC) and the Stock Exchange of Thailand's (SET) Corporate Governance Code for Listed Companies to ensure that there are clear guidelines, transparency, and accountability. The corporate governance policy has been reviewed by the Board of Directors.

Corporate Governance
Policy



[CLICK](#)

Corporate Governance Policy Structure





“We would like every employee to be aware of the importance of adhering to the company’s good corporate governance practices, together with their responsibility to society and the environment. As representatives of the company, they should communicate and educate their colleagues about these values within the organization. This will instill confidence that the company is committed to fulfilling its mission to create long-term, stable, and ethical returns for shareholders, while continuously placing a strong emphasis on the environment, communities, and all stakeholders in all sectors.”

Ms. Jiraporn Putiparsoed

Senior Director – Compliance Division
Sustainability Supporting and
Disclosure Working Team - Risk Management

**Structure of the Board of
Directors**

[CLICK](#)



**Code of
Business Conduct**

[CLICK](#)



**Information
on the Board of Directors**

[CLICK](#)



**Anti-Corruption
Guidelines**

[CLICK](#)



Board Composition

Number of Board of Directors and Independence



**Executive
Director**

1

Person



**Non-Executive
Directors**

10

Persons



**Independent
Directors**

4

Persons



Female

1

Person



Male

10

Persons



Total

11

Persons

Board Composition

In 2022, the Board of Directors comprised eleven directors, ten of whom were non-executive directors and one of whom was an executive director. The Board of Directors also consisted of four independent directors, the definition and qualifications of whom were as specified in the Notification of the Stock Exchange of Thailand (SET) and the Office of the Securities and Exchange Commission (SEC) Re: the Qualifications of Independent Directors. All directors possessed the full set of qualifications stipulated in and

are free of the characteristics prohibited by the relevant laws and regulations. They also had a variety of knowledge, expertise, skills, and experience in line with the Company’s business strategies. In the past year, the Company convened a total of 7 Board of Directors meetings to discuss key operational issues. Details regarding meeting attendance and the governance issues under discussion can be found in the 56-1 One Report for the year 2022.






Nomination of the Board of Directors

The Company has placed the nomination of directors under the responsibility of the Nomination and Remuneration Committee, which is charged with the responsibility of nominating suitable candidates with a diverse range of qualifications for directorship, such as professional skills and specialization, without discrimination based on age, gender, nationality, religion, cultural background, or other differences as the Company places importance on diversity and non-discrimination. In nominating

directors, the Committee considers their knowledge and expertise based on education, training records, practical experience, and specializations based on the Board Skills Matrix to ensure that the Board consists of directors with a diverse range of skills and experience that are in alignment with corporate strategies and support CKPower's sustainable business growth.

Board Skill Matrix

 Name	 Management, Strategy, and Organization	 Accounting and Finance	 Engineering	 Economics	 Energy and Utilities	 Business Laws and Regulations	 Risk and Crisis Management	 Sustainable Development	 Corporate Social Responsibility	 Corporate Governance
Dr. Thanong Bidaya	✓	✓	-	✓	✓	-	✓	✓	✓	✓
Mr. Plew Trivisvavet	✓	-	✓	-	✓	✓	✓	✓	✓	✓
Dr. Jon Wongswan	✓	✓	-	✓	-	-	✓	✓	✓	✓
Dr. Patarut Dardarananda	✓	✓	✓	-	-	✓	✓	✓	✓	✓
Mr. Chaiwat Utaiwan	✓	✓	✓	-	-	-	✓	✓	✓	✓
Mr. David Van Dau	✓	-	-	✓	✓	-	✓	✓	✓	✓
Dr. Supamas Trivisvavet	✓	-	-	-	✓	✓	✓	✓	✓	✓
Mr. Vorapote Uchoepaiboonvong	✓	✓	-	-	✓	✓	✓	✓	✓	✓
Dr. Pavich Tongroach	✓	-	-	-	✓	-	✓	✓	✓	✓
Mr.Sittidej Trivisvavet	✓	-	-	-	✓	-	✓	✓	✓	✓
Mr. Thanawat Trivisvavet	✓	-	-	✓	✓	✓	✓	✓	✓	✓

Remark: Taking into account the directors' specific knowledge and expertise based on their (i) educational background, (ii) training background, (iii) positions in subcommittees and positions in the Company or other companies, (iv) working experience.

Board Performance Assessment

The Company assesses the performance of the Board of Directors annually so that the Board may participate in assessing their own performance and the problems and obstacles faced in the year prior. Three forms of assessment are used: group assessment, individual assessment (self-assessment and cross-assessment), and sub-committee assessment (group), in accordance with the corporate governance guidelines for listed companies. The Managing Director's Office is charged with sending the aforementioned assessment forms to each director for assessment. In 2022, the results of the performance assessment of the Board of Directors, sub-committees, and individual directors out of a full score of four for each category are as follows:

Board Performance Assessment Results

2022 Score



Form 1:
Board of Directors

3.85
Score



Form 2:
Subcommittees

3.92
Score



Form 3:
Individual Assessment

3.83
Score

Business Code of Conduct

In addition to corporate governance principles, CKPower also adheres to a business code of conduct that is transparent, accountable, and mindful of its responsibility to all stakeholders. Directors, executives, and employees at all levels are required to strictly adhere to and perform their duties in accordance with the corporate governance policy and related guidelines and the business code of conduct. CKPower has also communicated and disseminated policies, codes of conduct, and various practices related to



corporate governance through its website, mobile application, and intranet to provide easy access to all directors, executives, and employees for further implementation. In 2022, CKPower provided training on the matters aforementioned to 100% of new employees.

Anti-Corruption

CKPower has set down anti-corruption guidelines in writing to provide clear guidance for business operations, which the personnel of the company and its affiliates are required to strictly follow. The Company has also announced a no-gift policy as well as communicated the principles of business ethics and anti-corruption to all groups of stakeholders in a concrete manner through a variety of communication channels, such as its website, internal public relations screens, digital signage, and intranet. In addition, employees are encouraged to attend anti-corruption training to foster knowledge and understanding on the guidelines for fighting and preventing corruption in the hopes that employees can implement the knowledge in their operations as well as further disseminate it to other employees in the Company. In 2022, CKPower's employees participated in the Anti-Corruption the Practical Guide (ACPG) training course with the Thai Institute of Directors Association.

Anti-Corruption Guidelines for CKPower and its Affiliates

1



Establishment of an
external corruption
prevention
policy.

2



Establishment
of a corruption
investigation
unit

3



Corruption Risk
Assessment

4



Use of insider
information,
stakeholder
accountability,
and the roles and
responsibilities
of directors and
executives of the
Company and its
subsidiaries.

5



Establishment of
a whistleblowing
channel and
whistleblower
protection measures.

Handling of Complaints and Corruption Cases



1 Whistleblowing Channel:

The Company provides a whistleblower channel for reporting tips or complaints to its executives and the Board of Directors.

2 Action:

The executives and the Board of Directors appoint the Audit Committee as a working team to gather details, investigate incidents, determine the appropriate methods and measures for dealing with each matter, and establish guidelines to prevent recurrence. The Audit Committee is also responsible for monitoring the results and progress periodically.

3 Reporting:

The company secretary, executives, or members of the Audit Committee report the results to the Board of Directors for their acknowledgment and further communication with stakeholders.

the code of conduct, malpractice, and behaviors that may implicate individuals in CKPower in acts of corruption, whistleblowers are guaranteed protection and fair treatment. Complaints can be made through the following channels:

Through the Company's Website



Directly on the Investor Relations page
<https://www.ckpower.co.th/th/ir>

By E-mail



- To the Company Secretary compliance@ckpower.co.th
- To the Audit Committee and Board of Directors director@ckpower.co.th
- Or to the Investor Relations Department lr@ckpower.co.th

A sealed letter addressed to



CK Power Public Company Limited
No. 587 Viriyathavorn Building
Sutthisan Winitchai Road,
Ratchadaphisek Subdistrict,
Dindaeng District, Bangkok 10400

In 2022, the Company received zero complaints of violation of its business code of conduct through the whistleblowing channel.

2. Risk Management

CKPower adheres to enterprise risk management (ERM) guidelines based on the international COSO-ERM 2017 Framework by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), which is a framework for managing and keeping enterprise risk within the risk appetite. The Company has also established a Risk Management Working Group for itself and

its affiliates comprising executives from all lines of work, such as business planning, engineering, operations and maintenance, and power plant managers. The Working Group is tasked with preparing annual risk mitigation plans to ensure appropriate and timely response to various changes that may affect business operations. The Corporate Governance, Risk Management, and Sustainable Development Committee convenes at least four meetings a year to consider issues regarding corporate governance, risk management, and sustainable development. CKPower assesses the following four risk categories:



Whistleblowing Channel

The Company provides whistleblowing channels to receive suggestions and feedback from various stakeholders in order to improve the efficiency of procedures with the credibility and independence of third parties. When reporting non-compliance with

Risk Management
Policy

[CLICK](#)



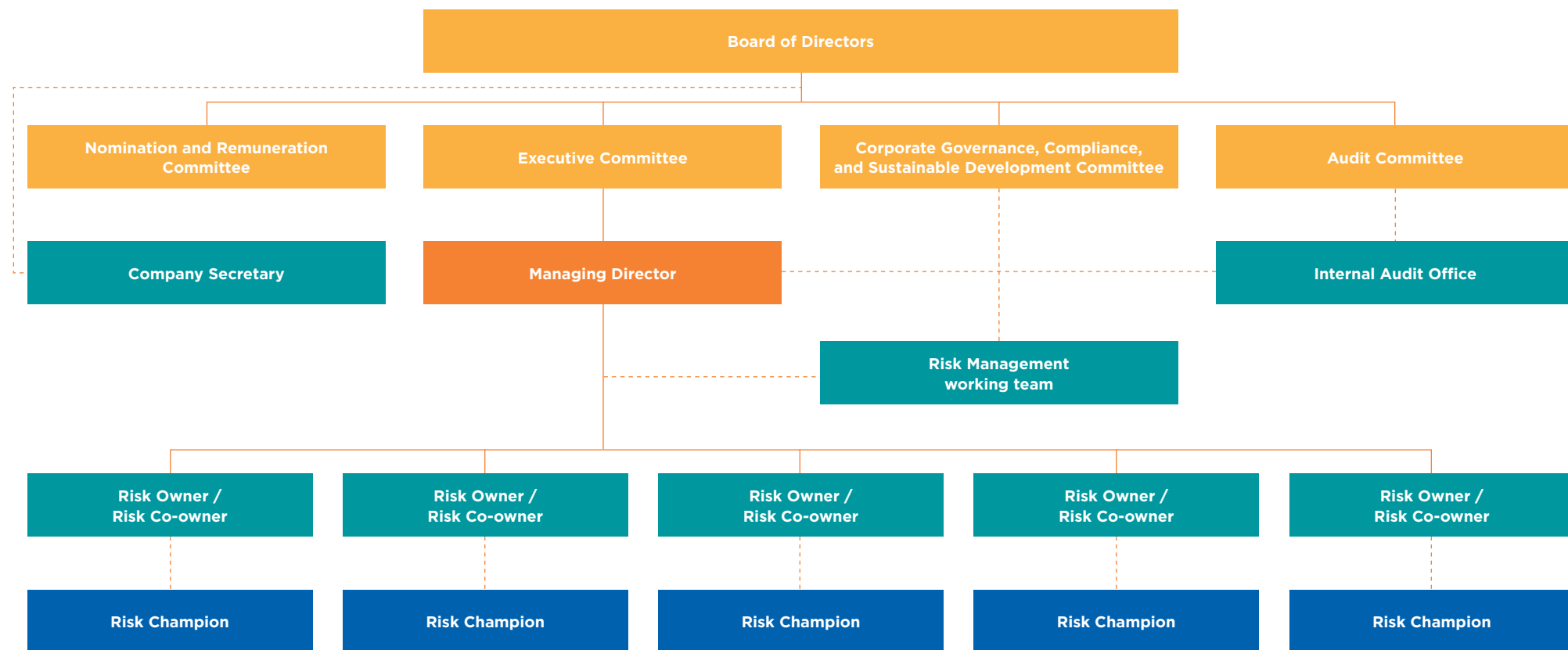


Risk Management Structure

CKPower's Board of Directors has charged the Corporate Governance, Risk Management, and Sustainable Development Committee with the duties of considering and approving the risk management activities of the Company and its affiliates as well as establishing policies, giving advice, and verifying risk management effectiveness. In addition, CKPower has tasked the Internal Audit Department with monitoring and reviewing its risk management process to provide an additional layer of oversight independent from the Risk Management Working Group to further increase confidence.

Governance Structure

———— Reporting line - - - - - Coordinating and Exchanging Information Line





Risk Management Process

To manage potential risks in its business operations, CKPower utilizes a risk management process comprising the following six steps:



In 2022, the majority of risks were deemed to be at a moderate level, for which CKPower crafted a comprehensive mitigation plan. However, there were three high-level risks: damage to the Company's reputation, shortage of key personnel, and the management of power plant machinery and equipment that affect power generation stability. The Company mitigated the risk of reputational damage due to matters related to the communities surrounding its power plants both in the short and long term through CSR strategies, such as by regularly organizing activities with communities surrounding power plants and clearly designating parties responsible for operations. For the risk of shortage of key personnel, CKPower put in place a succession plan for key positions, a compensation scheme suitable for the business, and a personnel development plan. Finally, CKPower mitigated the risk of power plant machinery and equipment malfunction which might affect the reliability and stability of its power generation by establishing a machinery and equipment procurement plan, managing spare parts and equipment, and performing root cause analysis for maintenance planning.

Management of Emerging Risks

CKPower has deemed the evolution of energy technology and cybersecurity to be two emerging risks that may affect the competitiveness and sustainability of its business operations. As such, CKPower has analyzed and developed approaches to mitigating these risks in order to maintain the stability and continuity of operations on the basis of sustainability, as detailed below.

Evolution of Energy Technology

Emerging Risk Factors

The downward trend in the consumption of nonrenewable energy sources, such as fossil fuels, gas, petroleum, coal and nuclear power, etc., and rising demand for alternative clean energy which is produced in an environmentally friendly way and can be infinitely circulated, such as solar energy, hydropower, wind energy, and geothermal energy, as well as electric vehicles powered by renewable energy sources and hydrogen, has mobilized energy innovation in Thailand, especially in renewable energy, in the past year. This has caused a reverberating impact on the electricity

generation industry and triggered changes in consumer behavior and future energy sources.

Potential Impact on Business

Nowadays, technology tends to change rapidly in response to the energy consumption behavior of consumers in the public and industrial sectors. Moreover, power generation methods are also evolving quickly. CKPower sees a need to establish guidelines for managing energy technology risks to mitigate disruption to the Company's business from new innovations and limitations to its competitiveness if the Company is unable to adapt to these technological changes.

To this end, CKPower is accelerating its efforts to promote innovation and modern technology, both in adapting its operations and in increasing the efficiency of its personnel to support new innovations.

CKPower is in the process of researching and developing renewable energy projects in various forms in conjunction with business partners. If the initiative succeeds, it will enable the Company to achieve its target of expanding the business by 4,800 megawatts within the year 2024.

Management Approach/Opportunities

- CKPower has studied the rules, regulations, and laws that may be relevant in Thailand and in ASEAN to seek new opportunities and mitigate various restrictions that the Company may encounter in its business operations.
- CKPower prioritizes business model resilience as one of the key issues in sustainable business operations and has formulated strategies, guidelines, and operational frameworks for a period of 5 years (2022-2026) in order to achieve concrete results. CKPower has also appointed a unit responsible for mobilizing and monitoring the implementation of the strategies, guidelines, and frameworks.



- CKPower has researched and assessed the viability of conducting business in renewable energy and has made preparations by establishing an exploration team consisting of executives and employees from the engineering department to study and research new ways to develop the power generation business.
- CKPower is researching solar power plants and solar and battery energy storage system (BESS) as a case study for future investments.
- CKPower has signed a memorandum of cooperation with suppliers to study green hydrogen production technology and green ammonia. A memorandum of cooperation was also signed with suppliers to study the use of hydrogen mixed with liquefied natural gas (LNG) as fuel for power generation at Bang Pa-in Cogeneration Power Plant.

Potential Impact

CKPower is prepared for all forms of threats that may affect the loss of important company data. As CKPower stores sensitive data in its server, such as data related to the management of its power plants, the stability of which is vital for energy security, and sensitive financial information, malicious agents may be motivated to attack its various data storage systems and networks, resulting in financial loss to the Company from theft or the cost of recovering stolen data. In 2022, CKPower had no case of information leakage. Additionally, in the event that the personal information of employees, suppliers, or customers is leaked or used for transactions, there would be wide-ranging impact on CKPower's stakeholders. These losses would result in incalculable damage to its reputation, and it would take a long time to restore the confidence of stakeholders.

Management Approach/Opportunities

- CKPower manages information technology risks in accordance with its Enterprise Risk Management Policy. IT system security is stipulated as part of business continuity management to ensure that the IT system is always ready for use.
- CKPower has established the ISO27001 IT system security standards to systematically provide guidelines for and promote understanding of the risks and weak points of data protection. This is part of the effort to strengthen data security systems, reduce risks, and protect data from theft. CKPower has also instituted the management of incidents that may affect the security of the IT system by establishing procedures and administrative processes,

appointing responsible parties, and requiring prompt and up-to-date situation reporting by the person or agency responsible for receiving the notification of the incident to ensure that incidents and vulnerabilities related to the security of IT systems are properly and effectively handled in a timely manner.

- CKPower has assigned personnel with the duties and responsibilities of properly securing its key IT assets. It has also organized training for employees, disseminated educational content about security awareness through mobile applications, and communicated various information via e-mail to increase knowledge of technology and strengthen awareness of IT security among all employees in CKPower as well as to familiarize them with the evolution and patterns of cyberattacks.
- CKPower regularly evaluates the efficiency of its IT security system and power plant operation security system.

Cybersecurity

Emerging Risks

Cybersecurity is the application of technology, tools, processes, and practices that are designed to prevent and respond to potential attacks on information technology equipment, network, equipment, infrastructure, system, or program that may be damaged by unauthorized access by a third party as well as the maintenance of data integrity and confidentiality. CKPower foresees this risk, as currently, the targets and formats of cyberattacks are becoming more and more varied. Thus, it has the potential to cause significant impact on any organizations affected.

Fostering a Corporate Risk Culture

CKPower has fostered an organization-wide risk culture by organizing various activities, training, and programs as well as providing communication channels on risk management and business continuity management for employees at all levels. This is part of the effort to strengthen the corporate risk culture and raise awareness of and encourage participation in risk management among employees at all levels from management to operations. For example, CKPower has organized training on strategic risk management for all executives and training for enterprise risk management for the Risk Management Working Group of every power plant.



External Personal
Data Protection
Policy

[CLICK](#)



Information
Technology
Security
Guideline

[CLICK](#)



Key Performance Indicators



Complaints received about
the breach of customers'
personal data

0

case



Leakage or loss of
customer data

0

case



Leakage, theft,
or loss of customers'
personal data

0

case

3. Customer Data Protection

Protecting customer data is of the utmost importance to the business. To this end, CKPower has established prioritized access to information to prevent customer data from being leaked to third parties and mandated in its business code of conduct that all executives and employees must refrain from unethical behavior and from disclosing or exploiting confidential information gained from performing duties for their own benefit. In addition, CKPower has established a policy to protect third-party personal information and guidelines for maintaining information security which are in line with the guidelines for listed companies announced by SET. CKPower promotes the use of IT systems equipped with processes for monitoring and managing risks, cybersecurity systems, and measures to maintain the security of the IT system that encompass IT risk management and implementation.

CKPower places great importance on information access, confidentiality, use of insider information, and data and IT systems security and has, thus, incorporated policies and guidelines into its third-party personal data protection policy to provide cybersecurity for whistleblowers and customers. In the past year, there was no report of information leakage or misuse of customer information.

Performance

In 2022, CKPower provided training and issued communications about corporate governance, business ethics, and anti-corruption to ensure that a strong risk culture was fostered at all levels across the Company, from management to operations.

Personnel Who Received Training and Communication	Communication Channel/ Training Curriculum and Objective	Percentage of Stakeholders Who Received Communication	Percentage of Stakeholders Who Received Training
Executives	Strategic Risk Management	100	100
Employees	Enterprise Risk Management	100	100

Remark: Training was provided for the managing directors and executives of affiliated companies through the Strategic Risk Management Program and for the risk management working groups of affiliated companies in the Enterprise Risk Management Program.

In 2022, CKPower found 0 violations of its Business Code of Conduct.

BUSINESS MODEL RESILIENCE



SDGs



2022 Achievement



DEVELOPED

Business model resilience
strategies

Short-term targets



DEVELOP

Establishing business model
resilience strategies by 2022



DEVELOP

Establishing action plans for
digital technology and innovation
application by 2023

Long-term targets



OPERATE

at least one new business in
Southeast Asia by 2024



EXPLORE NEW CUSTOMERS

Gaining at least three new groups of
customers by 2027



COMPLETE

the implementation of the business
resilience action plan by 2027



Impact on Business

In planning business advancement, in addition to the reliability and availability of the operations, it is vital for CKPower to foster business resilience in order to diversify risks, create a competitive advantage, as well as ensure its ability to navigate a crisis with minimum disruption, which will in turn enhance stakeholder confidence. In addition, CKPower must seek new businesses and opportunities to expand into new markets as well as integrate more cutting-edge technology into its business operation to enhance its resilience and adaptability. Business model resilience thus aligns with a sustainable business management framework and will play a crucial role in steering the operations in the right direction, earning the Company acceptance, bolstering its competitiveness, and enhancing the confidence of customers and stakeholders, all of which are vital drivers of business operations and reflect the Company's efficiency in handling various risks and potential scenarios.

Challenges and Opportunities

Economic volatility, technological advances, changes in relevant laws and regulations, and global crises present great challenges for business operations. Therefore, it is essential for CKPower to have an optimal integrated management system to drive its business across the supply chain. In addition, the company must undertake resource management as well as maximize resource and production efficiency without adversely impacting the return to which stakeholders are entitled while also ensuring the availability of the production system to minimize impact on the business. In addition, it is essential for CKPower to continuously improve its power production excellence and bolster its resilience and flexibility to accommodate new business opportunities in order to expand its markets and collaborations within the power generation and renewable energy service businesses and meet stakeholder expectations.



—

“CKPower places great importance on operating the business with flexibility to reduce risk, diversify opportunities, and enhance adaptability to technological and energy business changes. This includes collaborating with business partners who can help develop expertise and promote mutual potential, as well as investing in various renewable energy businesses and studying innovation and technology to reduce greenhouse gas emissions. These strategies are part of our sustainable business management framework and reflect our commitment to long-term resilience, which also includes developing monitoring systems, investing in other energy sectors, such as exploring the potential for green hydrogen and green ammonia, as well as studying opportunities related to carbon credits and renewable energy certificate (REC). All of these efforts strengthen our ability to sustainably operate and provide confidence to our stakeholders.”

—

Mr. Supawit Supapa

Specialist - Project Control and Development
Head of Ambition - Business Model Resilience

Commitment

CKPower strives to drive its business on the basis of sustainable development and foster business resilience to ensure its stability, reliability, and competitiveness in the energy business as well as its ability to grow under different circumstances while maintaining the reliability and availability of its production system in order to create satisfaction and meet the needs of the stakeholders and distribute economic value to them in a fair and transparency manner.

CKPower not only seeks to generate profits and business benefits for stakeholders but also takes into account its corporate social responsibility across the value chain by engaging in business exclusively with suppliers with environmental, social, and governance and economic (ESG) management as well as by implementing supply chain management and fostering positive relationships with customers.

Operational Guidelines

Management

CKPower's vision is to become a leading electricity producer in Thailand and Southeast Asia that operates with efficiency on the basis on environmental responsibility in response to changes in state policies and technology, with the three key components being electricity production excellence, process reliability, and the potential of the personnel. In pursuit of this vision, CKPower has prescribed uniform operational guidelines across the organization based on the main concepts of potential enhancement in anticipation of challenges, sustainable business growth through investments in new business opportunities in Thailand and Southeast Asia, and the integration of digital innovation and technology into business operations to foster regional energy security and generate optimal and fair returns for customers and shareholders in accordance with its principal strategies **“P – Partnership for Life”**.



Bangkhenchai Solar Power Plant

CKPower strives to expand its investments in clean energy production and sale businesses that generate minimum pollution in Thailand and Southeast Asia by introducing cutting-edge technologies that meet environmental standards. In addition, the Company places emphasis on developing personnel at all levels and encouraging them to optimize the efficiency of the work systems by applying innovation and has to this end appointed CKP Exploration Unit to initiate new business approaches to minimize risks and increase opportunities from its core businesses as well as to seek new partnerships across various businesses that can lead to synergistic development of expertise and potential in order to collaboratively ensure the region's energy security and generate optimal and fair returns to shareholders. The new unit will also enable the Company to complete its technology and energy transition sustainably to international standards. To ensure that it can achieve Net Zero GHG emissions by 2050, CKPower has planned to expand the installed capacity of its solar power plants from 29 MW to 330 MW and add a new source of renewable energy by launching

a 700 MW wind power generation business by 2024. Furthermore, CKPower is also working with its partners to look into the potential of hydrogen power from renewable energy – an innovative form of energy – in order to increase CKPower's opportunities for expanding into a green hydrogen business in the future.

Business Resilience Action Plan

In 2022, CKPower developed an action plan for fostering business resilience and integrated it into the corporate sustainable business strategies. The five-year action plan (2022-2026) is aimed at promoting the achievement of the Company's short-term and long-term targets, including:

- Gaining at least 3% new customers compared to the total number of customers by 2022
- Establishing action plans for digital technology and innovation application by 2023
- Operating at least one new business in Southeast Asia by 2024.

- Gaining at least three new groups of customers and completing the implementation of the business resilience action plan by 2027

Appointment of CKP Exploration Team

To operate a diverse range of businesses, a challenge of the Company is to enrich the knowledge of its personnel to keep up with the innovation and technology to be applied to its businesses. To this end, CKPower has appointed the CKP Exploration Team, consisting of a new generation of engineers and executives from different units across, including project control and development, electrical engineering, hydropower engineering, solar power engineering, and wind power engineering, to serve as a research and development unit to look for new power production model and define the Company's directions and strategies to keep up with challenges and opportunities brought on by global trends. The new team not only enhances CKPower's business resilience but is also part of the strategy to minimize risks, especially emerging risks in the future.

Performance

The operation of diverse businesses is an essential factor for fostering business resilience, reducing risks, and diversifying opportunities. CKPower's business model focuses on sustainability and the investment portfolio and seeks to achieve balanced and flexible power generation from different types of energy as well as to establish strategies that are consistent with its investment in sustainable assets.

In addition, CKPower places emphasis on the trends of the renewable energy market, the expansion of businesses related to carbon credits and and renewable energy certificates (REC), and the application of ever-changing digital technology and innovation for power production, as emerging trends present an opportunity for the Company to expand its markets towards renewables-based power production businesses. The Company also collaborates with expert organizations to strengthen its operations.



Develop Action Plan

CKPower has developed an action plan that corresponds with changes in digital technology and innovation to enhance its operational efficiency.



Partnership Cooperation

To strengthen its operations, expand investment markets, and enhance its competitive potential, CKPower has joined hands with INNOPOWER, a clean electricity innovation and technology developer in the REC market. This partnership will help address CKPower's sustainability goals as it will enhance the sustainability of its renewables-based electricity production and consumption and create a better balance between its electricity production businesses from non-renewable energy

and renewable energy in its attempt to reduce GHG emissions. CKPower has also initiated a strategic partnership and signed a memorandum of agreement with country's emerging energy and technology enterprise and Bangkok Industrial Gas Co., Ltd., in order to explore the development of low carbon hydrogen production facilities.



Enhance Market Strengthen

CKPower is seeking to strengthen its position in the existing markets and consistently seek new investment markets in new areas within its five-year framework, placing emphasis on expanding towards new groups of customers and adding new strategic zones in Southeast Asia.

- CKPower has entered into an additional project development agreement (PDA) for a small hydroelectric power plant in Lao PDR.

- CKPower is currently in negotiations with a private company in Thailand for a power purchase agreement (PPA) regarding its solar power plant. The agreement is anticipated to be finalized in the first quarter of 2023.
- To expand investments in renewables, CKPower conducted a feasibility study for a 100 MW wind power generation project in Vietnam in 2022.



Digital Technology

In 2022, CKPower introduced digital technology to enhance its hydrological forecast of the inflow volume through the collaboration between CNR, a French consultant, and the Company's engineering team, in which a mathematical model is utilized to apply hydraulic and hydrological principles to runoff assessment. In the short term, the hydrological engineering team has planned to enhance the efficiency of the runoff monitoring and forecast system and maintain the security of the database through, for instance, the establishment of additional water gauging stations, data access management, a transition from a physical server to a cloud server. The use of this mathematical model marks the beginning of CKPower's digital transformation and the utilization of the capabilities of rapidly evolving technologies and innovations, such as communication systems,

satellite networks, and high performance computers, to enhance the Company's business operations.

In the long term, CKPower is planning to expand the forecast model to other projects and use digital technology and innovation to collect data from various sources in order to monitor, study, and process data beneficial to the operation of its power plants, such as the National Oceanic and Atmospheric Administration (NOAA) as runoff volumes serve as its primary fuel in producing and delivering electricity to customers. The objectives are to enhance operational efficiency, reduce operational expenses, develop new processes, and deliver better and innovative experiences to customers and employees.



Internal Carbon Pricing Mechanism

CKPower has made preparations to implement internal carbon pricing (ICP) to create opportunities for green finance for the organization.

Charts for Performance Progress

Installed Capacity in 2022

Installed Capacity

2,167

MW



Hydropower



Solar power



Natural gas

Renewable energy

1,929

MW

Non-Renewable energy

238

MW

Estimated Installed Capacity in 2024

Installed Capacity

4,800

MW



Hydropower



Solar power



Wind



Natural gas

Renewable energy

4,562

MW

Non-Renewable energy

238

MW

INNOVATION MANAGEMENT



2022 Achievements



2 innovations

Developed innovations, aimed at enhancing production efficiency



1,530 stakeholders

Disseminated knowledge and technology to 1,530 stakeholders residing in the vicinity of CKPower's power plants



16 innovators

Developed ecofriendly innovations within organization

2022 Targets



1 innovations

Developing one innovation per year, aiming to enhance production efficiency



1,000 stakeholders

Disseminated knowledge and technology to stakeholders residing in the vicinity of CKPower's power plants



15 innovators

Developed ecofriendly innovations within organization

Impacts on Business

CKPower recognizes that promoting and developing innovation is critical to enhancing production efficiency, reducing costs, and ensuring operational efficiency. This plays a vital role in meeting the needs and satisfying all groups of stakeholders as well as in bolstering growth and business opportunities and enhancing the confidence of investors, stakeholders, and society at large. Innovation development also enables CKPower to adjust to rapidly changing technology and apply new innovations in a suitable manner.

Challenges and Opportunities

In the current business environment, there is increased competition among electricity producer companies, particularly those focused on generating clean electricity. With the increasing physical impacts of global warming continue to intensify and policies and regulations evolved, companies are strategically adjusting to the changing landscape. To remain competitive, many companies are introducing innovation and technology to improve organizational efficiency, enhance capabilities and services, reduce production losses and energy consumption, restrain greenhouse gas emissions, minimize resource consumption,

SDGs



and reduce impacts on environment and communities. Such adjustments are critical to boosting competitiveness, while managing costs and influencing the confidence of shareholders and stakeholders while driving business growth.

As a result, promotion of innovation research and innovator development can significantly enhance CKPower's capabilities in driving economic growth and reducing environmental impacts across its value chain.



“CKPower strives to develop and improve the efficiency of its production process to reduce resource consumption, impacts on the environment and communities, as well as greenhouse gas emissions. To achieve this, the Company continuously has introduced innovation and technology to its manufacturing process and encouraged employees to take part in innovation research and development.”

Mr. Panyakorn Wiriathamcharoen

Control Board - Operation
Sustainability working team

Commitment

CKPower has included innovation management as a key component of its business code of , recognizing its potential to strengthen the expertise of its personnel and enhance the efficiency of work processes. promote a culture of collaboration, ensuring that the

knowledge and technology available within CKPower are utilized to their fullest potential. By prioritizing innovation management, CKPower aims to improve its competitive position, achieve sustainable growth, and minimize negative environmental impacts across its value chain.



Operational Guidelines

CKPower has established a comprehensive innovation development framework to provide guidance and direction for its personnel in



Studies of innovation for the efficiency optimization of Bangpa-in Cogeneration Power Plant

utilizing their knowledge and creativity to drive organizational, environmental, and social development.

Innovation Development Strategies

1. Management of databases to facilitate internal knowledge development and exchange, and promote innovation within the organization.
2. Strengthening innovation capabilities by engaging in partnerships with external agencies or organizations to explore novel technologies and techniques that can drive engineering advancements, foster environmentally sustainable practices, and enhance personnel performance.
3. Facilitating the dissemination of knowledge and innovation to all stakeholders through training, workshops, and seminars.



Innovation Knowledge Development Guidelines

CKPower prioritizes the selection of advanced technology and high-efficiency green production methods. To this end, innovation knowledge development guidelines have been developed, comprising the following components:

Innovation Knowledge Development Guidelines



1 Collection:

Handbooks and databases are curated by employees with expertise in each function to serve as educational materials for employees at all levels. This ensures that knowledge is shared within the organization and innovation can be advanced through collaboration and information exchange.

2 Exchange:

CKPower promotes the exchange of knowledge and experiences among employees by providing training programs for engineers and publicizing its data sources. This facilitates the transfer of practical knowledge and experiences, which helps in the development of new innovations.

3 Knowledge Application:

CKPower develops and compiles new work standards to enable employees to consistently expand their knowledge and apply it in developing innovative solutions.

The company encourages employees to use their creativity and expertise to develop new ideas and apply them to enhance production efficiency, reduce resource consumption, and improve environmental sustainability while addressing societal needs and challenges. To facilitate operations during a digital transformation, CKPower has adopted modern technologies to improve its work systems and enhance efficiency in accordance with the Industry Framework, a standardized model for business processes in the industry.

Innovation Diffusion

CKPower disseminated its innovations to various stakeholders by organizing power plant visits and seminars on innovation as well as shared knowledge on clean energy, renewable energy, energy-saving innovations, and efficient energy consumption. In the past year, a total of 1,530 individuals participated in these activities, which aimed to promote the adoption of sustainable practices and support the development of the local community.

Performance

Thanks to CKPower's continuous research and development of eco-friendly production optimization innovations, the company has successfully implemented 13 innovations, and it currently has 16 innovators who contribute to its innovation pipeline.

1. Lower gas pressure - better heat rate project
2. Phase-2 steam turbine load adjustment project
3. Air dryer deactivation project
4. Deactivation of cooling fan during 00:00-06:00 A.M. project
5. Cooling tower optimization project
6. Adjustment and control of the chloride range in the cooling tower project
7. Slip ring dust collector project
8. Main inlet valve spare part project
9. Gas compressor lubrication reduction projection project
10. Mekong fish migration detection system project
11. Pit antenna innovation project

12. Stop online water wash project
13. Gas compressor power reduction project

CKPower has implemented seven energy management projects resulting in the reduction of cumulative energy consumption by 5,980 MWh, which is equivalent to 2,763 tons of carbon equivalents of greenhouse gases that would have otherwise been emitted.

In 2022, CKPower received two awards at the Asian Power Awards, hosted by Asia's leading magazine of the electricity industry Asian Power, namely the corporate-level Power Utility of the Year Award – Thailand from Fuel Gas System Optimization Project and the Gas Engine Combined Cycle Power Project of the Year Award – Silver for Steam turbine load adjustment project at Bangpa-in Cogeneration Power Plant, in which the turbine was adjusted so that the excess steam destined for disposal in the condenser could be utilized to improve electricity generation efficiency. The award served to boost the morale of CKPower's employees to continue developing new projects and innovations.



**Power Utility of the Year
- Thailand Award ,
by implemented Fuel Gas System
Optimization Project**



**Gas Engine Combined Cycle Power
Project of the Year - Silver Award ,
by implemented Steam Turbine
Load Adjustment Project**

Asian Power Awards 2022
Interview clip



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In 2022, two new innovations were invented as part of its continuous innovation research and development.



Bangpa-in Cogeneration Power Plant

Stop Online Water Wash Improvement Project 2022

The engineering team improved the cleaning of the air compressor of the gas turbines at Bangpa-in Cogeneration Power Plant by determining the appropriate cleaning interval and reduced the washing frequency through an online system, which saved water without affecting the efficiency of the air compressing system. The system improvement addressed an issue with the usual online water wash, for which the production had to be lowered to the condition suitable for cleaning, thus preventing the gas turbines from operating optimally and resulting in loss of both production units and natural gases used.

Performance



Reduced Natural Gases

14,122
MMBTU per year



Energy-Saving

293
MWh



GHG emissions

135
tCO₂e



Water Saving

40
cubic meter



Cost Saving

1,088,962
Baht per year



Gas Compressor Power Reduction Project

Gas Compressor Power Reduction Project

Bangpa-in Cogeneration Power Plant discovered that the excessive pressure of the gas compressor activated the excess flow valve system, resulting energy loss. To this end, they studied and improved the excess flow valve system and reduced the pressure of the gas leaving the pistons to ensure that the valve system would not be triggered.

Performance



Energy for
Gas Compression Saving

238
MWh



Cost Saving

885,952
Baht per year



GHG emissions

110
tCO₂e



Performance

Number of eco-friendly production optimization innovations and innovators developed



2021

2022

11

projects

13

projects

Innovations



2021

2022

10

persons

16

persons

Innovators within
organization

Number of people around CKPower's power plants benefitting from knowledge and innovation transfer



2021

2022

350

persons

1,530

persons

Number of
stakeholders

Innovation-enabled cost and resource savings



2021

2022

3,150

MWh

5,980

MWh

Energy-saving
innovation

2021

2022

1,418

tCO₂e

2,763

tCO₂e

GHG emissions



2021

2022

58,594

cubic meter

54,387

cubic meter

Water Saving



2021

2022

6.5

million baht

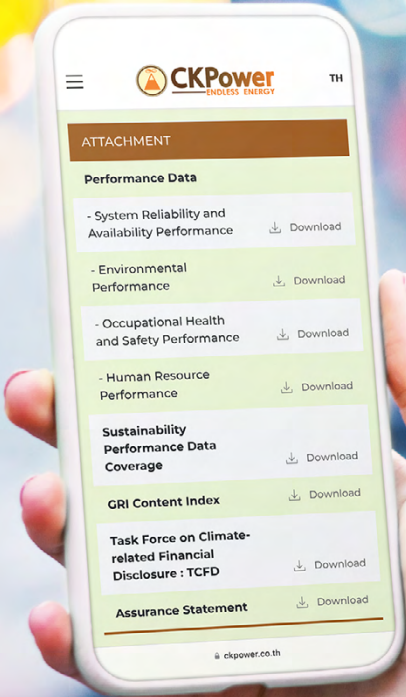
23.7

million baht

Cost Saving



PERFORMANCE DATA



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ENVIRONMENTAL PERFORMANCE DATA

Energy

Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 302-1	Total energy consumption within the organization ¹	MWh	2,005,125.90	2,041,213.70	2,074,139.55	2,112,045.00
	Total non-renewable energy consumed	MWh	3,581,348.76	3,532,552.71	3,545,132.72	3,536,148.18
	Stationary combustion	MWh	3,580,656.85	3,532,005.84	3,543,780.28	3,533,725.50
GRI 302-1	Natural gas ²	MWh	3,580,642.69	3,531,983.13	3,543,749.63	3,533,666.28
		GJ	12,890,210.55	12,715,037.54	12,757,396.60	12,721,096.85
		MMBTU	12,217,662.91	12,051,629.56	12,091,778.54	12,057,372.73
		KG	ND	ND	ND	246,521,343.00
	Diesel	MWh	14.16	22.71	30.65	59.21
		GJ	50.99	81.76	110.33	213.17
		Liter	1,400.00	2,245.00	3,029.50	5,853.00
	Mobile combustion	MWh	691.91	546.87	1,352.44	2,422.69
	Diesel	MWh	656.28	515.43	1,274.33	2,084.46
		GJ	2,362.61	1,855.54	4,587.58	7,504.07
		Liter	64,871.16	50,948.45	125,963.21	206,042.53
	Gasoline	MWh	35.63	31.45	78.11	338.23
		GJ	128.28	113.20	281.21	1,217.61
		Liter	4,075.00	3,596.00	8,933.00	38,678.86

Remarks:

- ND means No Data Available

1. The Company increased the data coverage of energy indicators to include the Company's Headquarter and number of transmission loss for the first time 2022. Decline in COVID-19 in 2022 had caused the Company's activities and energy consumption to increase when compared to last year.

2. The Company consumed natural gas only in the Bangpa-in Cogeneration power plant.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 302-1	Total non-renewable energy sold ³	MWh	1,628,796.94	1,586,867.46	1,600,174.99	1,593,951.63
	Non-renewable electricity sold	MWh	1,560,849.24	1,535,429.42	1,543,171.23	1,533,338.61
		GJ	5,619,012.31	5,527,501.70	5,555,371.97	5,519,974.82
	Steam sold	MWh	67,947.70	51,438.04	57,003.77	60,613.03
		GJ	244,609.77	185,175.46	205,211.93	218,205.15
		TONs	ND	ND	ND	78,036.00
	Non-renewable electricity generated and consumed within the organization	MWh	ND	ND	ND	0.00
	Total energy purchased and consumed within the organization	MWh	17,260.70	8,708.58	10,521.86	4,491.23
	Electricity purchased and consumed within the organization	MWh	17,260.70	8,708.58	10,521.86	4,491.23
		GJ	62,138.51	31,350.90	37,878.71	16,168.31
	Total renewable energy consumed	MWh	ND	50,041.11	87,596.57	165,357.22
	Renewable electricity from solar energy consumed	MWh	ND	ND	ND	0.00
		GJ	ND	ND	ND	0.00
	Renewable electricity from hydropower consumed	MWh	ND	50,041.11	87,596.57	165,357.22
		GJ	ND	180,147.98	315,347.64	595,281.23
	- Total transmission loss	MWh	ND	ND	ND	112,758.97
		GJ	ND	ND	ND	405,929.04
	- Total renewable electricity consumption within organization	MWh	ND	ND	ND	52,598.25
		GJ	ND	ND	ND	189,352.18

Remarks:

- ND means No Data Available

3. The Company sold non-renewable energy only from the Bangpa-in Cogeneration power plant.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 302-1	Total renewable energy sold	MWh	2,535,123.97	7,241,637.74	9,172,747.20	9,883,066.03
	Renewable electricity sold	MWh	2,535,123.97	7,241,637.74	9,172,747.20	9,883,066.03
		GJ	9,126,446.29	26,069,895.86	33,021,889.92	35,578,753.09
GRI 302-3	Energy intensity					
	Total energy consumption within the organization per total energy generated	MWh /MWh	0.61	0.23	0.19	0.18
THSI	Total electricity consumption per total energy generated	MWh/MWh	ND	ND	ND	0.0004

Remarks:
- ND means No Data Available



GHG

Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 305-1, GRI 305-2	Total GHG emissions scope 1 and 2	tCO ₂ e	731,151.00	717,296.83	721,309.65	717,775.96
	Total GHG emissions scope 1	tCO ₂ e	723,452.73	713,447.64	716,049.77	715,530.79
	Stationary combustion	tCO ₂ e	723,126.85	713,299.86	715,684.30	714,330.78
	Natural Gas	tCO ₂ e	723,126.81	713,299.80	715,676.10	714,314.93
	Diesel	tCO ₂ e	0.04	0.06	8.20	15.85
	Mobile combustion ⁴	tCO ₂ e	187.03	147.78	365.47	652.55
	Diesel	tCO ₂ e	177.77	139.61	345.18	564.68
	Gasoline	tCO ₂ e	9.26	8.17	20.29	87.87
	Sulfur hexafluoride: SF6 ⁵	tCO ₂ e	138.85	0.00	0.00	253.80
	Weight of sulfur hexafluoride: SF6	KG	5.91	0.00	0.00	10.80
	Refrigerants	tCO ₂ e	ND	ND	ND	293.66
	Refrigerant R134a	tCO ₂ e	ND	ND	ND	0.00
		KG	ND	ND	ND	0.00
	Refrigerant R32	tCO ₂ e	ND	ND	ND	0.00
		KG	ND	ND	ND	0.00
GRI 305-1	Refrigerant R410a	tCO ₂ e	ND	ND	ND	0.00
		KG	ND	ND	ND	0.00
	Refrigerant R407C ⁶	tCO ₂ e	ND	ND	ND	293.66
		KG	ND	ND	ND	180.80

Remarks:

- ND means No Data Available

4. The increased in data coverage of GHG emissions indicators in 2022 led to increase GHG emissions from stationary combustion when compared to last year

5. The Company conducted maintenance activities in Nam Ngum 2 power plant in 2022, which lead to the use of SF6.

6. The Company conducted maintenance activities in Xayaburi power plant in 2022, which lead to the use of refrigerant R407C.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
	Biogenic emissions	tCO ₂ e	ND	ND	ND	0.00
	Stationary combustion: Diesel B7	tCO ₂ e	ND	ND	ND	0.00
	Mobile combustion: Diesel B7	tCO ₂ e	ND	ND	ND	0.00
	Total GHG emissions scope 2	tCO ₂ e	7,698.27	3,849.19	5,259.88	2,245.17
GRI 305-2	Purchased electricity GHG emissions scope 2 [Location-based]	tCO ₂ e	7,698.27	3,849.19	5,259.88	2,245.17
	Purchased electricity GHG emissions scope 2 [Market-based]	tCO ₂ e	7,698.27	3,849.19	5,259.88	2,245.17
	GHG emissions intensity					
GRI 305-4	Total energy generated ⁷	MWh	3,310,966.06	8,851,869.97	10,771,901.16	11,704,379.09
	GHG emissions scope 1 and 2 per total energy generated	tCO ₂ e/MWh	0.221	0.081	0.067	0.061
	GHG emissions scope 1 and 2 per total energy sold	tCO ₂ e/MWh	ND	ND	ND	0.063
GRI 305-6	Refrigerant R22	tCO ₂ e	ND	ND	ND	23.41
		KG	ND	ND	ND	13.30

Remarks:

- ND means No Data Available

7. Data from 2019-2021 were reported using power purchase agreement (PPA) between the Company and suppliers as reference, while data from 2022 were reported using the Company's actual total energy generation.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 305-7	Other air emissions ⁸					
	Nitrogen oxides: NOx	PPM	ND	ND	ND	168.91
		KG	600,637.09	597,770.75	598,910.61	636,065.50
	Sulphur oxides: SOx	PPM	ND	ND	ND	1.16
		KG	18,555.05	17,258.39	24,398.44	34,192.07
	Persistent organic pollutants: POP	KG	ND	ND	ND	0.00
	Volatile organic compounds: VOC	KG	ND	ND	ND	0.00
	Hazardous pollutant: HAP	KG	ND	ND	ND	0.00
	Particulate matter: PM	PPM	ND	ND	ND	14.14
		KG	25,834.65	21,890.13	33,911.76	28,978.59
	Direct mercury emission	Metric ton	ND	ND	ND	0.00
	Other air emissions intensity					
	Nitrogen oxides: NOx	PPM per MWh	ND	ND	ND	0.000
		Kg per MWh	0.144	0.068	0.056	0.054
	Sulphur oxides: SOx	PPM per MWh	ND	ND	ND	0.000
		Kg per MWh	0.004	0.002	0.002	0.003
	Persistent organic pollutants: POP	Kg per MWh	ND	ND	ND	0.000
	Volatile organic compounds: VOC	Kg per MWh	ND	ND	ND	0.000
	Hazardous pollutant: HAP	Kg per MWh	ND	ND	ND	0.000
	Particulate matter: PM	PPM per MWh	ND	ND	ND	0.000
		Kg per MWh	0.006	0.002	0.003	0.002
	Direct mercury emission	tons per MWh	ND	ND	ND	0.000
-	Avoided GHG emissions	tCO ₂ e	771,413.64	3,226,203.54	4,604,509.49	5,023,206.78
	Total renewable energy generated	MWh	1,729,626.99	7,299,103.04	9,210,861.16	10,048,423.25
	Grid emission factor for Thailand	tCO ₂ e/MWh	0.4460	0.4420	0.4999	0.4999

Remarks:

- ND means No Data Available

8. The Company had other air emissions only from the Bangpa-in Cogeneration power plant.



Water and Effluents

Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 303-3	Total water withdrawal from all areas ⁹	Million Liters	2,033.15	1,910.00	1,722.86	10,621.26
	Total water withdrawal from non-water stress areas	Million Liters	2,033.15	1,910.00	1,722.86	10,621.26
	Municipal water suppliers	Million Liters	2,033.15	1,910.00	1,722.85	1,837.46
	Surface water	Million Liters	ND	ND	0.01	8,783.80
	Groundwater	Million Liters	ND	ND	ND	0.00
	Water recycled and reused within the organization	Million Liters	ND	ND	ND	0.00
GRI 303-3	Total water withdrawal from water stress areas	Million Liters	0.00	0.00	0.00	0.00
	Municipal water suppliers	Million Liters	0.00	0.00	0.00	0.00
	Surface water	Million Liters	0.00	0.00	0.00	0.00
	Groundwater	Million Liters	ND	ND	ND	0.00
	Water intensity					
	Total water consumption from all areas per total energy generated	Million Liters /MWh	0.001	0.000	0.000	0.001
GRI 303-4	Total water discharged	Million Liters	407.81	381.44	344.56	9,042.01
	Municipal water suppliers	Million Liters	407.81	381.44	344.56	367.72
	Surface water	Million Liters	ND	ND	ND	8,674.29
	Groundwater	Million Liters	ND	ND	ND	0.00
GRI 303-5	Total water consumption	Million Liters	1,625.34	1,528.56	1,378.30	1,579.25

Remarks:

- ND means No Data Available

9. The Company increased the data coverage of water indicators to include Xayaburi power plant, Nam Ngum 2 power plant and the Company's Headquarter for the first time in 2022.



Waste

Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 306-3	Total waste generated ¹⁰	Metric ton	42.70	95.96	130.86	136.16
GRI 306-3	Total non-hazardous waste generated	Metric ton	14.82	87.16	114.11	120.53
GRI 306-4	Total non-hazardous waste diverted from disposal	Metric ton	0.00	15.40	29.19	14.82
GRI 306-5	Total non-hazardous waste directed to disposal	Metric ton	14.82	71.76	84.92	105.71
GRI 306-3	Total hazardous waste generated	Metric ton	27.88	8.80	16.75	15.62
GRI 306-4	Total hazardous waste diverted from disposal	Metric ton	26.41	4.84	5.03	4.60
GRI 306-5	Total hazardous waste directed to disposal	Metric ton	1.47	3.96	11.72	11.02
GRI 306-4	Total waste diverted from disposal [on-site and off-site]	Metric ton	26.41	20.24	34.22	19.42
	Total hazardous waste diverted from disposal [on-site]	Metric ton	26.41	4.84	5.03	0.00
	- Preparation for reuse [on-site]	Metric ton	21.31	2.54	3.00	0.00
	- Recycling [on-site]	Metric ton	5.10	2.30	2.03	0.00
	- Other recovery operations [on-site]	Metric ton	0.00	0.00	0.00	0.00
	Total hazardous waste diverted from disposal [off-site]	Metric ton	0.00	0.00	0.00	4.60
	- Preparation for reuse [off-site]	Metric ton	0.00	0.00	0.00	0.00
	- Recycling [off-site]	Metric ton	0.00	0.00	0.00	0.00
	- Other recovery operations [off-site]	Metric ton	0.00	0.00	0.00	4.60
	Total non-hazardous waste diverted from disposal [on-site]	Metric ton	0.00	0.00	14.58	9.20
	- Preparation for reuse [on-site]	Metric ton	0.00	0.00	14.58	0.00
	- Recycling [on-site]	Metric ton	0.00	0.00	0.00	0.00
	- Other recovery operations [on-site]	Metric ton	0.00	0.00	0.00	9.20
	Total non-hazardous waste diverted from disposal [off-site]	Metric ton	0.00	15.40	14.61	5.62
	- Preparation for reuse [off-site]	Metric ton	0.00	0.00	0.00	0.00
	- Recycling [off-site]	Metric ton	0.00	0.00	0.00	5.62
	- Other recovery operations [off-site]	Metric ton	0.00	15.40	14.61	0.00

Remarks:

10. The Company increased the data coverage of waste indicators to include the Company's Headquarter for the first time in 2022. Decline in COVID-19 in 2022 had caused the Company's activities and amount of waste to increase when compared to last year.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 306-5	Total waste directed to disposal [on-site and off-site]	Metric ton	16.29	75.72	96.64	116.74
	Total waste directed to disposal [on-site]	Metric ton	1.47	48.80	74.94	82.24
	Total hazardous waste directed to disposal [on-site]	Metric ton	1.47	2.46	9.19	0.00
	- Incineration with energy recovery [on-site]	Metric ton	0.00	0.00	0.00	0.00
	- Incineration without energy recovery [on-site]	Metric ton	0.00	2.02	6.83	0.00
	- Landfilling [on-site]	Metric ton	1.47	0.44	1.28	0.00
	- Other disposal operations [on-site]	Metric ton	0.00	0.00	1.08	0.00
	Total non-hazardous waste directed to disposal [on-site]	Metric ton	0.00	46.34	65.75	82.24
	- Incineration with energy recovery [on-site]	Metric ton	0.00	0.00	0.00	0.00
	- Incineration without energy recovery [on-site]	Metric ton	0.00	42.50	44.86	40.18
	- Landfilling [on-site]	Metric ton	ND	3.84	20.88	42.06
	- Other disposal operations [on-site]	Metric ton	0.00	0.00	0.00	0.00
	Total waste directed to disposal [off-site]	Metric ton	14.82	26.92	21.70	34.50
	Total hazardous waste directed to disposal [off-site]	Metric ton	0.00	1.50	2.53	11.02
	- Incineration with energy recovery [off-site]	Metric ton	0.00	0.00	0.00	10.50
	- Incineration without energy recovery [off-site]	Metric ton	0.00	0.00	0.00	0.02
	- Landfilling [off-site]	Metric ton	0.00	1.50	2.53	0.34
	- Other disposal operations [off-site]	Metric ton	0.00	0.00	0.00	0.17
	Total non-hazardous waste directed to disposal [off-site]	Metric ton	14.82	25.42	19.17	23.47
	- Incineration with energy recovery [off-site]	Metric ton	0.00	0.00	0.00	0.00
	- Incineration without energy recovery [off-site]	Metric ton	14.82	13.92	19.17	14.35
	- Landfilling [off-site]	Metric ton	0.00	11.50	0.00	0.00
	- Other disposal operations [off-site]	Metric ton	0.00	0.00	0.00	9.12



OCCUPATIONAL HEALTH AND SAFETY PERFORMANCE

Occupational health and safety

Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 403-8	Data coverage					
	Employees	%	ND	ND	ND	100.00
	Contractors	%	ND	ND	ND	100.00
GRI 403-9	Fatalities from work-related injuries					
	Employees	Case	0.00	0.00	0.00	0.00
	Contractors	Case	0.00	0.00	0.00	0.00
	High-consequence work-related injuries					
	Employees	Case	0.00	0.00	0.00	0.00
	Contractors	Case	0.00	0.00	0.00	0.00
	High-consequence work-related injuries rate					
	Employees	Number of hours worked	296,383.75	633,861.00	678,330.35	928,128.50
		Case/ 1,000,000 hours	0.00	0.00	0.00	0.00
	Contractors	Number of hours worked	370,259.00	734,031.00	481,414.00	973,395.00
		Case/ 1,000,000 hours	0.00	0.00	0.00	0.00
	Recordable work-related injuries					
	Employees	Case	1.00	1.00	0.00	1.00
	Contractors ¹	Case	0.00	0.00	0.00	1.00
	Recordable work-related injuries rate					
	Employees	Number of hours worked	296,383.75	633,861.00	678,330.35	928,128.50
		Case/ 1,000,000 hours	3.37	1.58	0.00	1.08
	Contractors	Number of hours worked	370,259.00	734,031.00	481,414.00	973,395.00
		Case/ 1,000,000 hours	0.00	0.00	0.00	1.03

Remarks:

- ND means No Data Available

1. The 1 case of recordable work-related injuries for contractors in 2022 is the same as the 1 case of lost-time injuries for contractors in 2022.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
S&P Global	Lost-time injuries: LTI					
	Employees	Case	1.00	0.00	0.00	0.00
	Contractors ¹	Case	0.00	0.00	0.00	1.00
	Lost-time injuries frequency rate: LTIFR					
	Employees	Case/ 1,000,000 hours	3.37	0.00	0.00	0.00
	Contractors	Case/ 1,000,000 hours	0.00	0.00	0.00	1.03
GRI 403-10	Fatalities from work-related ill health					
	Employees	Case	0.00	0.00	0.00	0.00
	Contractors	Case	0.00	0.00	0.00	0.00
	Recordable work-related ill health					
	Employees	Case	0.00	0.00	0.00	0.00
	Contractors	Case	0.00	0.00	0.00	0.00
SASB	Recordable incident case					
	Employees	Case	0.00	0.00	0.00	1.00
	Contractors	Case	0.00	0.00	0.00	0.00
	Total recordable incident rate: TRIR					
	Employees	Case/ 1,000,000 hours	0.00	0.00	0.00	1.08
	Contractors	Case/ 1,000,000 hours	0.00	0.00	0.00	0.00
	Near miss case					
	Employees	Case	0.00	0.00	0.00	1.00
	Contractors	Case	0.00	0.00	0.00	0.00
	Near miss frequency rate: NMFR					
	Employees	Case/ 1,000,000 hours	0.00	0.00	0.00	1.08
	Contractors	Case/ 1,000,000 hours	0.00	0.00	0.00	0.00

Remarks:

1. The 1 case of recordable work-related injuries for contractors in 2022 is the same as the 1 case of lost-time injuries for contractors in 2022.



SYSTEM RELIABILITY AND AVAILABILITY PERFORMANCE

Electricity Generation

Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI G4-EU1	Energy generating capacity					
	Hydropower ¹	MW	1,900.00	1,900.00	1,900.00	1,900.00
	Solar energy ²		14.73	14.73	14.73	14.73
	Cogeneration ³					
	- Electricity	MW	237.50	237.50	237.50	237.50
	- Steam	Metric Tons	ND	ND	ND	40.00
GRI G4-EU2	Total energy generated ⁴					
	Hydropower ¹	MWh	2,519,574.19	7,221,506.70	9,149,499.88	10,025,549.39
	Solar energy ²		15,549.78	20,130.04	23,247.32	22,873.85
	Cogeneration ³					
	- Electricity	MWh	1,560,829.98	1,535,670.45	1,543,851.11	1,655,955.84
	- Steam	Metric Tons	ND	ND	ND	78,036.00

Remarks:

1. The Company generates electricity from hydropower only in Xayaburi and Nam Ngum 2 power plants.
2. The Company generates electricity from solar energy only in Bangkhenchai power plant.
3. The Company company generates electricity and steam only in Bangpa-in cogeneration power plant.
4. Data from 2019-2021 were reported using power purchase agreement (PPA) between the Company and suppliers as reference, while data from 2022 were reported using the Company's actual total energy generation.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI G4-EU30	Average plants availability factor					
	XPCL	Percentage	ND	95.99	92.85	90.29
	NN2		98.15	97.13	96.96	97.63
	BKC		99.99	98.74	99.18	98.51
	BIC		95.71	96.00	96.63	96.60
	Numbers of unplanned power outages					
	XPCL	Numbers of times	ND	ND	ND	0.00
	NN2		ND	ND	ND	1.00
	BKC		ND	ND	ND	0.00
	BIC		ND	ND	ND	2.00
Gas leakage rate						
S&P Global	Transportation/Transmission	Percentage	ND	ND	ND	0.00
	Distribution to households	Percentage	ND	ND	ND	0.00
	Storage	Percentage	ND	ND	ND	0.00

Remarks:

- ND means No Data Available
- N/A means Not Applicable
- XPCL means Xayaburi power plant
- NN2 means Nam Ngum 2 power plant
- BKC means Bangkhenchai power plant
- BIC means Bangpa-in cogeneration power plant
- Xayaburi power plant began commercial operations in October 2019 and began data collection in 2020.



HUMAN RESOURCE PERFORMANCE

Human Resource

Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 2-7	Full time employees: FTEs					
	Total numbers of full time employees	Persons	457	509	505	517
GRI 2-7	Classified by type of employment					
	- Permanent	Persons	373	392	396	407
	- Contract		84	117	109	110
	Classified by country of operation					
	- Thailand	Persons	216	217	216	227
	- Lao People's Democratic Republic		241	292	289	290
GRI 405-1	Classified by gender					
	- Male	Persons	295	340	337	348
		Percentage	65	67	67	67
	- Female	Persons	162	169	168	169
		Percentage	35	33	33	33
	Classified by age					
	- Less than 30 years	Persons	128	148	120	112
		Percentage	28	29	24	22
	- 30 to 50 years	Persons	296	328	345	364
		Percentage	65	64	68	70
	- Over 50 years	Persons	33	33	40	41
		Percentage	7	6	8	8

Remarks:

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Perfomance	Unit	Year			
			2019	2020	2021	2022
S&P Global	Classified by nationality					
	- Thai	Persons	299	314	310	313
		Percentage	65.43	61.69	61.39	60.54
	- Lao	Persons	149	184	184	193
		Percentage	32.60	36.15	36.44	37.33
	- Indian	Persons	3	5	6	5
		Percentage	0.66	0.98	1.19	0.97
	- German	Persons	2	2	2	2
		Percentage	0.44	0.39	0.40	0.39
	- Costarican	Persons	1	1	1	1
		Percentage	0.22	0.20	0.20	0.19
	- French	Persons	1	1	1	1
		Percentage	0.22	0.20	0.20	0.19
	- Filipino	Persons	1	1	1	1
		Percentage	0.22	0.20	0.20	0.19
	- Cambodian	Persons	1	1	0	1
		Percentage	0.22	0.20	0.00	0.19

Remarks:

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Perfomance	Unit	Year			
			2019	2020	2021	2022
S&P Global	Classified by race/ ethnicity					
	- Thai	Persons	299	314	310	313
		Percentage	65.43	61.69	61.39	60.54
	- Lao	Persons	149	184	184	193
		Percentage	32.60	36.15	36.44	37.33
	- Indian	Persons	3	5	6	5
		Percentage	0.66	0.98	1.19	0.97
	- German	Persons	2	2	2	2
		Percentage	0.44	0.39	0.40	0.39
	- Costarican	Persons	1	1	1	1
		Percentage	0.22	0.20	0.20	0.19
	- French	Persons	1	1	1	1
		Percentage	0.22	0.20	0.20	0.19
	- Filipino	Persons	1	1	1	1
		Percentage	0.22	0.20	0.20	0.19
	- Cambodian	Persons	1	1	0	1
		Percentage	0.22	0.20	0.00	0.19
S&P Global	Classified by people with disability					
	- People with disability	Persons	0	0	0	0
		Percentage	0	0	0	0

Remarks:

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
S&P Global and GRI 405-1	Classified by position					
	Top management	Persons	18	22	21	20
		Persons	15	18	15	14
	- Male	Percentage	83	82	71	70
		Persons	3	4	6	6
	- Female	Percentage	17	18	29	30
	Middle management	Persons	19	13	19	22
		Persons	14	10	10	13
	- Male	Percentage	74	77	53	59
		Persons	5	3	9	9
	- Female	Percentage	26	23	47	41
	Junior management	Persons	69	68	62	64
		Persons	38	37	36	35
	- Male	Percentage	55	54	58	55
		Persons	31	31	26	29
	- Female	Percentage	45	46	42	45
	Officer/ Non-management	Person	351	406	403	411
		Persons	228	275	276	286
	- Male	Percentage	65	68	68	70
		Persons	123	131	127	125
	- Female	Percentage	35	32	32	30

Remarks:

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 401-1	Management of revenue-generating functions	Persons	51	54	53	59
	- Male	Persons	48	50	47	50
		Percentage	94	93	89	85
	- Female	Persons	3	4	6	9
		Percentage	6	7	11	15
	Science, Technology, Engineering & Mathematics: STEM	Persons	198	228	236	236
	- Male	Persons	187	216	222	223
		Percentage	94	95	94	94
	- Female	Persons	11	12	14	13
		Percentage	6	5	6	6
GRI 401-1	New employee hires	Person	107	82	24	34
	Classified by gender					
	- Male	Persons	75	63	17	26
	- Female	Persons	32	19	7	8
	Classified by age					
	- Less than 30 years	Persons	57	45	14	22
	- 30 to 50 years	Persons	47	32	10	11
	- Over 50 years	Persons	3	5	0	1
	New employee hiring rate	Percentage	23	16	5	7
	Classified by gender					
GRI 401-1	- Male	Percentage	70	77	71	76
	- Female		30	23	29	24

Remarks:

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
	Classified by age					
	- Less than 30 years		53	55	58	65
	- 30 to 50 years	Percentage	44	39	42	32
	- Over 50 years		3	6	0	3
S&P Global	Open positions filled by internal candidates/ internal hires	Percentage	39.74	30.51	71.62	57.50
	Average hiring cost per FTE	THB/ FTE	11,997	20,490	65,258	57,526
GRI 401-1	Employee turnover	Persons	30	29	15	56
	Classified by gender					
	- Male		18	20	10	37
	- Female	Persons	12	9	5	19
	Classified by age					
	- Less than 30 years		9	11	5	11
	- 30 to 50 years	Persons	19	16	9	37
	- Over 50 years		2	2	1	8
	Employee turnover rate	Percentage	7	6	3	11
	Classified by gender					
	- Male		60	69	67	66
	- Female	Percentage	40	31	33	34
	Classified by age					
	- Less than 30 years		30	38	33	20
	- 30 to 50 years	Percentage	63	55	60	66
	- Over 50 years		7	7	7	14

Remarks:

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
S&P Global	Voluntary employee turnover	Persons	28	23	14	54
	Classified by gender					
	- Male	Persons	17	15	9	35
	- Female		11	8	5	19
	Classified by age					
	- Less than 30 years	Persons	9	8	5	11
	- 30 to 50 years		18	13	9	36
	- Over 50 years		1	2	0	7
	Voluntary employee turnover rate	Percentage	6	5	3	10
	Classified by gender					
	- Male	Percentage	61	65	64	65
	- Female		39	35	36	35
	Classified by age					
	- Less than 30 years	Percentage	32	35	36	20
	- 30 to 50 years		64	57	64	67
	- Over 50 years		4	9	0	13

Remarks:

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 401-3	Parental leave					
	Employees entitled to parental leave	Persons	457	509	505	517
	Classified by gender					
	- Male	Persons	295	340	337	169
	- Female		162	169	168	348
	Employees that took parental leave	Persons	ND	ND	ND	12
	Classified by gender					
	- Male	Persons	ND	ND	ND	6
	- Female		ND	ND	ND	6
	Employees that took parental leave and returned to work after parental leave ended	Persons	ND	ND	ND	12
	Classified by gender					
	- Male	Persons	ND	ND	ND	6
	- Female		ND	ND	ND	6
	Employees that took parental leave, returned to work after parental leave ended, and still employed 12 months after return to work	Persons	ND	ND	ND	12
	Classified by gender					
	- Male	Persons	ND	ND	ND	6
	- Female		ND	ND	ND	6
	Return to work rate of employees that took parental leave	Percentage	ND	ND	ND	100
	Retention rate of employees that took parental leave	Percentage	ND	ND	ND	100

Remarks:

- ND means No Data Available

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
GRI 405-2	Equal pay assessment of female to male employees					
	Ratio of base salary and remuneration of female to male employees, classified by position					
	Top management					
	- Base salary	Ratio	ND	ND	0.86	0.68
	Middle management					
	- Base salary	Ratio	ND	ND	0.62	0.68
	Junior management					
	- Base salary	Ratio	ND	ND	0.90	0.91
GRI 404-1	Officer/ Non-management					
	- Base salary	Ratio	ND	ND	1.07	1.04
	Training hours					
	Total training hours	Hours	9,788	10,939	16,737	17,173
	Average training hours per FTE	Hours/ FTE	33	32	40	38
	Classified by gender					
	- Male	Hours/ FTE	33	30	41	39
	- Female		35	37	37	29
	Classified by position					
	- Top management	Hours/ FTE	28	26	21	21
	- Middle management		16	65	51	34
	- Junior management		44	62	83	47
	- Officer/ Non-management		32	24	33	38

Remarks:

- ND means No Data Available

The Company's data coverage for human resource indicators include 100% of all employees. The Company's workforce consists only of full time employees (including both permanent and contract) and does not consist of any part time employees.



Disclosure	Performance	Unit	Year			
			2019	2020	2021	2022
S&P Global	Training budget					
	Total training budget	Million THB	4.96	4.20	4.04	6.08
	Training budget per FTE	THB/ FTE	16,861	12,402	9,624	13,600
	Classified by gender					
	- Male	THB/ FTE	15,659	11,594	10,089	12,635
	- Female		19,264	14,017	8,643	13,258
	Classified by position					
	- Top management	THB/ FTE	22,527	34,192	16,210	12,605
	- Middle management		11,112	31,875	13,805	19,125
	- Junior management		23,615	27,679	14,098	20,275
	- Officer/ Non-management		15,046	6,874	8,364	12,190

Remarks:

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GRI CONTENT INDEX

GENERAL DISCLOSURES

GRI Standards	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
About this report						
GRI 2: General Disclosures 2021						
The Organization in Reporting Practice						
	2-1	Organizational details	Sustainability Report: 16-17 56-1 One Report: 24			
	2-2	Entities included in the organization’s sustainability reporting	Sustainability Report: 10-11			
	2-3	Reporting period, frequency and contact point	Sustainability Report: 10-11			
	2-4	Restatements of information	Sustainability Report: 11			
	2-5	External assurance	Sustainability Report: 11, 134-135			
	Activities and workers					
	2-6	Activities, value chain, and other business relationships	Sustainability Report: 16-17, 19			
	2-7	Employees	Sustainability Report: 113			
	2-8	Workers who are not employees	Sustainability Report: 113			
Governance						
	2-9	Governance structure and composition	Sustainability Report: 81-82			
			56-1 One Report: 141-142, 252-260			



GRI Standards	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
2-10	Nomination and selection of the highest governance body	Sustainability Report: 82 56-1 One Report: 169-170 Website: https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/charters/nomination-remuneration-committee-charter-en-02.pdf				
2-11	Chair of the highest governance body	56-1 One Report: 143-144				
2-12	Role of the highest governance body in overseeing the management of impacts	56-1 One Report: 123-137, 150-151, 176-188				
2-13	Delegation of responsibility for managing impacts	Sustainability Report: 25				
2-14	Role of the highest governance body in sustainability reporting	Sustainability Report: 25-27 56-1 One Report: 151				
2-15	Conflicts of interest	56-1 One Report: 56-58, 181-184, 190-202				
2-16	Communication of critical concerns	56-1 One Report: 126, 133, 182				
2-17	Collective knowledge of the highest governance body	56-1 One Report: 127, 142, 177-178				
2-18	Evaluation of the performance of the highest governance body	Sustainability Report: 83 56-1 One Report: 178-179				
2-19	Remuneration policies	56-1 One Report: 159-164, 180-181, 224				
2-20	Process to determine remuneration	56-1 One Report: 127, 159, 164 Website: https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/charters/nomination-remuneration-committee-charter-en-02.pdf				



GRI Standards	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
	2-21 Annual total compensation ratio	56-1 One Report: 164, 171	GRI 2-21 Annual total compensation ratio	Confidentiality constraints	Compensation of Managing Director is considered by the Company as confidential information.	
Strategy, policies and practices						
2-22	Statement on sustainable development strategy	Sustainability Report: 8-10				
2-23	Policy commitments	<p>Website: https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/code-of-conduct/code-of-conductcode-of-business-conduct-en-02.pdf</p> <p>https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/corporate-policies/sustainability-managment-policy-en.pdf</p> <p>https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/corporate-policies/human-rights-policy-en-03.pdf</p>				
2-24	Embedding policy commitments	Website: https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/code-of-conduct/code-of-conductcode-of-business-conduct-en-02.pdf				
2-25	Processes to remediate negative impacts	<p>Website: https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/code-of-conduct/code-of-conductcode-of-business-conduct-en-02.pdf</p> <p>https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/corporate-policies/human-rights-policy-en-03.pdf</p> <p>https://www.ckpower.co.th/storage/content/corporate-governance/guidelines/guidelines-07-en.pdf</p>				



GRI Standards	DISCLOSURE	LOCATION	OMISSION			GRI SECTOR STANDARD REF. NO.
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
2-26	Mechanisms for seeking advice and raising concerns	Website: https://www.ckpower.co.th/storage/content/corporate-governance/corporate-policy-document-download/code-of-conduct/code-of-conductcode-of-business-conduct-en-02.pdf https://www.ckpower.co.th/storage/content/corporate-governance/guidelines/guidelines-07-en.pdf https://www.ckpower.co.th/en/sustainability/sustainability-management-process/corporate-governance-risk-management-corporate-compliance				
2-27	Compliance with laws and regulations	Sustainability Report: 48, 61, 73, 77, 79, 88				
2-28	Membership associations	Sustainability Report: 22				
Stakeholder engagement						
2-29	Approach to stakeholder engagement	Sustainability Report: 28-33 56-1 One Report: 76-77, 130-134 Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/stakeholder-engagement				
2-30	Collective bargaining agreements	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/human-capital-management				
GRI 3: Material Topics 2021						
3-1	Process to determine material topics	Sustainability Report: 26-27				
3-2	List of material topics	Sustainability Report: 27-33				



TOPIC-SPECIFIC DISCLOSURES

Materiality	GRI Standards	Disclosures	Location	Omission
Corporate governance, risk management, and compliance				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 80-88	
GRI 205: Anti-corruption 2016				
	205-2	Communication and training about anti-corruption policies and procedures	Sustainability report: 79	
	205-3	Confirmed incidents of corruption and actions taken	Sustainability report: 79	
System reliability and availability				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 90-91	
Customer relationship management and responsibility towards customers				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/customer-relationship-management	
Innovation management				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 94-96	
Supply chain management				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/supply-chain-management	



Materiality	GRI Standards	Disclosures	Location	Omission
GRI 308: Supplier Environmental Assessment				
	308-1	New suppliers that were screened using environmental criteria	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/supply-chain-management	
	308-2	Negative environmental impacts in the supply chain and actions taken	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/supply-chain-management	
GRI 414: Supplier Social Assessment 2016				
	414-1	New suppliers that were screened using social criteria	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/supply-chain-management	
	414-2	Negative social impacts in the supply chain and actions taken	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/supply-chain-management	
Business model resilience				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 89	
Respect for human rights				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 73	
GRI 412: Human Rights Assessment 2016				
	412-1	Operations that have been subject to human rights reviews or impact assessments	Sustainability Report: 77	
	412-2	Employee training on human rights policies or procedures	Sustainability Report: 76	
GRI 405: Diversity and Equal Opportunity 2016				
	405-1	Diversity of governance bodies and employees	Sustainability Report: 81-82, 113-114	
	405-2	Ratio of basis salary and remuneration of women to men for each employee category	Sustainability Report: 121	



Materiality	GRI Standards	Disclosures	Location	Omission
Human capital management				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/human-capital-management#	
GRI 401: Employment 2016				
	401-1	New employee hires and employee turnover	Sustainability Report: 117-119	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/human-capital-management#	
	401-3	Parental leave	Sustainability Report: 120 Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/human-capital-management#	
GRI 404: Training and Education 2016				
	404-1	Average hours of training per year per employee	Sustainability Report: 121-122	
	404-2	Programs for upgrading employee skills and transition assistance programs	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/human-capital-management#	
	404-3	Percentage of employees receiving regular performance and career development reviews	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/human-capital-management#	
GRI 406: Non-Discrimination 2016				
	406-1	Incidents of discrimination and corrective actions taken	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/corporate-governance-risk-management-corporate-compliance	
Community and social care				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 62	



Materiality	GRI Standards	Disclosures	Location	Omission
GRI 413: Local Communities 2016				
	413-1	Operations with Local Community Engagement, Impact Assessments, and Development Programs	Sustainability Report: 62-63	
	413-2	Operations with Significant actual and potential negative impacts on local communities	Website: https://www.ckpower.co.th/en/sustainability/stakeholder-engagement/community-engagement	
Occupational health and safety in the workplace				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/occupational-health-and-safety	
GRI 403: Occupational Health and Safety 2018				
	403-1	Occupational health and safety management system	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/occupational-health-and-safety	
	403-2	Hazard identification, risk assessment, and incident investigation	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/occupational-health-and-safety	
	403-3	Occupational health services	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/occupational-health-and-safety	
	403-4	Worker participation, consultation, and communication on occupational health and safety	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/occupational-health-and-safety	
	403-5	Worker training on occupational health and safety	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/occupational-health-and-safety	
	403-6	Promotion of worker health	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/occupational-health-and-safety	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Website: https://www.ckpower.co.th/en/sustainability/sustainability-management-process/occupational-health-and-safety	
	403-8	Workers covered by an occupational health and safety management system	Sustainability Report: 109	
	403-9	Work-related injuries	Sustainability Report: 109-110	
	403-10	Work-related ill health	Sustainability Report: 109-110	



Materiality	GRI Standards	Disclosures	Location	Omission
Environmental management				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 49 - 50	
GRI 303: Water and Effuents 2018				
	303-1	Interactions with water as a shared resource	Sustainability Report: 50-51	
	303-2	Management of water discharge-related impacts	Sustainability Report: 50-51	
	303-3	Water withdrawal	Sustainability Report: 106	
	303-4	Water discharge	Sustainability Report: 106	
	303-5	Water consumption	Sustainability Report: 106	
GRI 306: Waste 2020				
	306-1	Waste generation and significant waste-related impacts	Sustainability Report: 50-51	
	306-2	Management of significant waste-related impacts	Sustainability Report: 50-51	
	306-3	Waste generated	Sustainability Report: 107-108	
	306-4	Waste diverted from disposal	Sustainability Report: 107-108	
	306-5	Waste directed to disposal	Sustainability Report: 107-108	
GRI 307: Environmental Compliance 2016				
	307-1	Non-compliance with environmental laws and regulations	Sustainability Report: 48	
Biodiversity				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 54-56	
GRI 304: Biodiversity 2016				
	304-3	Habitat protected or restored	Sustainability Report: 54-59	



Materiality	GRI Standards	Disclosures	Location	Omission
Energy management and climate change				
GRI 3: Material Topics 2021				
	3-3	Management of material topics	Sustainability Report: 40	
GRI 302: Energy 2016				
	302-1	Energy consumption within the organization	Sustainability Report: 100-102	
	302-2	Energy consumption outside of the organization	Sustainability Report: 100-102	
	302-3	Energy intensity	Sustainability Report: 100-102	
	302-4	Reduction of energy consumption	Sustainability Report: 43 - 44	
	302-5	Reductions in energy requirements of products and services	Sustainability Report: 43 - 44	
GRI 305: Emissions 2016				
	305-1	Direct (Scope 1) GHG emissions	Sustainability Report: 103-104	
	305-2	Energy Indirect (Scope 2) GHG emissions	Sustainability Report: 103-104	
	305-4	GHG emissions intensity	Sustainability Report: 103-104	
	305-5	Reduction of GHG emissions	Sustainability Report: 43 - 44	
	305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Sustainability Report: 105	
G4 SECTOR DISCLOSURE: ELECTRIC UTILITIES				
Organizational Profile				
EU1	Installed capacity, broken down by primary energy source and by regulatory regime		Sustainability Report: 111-112	
EU2	Net energy output broken down by primary energy source and by regualtory regime		Sustainability Report: 111-112	
Access				
EU12	Transmission and Distribution losses as a percentage of total energy		Sustainability Report: 111-112	
EU28	Power outage frequency		https://www.ckpower.co.th/en/sustainability/sustainability-management-process/system-reliability-and-availability	
EU29	Average power outage duration		https://www.ckpower.co.th/en/sustainability/sustainability-management-process/system-reliability-and-availability	
EU30	Average plant availability factor by energy source and by regulatory regime		Sustainability Report: 111-112	



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Building a better
working world

Independent Limited Assurance Report

To the Directors of CK Power PCL

Conclusion

CK Power PCL (“CKP”) engaged EY Office Limited (“EY” or “we”) to perform a ‘limited assurance’ engagement, as defined by International Standards on Assurance Engagements, hereafter referred to as the “engagement”, on selected subject matters (the “Subject Matters”) included in CKP’s Sustainability Report for the year ended 31 December 2022 (the “Reports”).

Based on our procedures and the evidence obtained, nothing has come to our attention that causes us to believe that the Subject Matters were not prepared and presented fairly, in all material respects, in accordance with the Criteria.

Subject Matters

Our limited assurance engagement covers the following Subject Matters:

Subject Matters	Scope
GRI 302-1 Energy consumption within organization	Head office CK Power Public Company Limited Hydropower Nam Ngum 2 Power Company Limited Xayaburi Power Company Limited Cogeneration Power Bangpa-in Cogeneration Limited Solar power Bangkhenchai Company Limited.
GRI 305-1 Direct (scope 1) greenhouse gas emissions	
GRI 305-2 Energy indirect (scope 2) greenhouse gas emissions	
GRI 306-3 Waste generated	
GRI 306-4 Waste diverted from disposal	
GRI 306-5 Waste directed to disposal	Cogeneration Power Bangpa-in Cogeneration Limited
GRI 403-9 Work-related injuries	
GRI 305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	

Other than as described in the above table, which sets out the scope of our engagement, we did not perform assurance procedures on the remaining information included in the Sustainability Report, and accordingly, we do not express a conclusion on this information.

Criteria applied by CKP

In preparing the Subject Matters CKP applied the Global Reporting Initiative Sustainability Reporting Standards (“GRI Standards”).

CKP’s responsibilities

CKP’s management is responsible for selecting the Criteria, and for presenting the Subject Matters in accordance with that Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the Subject Matters, such that it is free from material misstatement, whether due to fraud or error.

EY’s responsibilities

Our responsibility is to form a conclusion on CKP’s presentation of the Subject Matters based on the evidence we have obtained.

We conducted our engagement in accordance with the International Standard for Assurance Engagements 3000 (ISAE 3000) - Assurance Engagements Other Than Audits or Reviews of Historical Financial Information (the “Standard”). This Standard requires that we plan and perform our engagement to obtain limited assurance about whether, in all material respects, the Subject Matters are presented in accordance with the Criteria, and to issue a report. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusions.

Our Independence and Quality Control

We have maintained our independence and confirm that we have met the requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, and have the required competencies and experience to conduct this engagement.



EY also applies International Standard on Quality Control 1 - *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Description of procedures performed

Procedures performed in a limited assurance engagement vary in nature and timing from and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the Subject Matters and related information, and applying analytical and other appropriate procedures.

Our procedures included:

- Conducted interviews with personnel to understand the business and reporting process
- Conducted interviews with key personnel to understand the process for collecting, collating and reporting the Subject Matters during the reporting period
- Checked that the calculation criteria have been correctly applied in accordance with the methodologies outlined in the Criteria
- Undertook analytical review procedures to support the reasonableness of the data
- Identified and testing assumptions supporting calculations
- Tested, on a sample basis, underlying source information to check the accuracy of the data

We also performed such other procedures as we considered necessary in the circumstances.



Other matters

Our report does not extend to any disclosures or assertions relating to future performance plans and/or strategies disclosed in the Sustainability Report.

The maintenance and integrity of CKP's website is the responsibility of CKP's management. Our procedures did not involve consideration of these matters and, accordingly we accept no responsibility for any changes to the Subject Matters and related disclosures, the sustainability report or to our independent limited assurance report that may have occurred since the initial date of presentation on CKP's website.

Restriction of use

This report is prepared in accordance with our engagement terms agreed with CKP, and intended solely for the Directors of CKP for the purpose of reporting the Subject Matters in the Sustainability Report and is not intended to be and should not be used by anyone other than those specified parties. To the fullest extent permitted by law, we do not accept or assume any responsibility for any reliance on this assurance report to any persons other than the Directors of CKP, or for any purpose other than that for which it was prepared.

Wilaiporn Illiwiroon
Partner
EY Office Limited

Bangkok, Thailand
8 March 2023

CK Power Public Company Limited

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