Climate Management

Purpose

The Company recognizes that climate change has significant impacts for the electric utilities industry both in terms of physical risks, such as changes in water availability in various geographies, and transition risks, such as the development of carbon trading mechanisms. Undeniably, a key focus for the industry is the reduction of greenhouse gas emissions and the transition to low or no-carbon energy sources as governments, investors and consumers begin to increase pressure on businesses to undertake more aggressive climate commitments. At the same time, the Company must also maintain its commitment to its investors and to its role in providing sufficient and reliable energy for the country. As such, it is essential for the Company to effectively manage climate risks and capitalize on opportunities created by the energy transition while balancing the needs of various stakeholders in relation to all three dimensions of sustainability – economic, environmental and social.

Policy and process

The Company's approach to climate management draws on the guidelines and recommendations of various national and international policies and frameworks including Thailand's national energy policies, the Greenhouse Gas Protocol, and the ISSB IFRS S2 standards for climate-related financial disclosure (developed in part from the Task Force on Climate-related Financial Disclosures (TCFD)), which focuses on four core areas.

Governance:

The organization's governance around climate-related risks and opportunities

Strategy:

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management:

The processes used by the organization to identify, assess, and manage climate-related risks

Metrics & Targets:

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

(Source: IFRS S2)

Governance

Good governance forms the foundation for all of the Company's strategies and activities, including its management of climate-related issues such as the assessment and management of climate-related risks and opportunities. The Company has therefore established a governance structure which ensures oversight of climate management at the executive and the Board level. This oversight covers investment decisions as well as climate-related risk management, performance monitoring, and policy review with the aim of aligning the Company's climate and business aspirations and strategies. To ensure these aspirations translate into actions, the Company integrates climate-related key performance indicators (KPIs) into performance evaluations at the individual, department, project and corporate levels. At the corporate level, climate-related KPIs include increasing the proportion of renewable energy by installed capacity and meeting or exceeding operational efficiency targets for power projects (which both contribute to a reduction in carbon intensity). The variable portion of executive remuneration, such as performance bonuses, reflects executives' performance on the achievement of the corporate KPIs.

Board level

The Board of Directors (BOD) meets monthly to:

- Oversee investment decisions including major capital expenditures, acquisitions, and divestitures
- Provide recommendations on performance objectives such as renewable energy capacity and operational eco-efficiency
- Approve policies and corporate risk assessments (including sustainability and climate-related policies and risk assessments)
- Monitor and guide implementation of sustainability and climate-related strategies and operations through the Sustainability, Governance and Risk Management Committee (SGRC) which meets quarterly

Board of Directors

Sustainability, Governance and Risk Management Committee

Management level

The CEO chairs the Executive Committee which meets at least monthly to:

- Guide and approve climate strategy including setting climate objectives and reviewing, assessing and managing climate-related risks and opportunities
- Allocate resources for business activities including climate mitigation and climate adaptation
- Provide direction and oversight for business growth, project development, and operations directly or through other management committees which meet bimonthly

Executive Committee / CEO

Other Management Committees

Operational level

The Sustainability and Risk Management department* coordinates with all business units and departments on a regular basis to:

- Facilitate implementation of sustainability and climate-related policies, strategies and action plans, including incorporating climate issues into project planning and implementation
- Collect and analyze information from relevant functions to support decision-making at the management and Board level
- Assess corporate risks and opportunities, including sustainability and climate-related risks and opportunities, and monitor the implementation of climate-related risk management plans
- Monitor climate-related trends and development, market demands and market opportunities
- Develop sustainability and climate-related performance reports including updates to management and the SGRC / BOD

Sustainability and Risk Management department

Other business units and functions

** The Sustainability and Risk Management department reports directly to the Deputy CEO and CFO who sits on the Executive Committee, the SGRC, and the BOD.*

Strategy

The Company's climate strategy is integrated in its business and sustainability strategies, as the Company operates mainly in the energy and infrastructure sphere which has been a focal point of global climate efforts. The Company recognizes that the worldwide shift towards a low-carbon society will change the energy industry in the long term, with fewer opportunities for growth in gas-fired generation and more opportunities for growth in renewable energy. At the same time, stakeholders are also placing greater emphasis on corporate responsibility related to climate management. As such, the Company's climate strategy focuses on both climate mitigation and climate adaptation to support the energy transition and ensure the Company can maintain strong and sustainable business growth into the future, with a long-term ambition of reaching net zero scope 1 and scope 2 greenhouse gas emissions by 2050.

Climate mitigation

Focused on increasing investments in renewable energy and improving operational efficiency

Key actions:

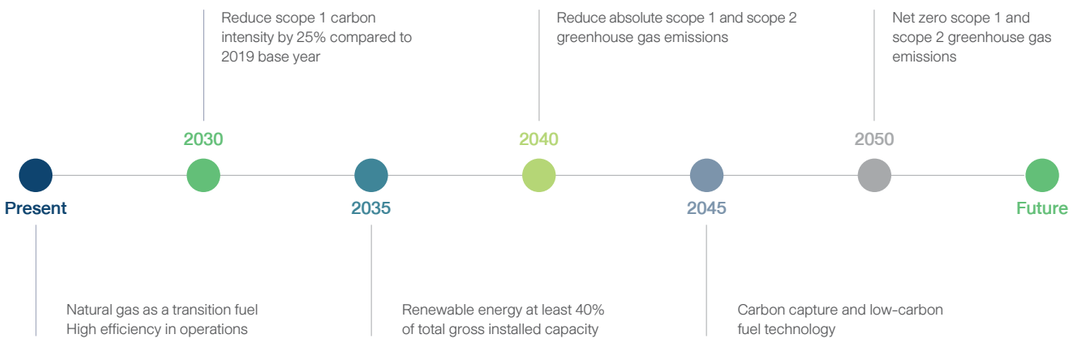
- Maintain a No Coal Policy, supporting natural gas as a cleaner reliable transition fuel
- Increase investment in renewable energy and related businesses
- Strive for the highest operating efficiency through state-of-the-art technology and efficiency improvement projects
- Study new low-carbon technologies such as carbon capture and alternative fuels

Climate adaptation

Focused on maintaining resilience against physical climate risks and fostering awareness of climate issues

Key actions:

- Conduct climate scenario analysis for physical and transition risks
- Integrate climate adaptation measures into project design and operating processes (e.g. flood prevention, water storage, vegetation management)
- Implement measures to reduce resource consumption (e.g. natural gas, water, land)
- Enhance employee awareness and understanding of climate issues through training and knowledge sharing



To support its climate strategy, the Company conducts a carbon footprint for organization assessment for all power projects in Thailand which have been in operation for at least one year. Although absolute greenhouse gas emissions will increase in the short to medium term due to new projects achieving commercial operation, the Company seeks to reduce its scope 1 emissions intensity over the same time period, which can be achieved through increasing renewable generating capacity, using newer turbine technology, and implementing efficiency improvement programs. The Company also recognizes that ensuring its gas-fired power plants operate at the highest efficiency helps contribute to the overall reduction of greenhouse gas emissions in Thailand, as natural gas can be used as a transition fuel to replace coal-fired generation while still maintaining high levels of reliability.

Risk Management

The Company has established an enterprise risk management (ERM) approach based on the framework set out by COSO (The Committee of the Sponsoring Organizations of the Treadway Commission) which focuses on developing a culture within which strategy-setting and performance can be integrated to manage risk. This approach allows the Company to consider climate risks as part of its normal risk assessment process which covers a variety of risk types and/or events, thus providing a more holistic view of the potential impacts to the Company and encouraging a deeper understanding of the relationship between climate risks and other risks. At the same time, a separate assessment is conducted using climate scenario analysis to focus specifically on climate risks as a unique and discrete issue. The results of the climate risk assessment are used to inform the corporate risk assessment under the Company's ERM approach. (Please refer to the Risk Management chapter in the Annual Report (56-1 One Report) for more details about the Company's risk management process.)

As the Company's core business mainly involves investments in large-scale long-term projects, risk management at the project and corporate level must, by nature, take into account medium- and long-term risks. For example, the planning and development phase (including construction) of a typical power project may take up to ten years, and the project will be expected to operate for another 20-25 years at minimum. As such, scenario analysis (for climate and other factors) and other forecasting techniques are already integrated in normal strategic planning and operations. Risk management in the short term, on the other hand, focuses more on the day-to-day operations of the Company and its projects. In assessing climate risks, the Company considers both physical and transition risks that may affect the Company in the short (1-2 years), medium (3-5 years) and long term (6 or more years). In any case, the Company recognizes that with appropriate management, many risks can be turned into opportunities for growth and improvement.

As with other risks assessed by the Company, the impact and likelihood of the risks are assessed to identify material risks and determine appropriate controls and mitigation plans. A number of data sources are used to support the risk assessment including Company policies and direction, national and international policies and regulations, local and global trends, peer benchmarking, and input from experts. Climate scenario analysis is also used for the assessment of long-term risks for operating power projects in Thailand. The key scenarios used to assess physical risks are the IPCC RCP 8.5 (worst-case scenario with a global temperature increase of over 4˚C by 2100) and the RCP 4.5 (moderate scenario with a global temperature increase around 2˚C by 2100), while the key scenarios used to assess transition risks are the IEA Stated Policies (STEPS) scenario (reflecting current policies) and the IEA Net Zero by 2050 (NZE) scenario (which reflects a "well below 2˚C" model). The Company follows the TCFD recommendations on the types of climate risks to consider.

Risks						Opportunities				
Physical		Transition								
acute	chronic	policy / legal	technology	market	reputation	resource efficiency	energy source	product & services	markets	resilience

Risks

Physical risks related to climate change

Acute (Scenario: RCP 8.5)

Description:
Business interruption and/or damage to assets due to flooding may result in reduced revenue or increased operating costs.

A medium level of risk is identified in the medium term.

Mitigation:
- Incorporation of flood prevention measures in project design, e.g. flood walls, raised platforms for major machinery
- Purchase of flood insurance covering estimated maximum loss (EML) based on 100-year flood data

Chronic (Scenario: RCP 4.5 / RCP 8.5)

Description:
Business interruption due to drought and water stress may result in increased operating costs.

A medium level of risk is identified in the long term.

Mitigation:
- Raw water storage ponds (covering 45-60 days of operations)
- Increased water cycling in cooling towers
- Switch to premium clarified water

Transition risks related to climate change

Policy / Legal (Scenario: IEA NZE)

Description:
More numerous and more stringent climate-related investment or lending criteria may result in increased financing costs and increased capital expenditure.

A medium level of risk is identified in the medium term.

Mitigation:
- Increase investment in renewable energy
- Study climate mitigation technology, e.g. carbon capture and storage, turbine modification for hydrogen fuel mix

Technology (Scenario: IEA NZE)

Description:
Lower dispatch of electricity from gas-fired power projects due to more widespread installation of renewable energy may result in reduced revenue.

A medium level of risk is identified in the long term

Mitigation:
- Utilize state-of-the-art technology in all projects to maintain the highest levels of efficiency to ensure dispatch to support peak demand

Market (Scenario: IEA NZE / IEA STEPS)

Description:
Fewer opportunities for growth for large-scale gas-fired power projects due to shift towards renewable energy and rise in “prosumers” may result in reduced access to capital (for new gas-fired power generation).

A high level of risk is identified in the short to medium term.

Mitigation:
- Increase investment in renewable energy
- Development of small-scale and retail energy business, e.g. solar rooftop
- Partner with energy and industrial companies to build new customer base

Reputation (Scenario: IEA STEPS)

Description:
Fewer opportunities for growth for large-scale gas-fired power projects due to shift towards renewable energy and rise in “prosumers” may result in reduced access to capital (for new gas-fired power generation).

A low level of risk is identified in the short to medium term.

Mitigation:
- Increase investment in renewable energy
- Development of small-scale and retail energy business, e.g. solar rooftop
- Partner with energy and industrial companies to build new customer base

Opportunities

Resource efficiency (Scenario: IEA STEPS)

Description:
Reduced greenhouse gas emissions, fuel consumption, and energy consumption due to improvements in production efficiency may result in reduced operating costs.

Opportunity created in the short term.

Management:
- Implementation of IU load switching and other efficiency improvement projects

Energy source (Scenario: IEA NZE / IEA STEPS)

Description:
Growth in renewable energy business; participation in carbon markets may result in increased revenue and increased access to capital.

Opportunity created in the short to medium term.

Management:
- Increase investment in renewable energy
- Seek green financing for eligible projects
- Register for carbon credits and/or RECs

Products & services (Scenario: IEA NZE)

Description:
Growth in the retail energy business (decentralized & distributed generation) and increased demand for lower carbon energy products may result in increased revenue.

Opportunity created in the short to medium term.

Management:
- Expansion of the solar rooftop business
- Synergy with partners in new businesses, e.g. clean energy for data center business

Markets (Scenario: IEA NZE / IEA STEPS)

Description:
Access to new markets (overseas); access to new sources of funding may result in increased revenue or increased diversification of financial assets

Opportunity created in the short to medium term.

Management:
- Increase investment in renewable energy
- Seek green financing, e.g. issuance of green bonds

Resilience (Scenario: IEA NZE / RCP 4.5)

Description:
Increased adoption of energy-efficiency measures, e.g. LEED-certified buildings; increased adoption of new energy technologies, e.g. electric vehicles, battery storage, smart grids & meters may result in reduced operating costs.

Opportunity created in the medium to long term.

Management:
- Partnerships and MOUs with state and private companies as well as universities to study new technologies with potential for incorporation and/or implementation in the Company’s current and future projects

Metrics and targets

In 2023, the Company revised its sustainability and climate strategies to cover a long-term ambition to achieve net zero scope 1 and scope 2 greenhouse gas emissions by 2050. This is supported by short- and medium-term targets to reduce its carbon intensity from its power generation business, measured as tons of carbon dioxide equivalent per megawatt-hour of electricity generation (tCO_2e/MWh), through efficiency improvements and increasing the Company's gross installed capacity of renewable energy. The Company also aims to expand its carbon footprint assessment to cover new businesses and projects, both in Thailand and overseas.

Targets

Short-term: 1-2 years **Medium-term:** 3-5 years **Long-term:** 6-10 years or more

Short term:
- Expand carbon footprint assessment to cover 100% of projects in operation domestically and overseas by the end of 2025.

Medium term:
- Reduce scope 1 carbon intensity by 25% by 2030 (compared to 2019 base year).

Long term:
- Increase proportion of renewable energy to 40% of total gross installed capacity by 2035.
- Achieve net zero scope 1 and scope 2 greenhouse gas emissions by 2050.

The Company also tracks additional climate-related metrics as follows.

Energy consumption

The Company places great importance on maintaining high levels of efficiency in operations as this contributes to lower fuel and energy consumption which translates into greater cost savings as well as lower waste and emissions. The Company employs a three-pronged approach to achieve its efficiency objectives:

- Technology: The Company uses highly-efficient state-of-the-art technology along with digital tools to optimize operations.
- Operations and maintenance planning: The Company follows a proactive preventive maintenance regime to prevent unnecessary and unplanned shutdowns which would reduce efficiency.
- Innovation: The Company has a dedicated efficiency team responsible for finding innovative solutions to improve operational efficiency. The Company also collaborates with partners, suppliers, universities, and other external stakeholders to study new innovations.

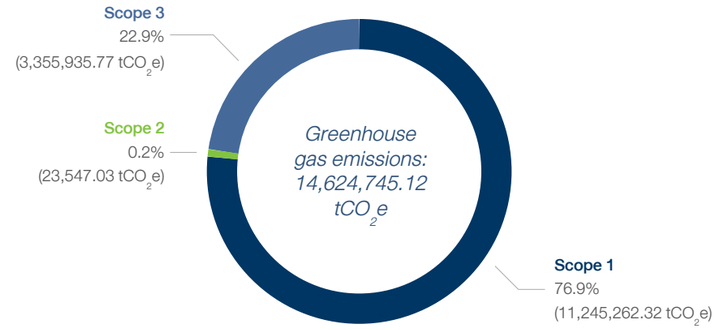
Capital expenditure

To support its target to increase the proportion of renewable capacity to 40% of total installed generating capacity by 2035, the Company has developed a 5-year investment plan with expected capital expenditure of 90 billion Baht of which approximately 79% will be allocated to investment in renewable energy.

Water consumption

The Company conducts an annual water footprint assessment for all its power projects in Thailand which have been in operation for at least one year to monitor its water consumption. Additional details can be found in the Water Management chapter on page 36.

Performance

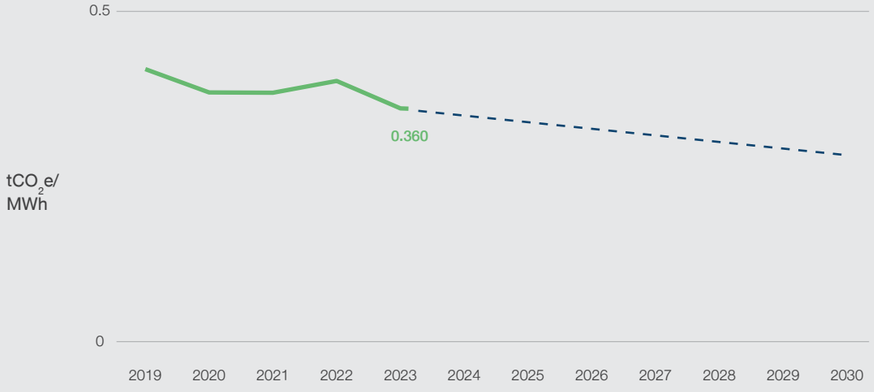


Target: Expand carbon footprint assessment to cover all operating power projects domestically and internationally by the end of 2025.

Current coverage: 53%

0% 100%

Target: Reduce scope 1 carbon intensity 25% by 2030 compared to 2019 base year.



Target: Increase the proportion of renewable energy to 40% of total gross installed capacity by 2035.

Current capacity: 8%

0% 40%