

EGCO IFRS S2 Disclosure 2024

July 2024



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1. INTRODUCTION

The Electricity Generating Public Company Limited (EGCO) acknowledges the pivotal role of the power sector in global climate change efforts, striving to limit temperature rises to 1.5°C as per the Paris Agreement. With climate change being an increasingly material issue, EGCO is committed to become carbon neutral by 2040 and achieve net zero emissions by 2050. Recognizing the pressing need for rapid decarbonization, EGCO also firmly declares our refusal to further invest in coal-fired power plants with a shifted focus toward clean and renewable energy sources. EGCO has been continuously making public disclosures on our performance and key initiatives demonstrating EGCO’s commitment to all stakeholders to furthering this agenda.

To better understand and manage climate-related impacts on our business, EGCO has been actively working on climate-related disclosure in accordance with the IFRS S2 Sustainability Disclosure Standard to communicate to our investors and stakeholders the financial impacts of climate change and the company’s resilience strategy to these impacts. EGCO intends to continuously improve our climate-related performance and associated disclosures to be in line with best international practices.

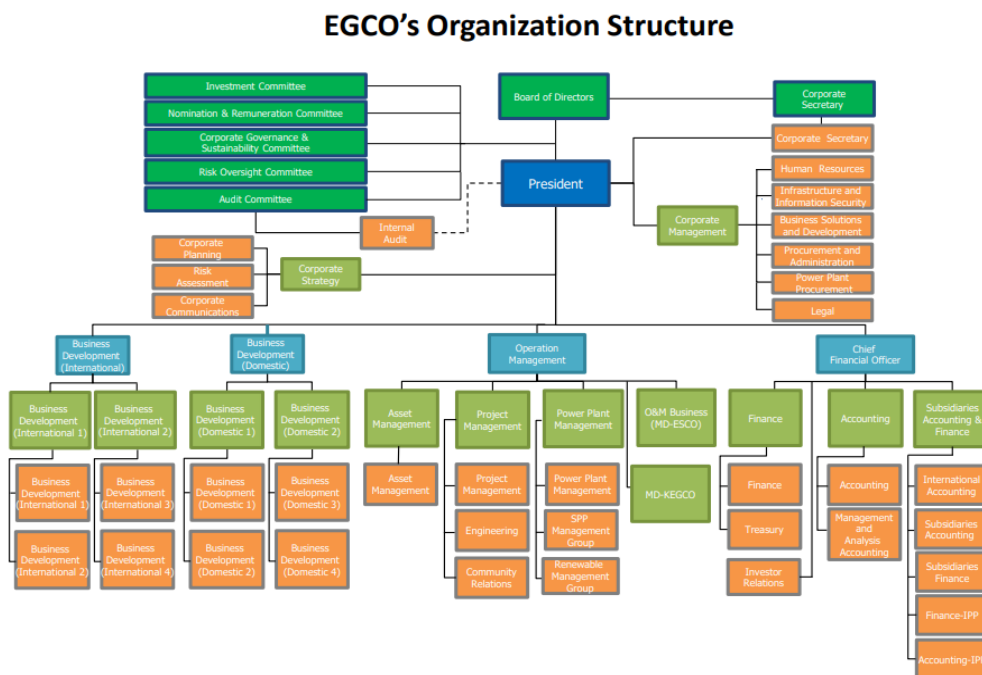
2. GOVERNANCE

In recognizing the power sector's critical role in driving climate action and the transition towards a low-carbon economy and society, EGCO has effectively incorporated climate change issues into its governance structure, spanning from the board level to managerial positions. Notably, climate issues are an integral part of the Board of Directors' annual agenda, affirming their significance. The roles and responsibilities of the Board, Board-level committees, and managerial functions are described below.

Figure 1 EGCO's Organization Structure



Energy for life



Effective Date: January 1, 2023

Table 1 EGCO's Climate Governance

EGCO Functions	Function Level	Climate Risks & Climate Strategy Roles and Responsibilities	Meeting Frequency
Board of Directors (BoD)	Governance (Board)	<ul style="list-style-type: none"> Approves climate strategy and climate-related annual action plans, and KPIs, targets and goals. Oversees progress against goals and targets related to climate change and conduct quarterly meeting to review progress of Climate action plans and KPIs. 	Quarterly
Corporate Governance & Sustainability Committee (CC)	Governance (Board)	<ul style="list-style-type: none"> Provides oversight over the implementation of climate strategy and climate-related risks and opportunities management at the corporate level Endorses climate strategy, climate-related policies, objectives, and annual plans in line with strategic plans, for the Board's approval 	Quarterly
Risk Oversight Committee (ROC)	Governance (Board)	<ul style="list-style-type: none"> Assesses monthly the corporate risks, which includes climate-related risks and opportunities, and risk mitigation plans under the risk management systems and processes as presented by the Risk Assessment Division At least bi-annually reviews the progress of climate-related issues and initiatives, corporate action plans, KPIs, targets and goals 	Bi-annually
Investment Committee (IC)	Governance (Board)	<ul style="list-style-type: none"> Direct annual budgets and approve major CAPEX, acquisitions, mergers, and divestitures 	Annually
Nomination & Remuneration Committee (NRC)	Governance (Board)	<ul style="list-style-type: none"> Direct employee incentives for climate related KPIs 	Bi-annually
Executive Management Committee (EMC)	Management	<ul style="list-style-type: none"> Incorporates climate-related risks and climate strategy into EGCO's business strategy. Monitors the implementation of climate strategy, to align with strategic direction, areas of action, goals, targets, projects – and timely presentation to the Board Assigns responsibilities for climate strategy and risk management implementation 	Monthly
Risk Management Committee	Management	<ul style="list-style-type: none"> Integrates climate-related risks and opportunities assessment and management into risk management systems and processes Oversees the risk management of EGCO and routinely reports to the Risk Oversight Committee and the Board of Directors 	Monthly
Corporate Planning	Department	<ul style="list-style-type: none"> Identify comprehensive action plans, key performance indicators (KPIs), and target in alignment with EGCO climate strategy and review at least quarterly Coordinates with internal stakeholders for climate-related issues 	Quarterly

EGCO Functions	Function Level	Climate Risks & Climate Strategy Roles and Responsibilities	Meeting Frequency
		<ul style="list-style-type: none"> ■ Responsible for climate reporting and disclosure to external stakeholders ■ Assigns responsibilities for climate strategy and risk management implementation 	
Risk Assessment (RA)	Department	<ul style="list-style-type: none"> ■ Monitor and assess corporate risks, including climate-related risks ■ Reports to the RMC and ROC on a bi-annually basis ■ Conduct project assessment for all new projects 	Bi-annually
Asset Management	Department	<ul style="list-style-type: none"> ■ Oversees the overview of power plant operation (including Financial, Non-financial and Operation performance summary from power plants) ■ Monitors GHG emissions and climate related-risks and implementation of low carbon projects at each asset ■ Monitors asset performance at a managerial and central level and liaises with internal stakeholders on physical and transition risks ■ Conduct internal inspections and audit on-site 	Monthly
Business Development (BD)	Department	<ul style="list-style-type: none"> ■ Incorporates climate-related risks and opportunities into strategic business decisions ■ Integrates climate strategy into overall EGCO business strategy and in identifies business opportunities 	Monthly
Power Plant Management (PPM)	Department	<ul style="list-style-type: none"> ■ Oversees operational management including general management of each power plants and reporting of GHG emissions and climate-related risks at plant level ■ Responsible for the implementation of low carbon projects and climate-related risks management at operations ■ Conduct internal inspections and audit on-site 	Monthly
Power Plant	Department	<ul style="list-style-type: none"> ■ Responsible for driving sustainability and climate-related policies at operational assets ■ Track and report progress of implemented low carbon projects and climate-related risks management at operations against targets 	Monthly
Finance	Department	<ul style="list-style-type: none"> ■ Assesses financial implications of climate-related risks and opportunities ■ Integrates climate-related financial risks disclosures into mainstream reporting 	Monthly
Procurement	Department	<ul style="list-style-type: none"> ■ Responsible for selecting suppliers taking into considerations their contribution toward low-emission products and services 	Monthly

2.1 Climate-related KPIs and Incentives

EGCO implemented corporate-wide climate-related Key Performance Indicators (KPIs) and targets to drive climate action at all levels of the organization, from CEO to business unit managers, power plant teams and employees. These KPIs, approved by the Board of Directors, focus on carbon intensity reduction and increasing renewable energy generation. Additionally, each power plant has its own established KPIs to improve sustainability performance in areas such as GHG emissions reduction, energy efficiency improvement, and pollution control.

In 2022, EGCO announced its corporate targets and KPIs for reducing GHG emissions. These targets include a 10% reduction in carbon emission intensity by 2030 from a 2020 baseline and increasing power generation from renewable energy to 30% of overall capacity by 2030. Achieving these targets aligns with EGCO's long-term goal of becoming a Carbon Neutral Organization by 2040 and achieve Net Zero by 2050. The CEO, business unit manager and employee are provided with a monetary incentive associated with these targets and related KPIs, emphasizing the importance of executive engagement in driving climate action. In 2023, 28% of executive management remuneration was linked to climate-related considerations.

3. RISK MANAGEMENT AND CLIMATE STRATEGY

3.1 Climate-Related Risks and Opportunities Management

EGCO has made climate-related risks and opportunities management one of the company's primary goals. The Group identifies, assesses and manages climate-related risks (and opportunities) in accordance with the procedures defined in the company's **Risk Management Manual**, which was developed in line with the 2017 COSO-Enterprise Risk Management framework (COSO ERM). It is common for the Power sector that the climate-related risks are generally considered under Operational Risk (e.g. risk from water shortage caused by extreme climate conditions) and Compliance Risk (e.g. carbon tax). Climate change oversight has been allocated to the Corporate Sustainability Steering Committee which reports to the Corporate Governance and Sustainability Committee and incorporates performance against climate-related goals that are informed by climate risks and opportunities assessments into the company-wide KPIs to ensure a rigorous approach to the issue. EGCO has established key risk indicators (KRIs) which comprise the leading and lagging indicators in risk management and has also encouraged the employees to appropriately utilize these KRIs in their operation, along with monitoring and evaluating procedures, as well as periodic reporting to the Board and the Board Committees.

The Risk Assessment Division (RA) is responsible for monitoring, assessing, and reporting Corporate Risk Management Performance to the Risk Management Committee (RMC) and the Risk Oversight Committee (ROC) according to the EGCO's risk management policy. Risk mitigation actions and plans are established under the purview of ROC upon determination of risk level and probably impact towards earning loss, business interruption and reputation.

Figure 2 EGCO's Risk Management Process



3.2 Scenario Analysis

EGCO uses climate-related scenario analysis to inform the identification of climate risks. The assessment of climate-related risk scenarios is reviewed and categorized based on scenario patterns: the climate impact of key transitional and physical risks under specific scenarios. For this analysis, EGCO included the following inputs:

Table 2 Scenario Analysis Inputs

<p>Scope</p>	<ul style="list-style-type: none"> • For transition scenario analysis, group-wide impacts were assessed. For physical scenario analysis, a total of 25 assets were assessed, covering 89% of operations. • Considered the impacts of climate change on three aspects of EGCO's business operations: fossil-fuel-based generation, green energy generation, and supply chain (including upstream and downstream impacts). • Business operations and value chain impacts were assessed.
<p>Transition Scenarios¹</p>	<ul style="list-style-type: none"> • IEA Stated Policies Scenario (STEPS): a scenario that takes account of announced climate-related policies (e.g. the Paris Agreement, 'Nationally Determined Contributions'), but does not forcefully pursue decarbonization. Implied climate warming is between 2.5°C and 3.3°C.

¹ The transition scenario analysis conducted this year utilizes data from the IEA World Energy Outlook 2022.

	<ul style="list-style-type: none"> • IEA Announced Pledges Scenario (APS): a scenario which assumes all climate commitments made by governments around the world and longer-term net zero targets will be met in full and on time.
Physical Scenarios	<ul style="list-style-type: none"> • Baseline: based on historical data at EGCO's assets' locations • IPCC RCP 2.6: to assess physical phenomena that occur when the transition to low carbon society is incorporated, and Paris Agreement goals are met. • IPCC RCP 8.5: to demonstrate the physical impacts in the worst-case scenario where no measures are taken to combat climate change.
Time Horizons	<ul style="list-style-type: none"> • Short-term: 1-4 years • Mid-term: 5-10 years and represented by 2030 to estimate impacts and prioritize mitigation actions, while considering the expected lifetime of assets and PPAs • Long-term: over 10 years and represented by 2050 to align with EGCO's Net Zero target

The scenario analyses, for both transition and physical risks, are assessed qualitatively and quantitatively. In the qualitative assessment, the nature of each climate driver is assessed to determine whether the driver is a risk or opportunity. To understand the direction of change, likelihood, and magnitude of impacts on EGCO's business, EGCO uses scenario data from the International Energy Agency (IEA) to inform the assessment. For specific climate drivers that result in the highest risks and opportunities, EGCO quantitatively assesses the financial impact of these drivers on EGCO's business to better understand the magnitude of impacts and develop appropriate response measures.

3.2.1 Transition Scenario Analysis

The scenario analysis on transition risks and opportunities was intended to comprehensively analyze EGCO's exposure to potential impacts arising from a global transition to a low-carbon economy. Through internal stakeholder consultation, EGCO first identified transition drivers that were relevant to the business before conducting a semi-quantitative assessment and prioritization of transition drivers to EGCO's business and value chain under the selected scenarios. EGCO's scenario analysis intended to include both the upstream risks, such as carbon tax on suppliers, and downstream opportunities, such as decarbonization of the transportation sector, for a holistic understanding of the transition risks and opportunities that could impact EGCO. EGCO then quantified the potential financial impact of the carbon tax and expected renewable electricity growth (Annex A). Consequently, EGCO has developed response measures to mitigate expected risks and capture potential opportunities.

Table 3 Transition Scenario Analysis Results and Implications²

Transition Drivers	Potential Impact ³						Implications for EGCO	Response Measures	
	Fossil-Based Energy Generation		Green Energy Generation		Supply Chain				Financial Impact (Without Any Intervention by EGCO) ⁴
	2030	2050	2030	2050	2030	2050			
<p>Carbon Tax</p> <p>(Emerging Regulatory Risk)</p> <p><i>National carbon pricing regulations being introduced resulting in higher costs.</i></p>							<ul style="list-style-type: none"> • STEPS: operating costs increase by 9% in 2030 and 10% by 2050 • APS: operating costs increase by 5% by 2030 and 16% by 2050 (estimated carbon cost between 2022-2050 (28 years) is 986,574 million THB) • Cumulative Financial Impact is 151,789 million THB 	<ul style="list-style-type: none"> • Increasing OPEX for coal and natural gas electricity generation • Near-term all generation linked to PPA, merit order, and planned phase out (2025) • Green electricity will become more cost-competitive 	<ul style="list-style-type: none"> • Set up internal carbon price which reflects current or expected carbon pricing on operating and supplier jurisdictions • Engage with at-risk suppliers to reduce impact • Pursue opportunities in line with the Net Zero strategy (including no new investments in coal power plants and investments in CCUS at the KEGCO power plant in 2030) to reduce emissions and impacts. The estimated long-term (2050) cost of response is 63,903 million THB).
<p>Fossil Fuel-Based Generation Decline</p> <p>(Market Risk)</p> <p><i>Development of renewable power generation leading to</i></p>							<ul style="list-style-type: none"> • Not yet calculated 	<ul style="list-style-type: none"> • Analyze electricity markets in relevant jurisdictions in terms of renewable capacity and national decarbonization strategies. • Under the Baseline pathway (no new coal power plants), 	

² EGCO assesses the short-term impact of transition risks as part of its corporate risk management, which includes Government Policy, Legislative Change, and Compliance Risk Due to Climate Change. Additional information can be found in [the Sustainability Report](#) p.54

³ Significant changes in this year's results are due to changes in this year's selection of scenarios comprising STEPS and APS with the APS dataset being updated in 2022. In comparison to the previous year's selection of APS and SDS, this year's assessment is less stringent. Notable changes in results include a carbon tax in the green energy portfolio no longer being identified as an opportunity, fossil-fuel-based generation identified as a risk in the supply chain, less intensity in risks and opportunities from renewable electricity growth, and ROI on low-emissions technology no longer a risk in the supply chain with new opportunities for the green energy generation portfolio.

⁴ Percentage changes of financial impact are derived from several components. First, the changes in financial impact are based on data indicators from the IEA World Energy Model in each scenario at each time horizon. Second, a weighting is added to determine the relationship between data indicators and EGCO's business and value chain. Further details on financial impact quantification are available in Annex A.

Transition Drivers	Potential Impact ³						Implications for EGCO	Response Measures	
	Fossil-Based Energy Generation		Green Energy Generation		Supply Chain				Financial Impact (Without Any Intervention by EGCO) ⁴
	2030	2050	2030	2050	2030	2050			
<p><i>reduction in fossil-fuel based generation</i></p>								<p>near-term (2030) investments in CCUS installation to remove the majority of operational GHG emission at KEGCO (pilot plant) will be 692 million USD (or 24,098 million THB)</p> <ul style="list-style-type: none"> The long-term costs (2050) will be 1,835 million USD (or 63,903 million THB). 	
<p>Carbon Capture, Utilization and Storage (Technology Risk)</p> <p><i>The risk of delayed CCUS commercialization will reduce the ability of existing power plants to support GHG emissions reduction targets</i></p>							<ul style="list-style-type: none"> Not yet calculated 	<ul style="list-style-type: none"> Investments required for carbon capture, utilization, and storage (CCUS) increase CAPEX but also allow existing plants and fuel types to continue operation and generate revenue at low net emissions. Conducted preliminary assessment for Carbon capture at KEGCO (Nakhon Sri Thammarat, Thailand) and storage in geological formations. 	
<p>IMO Shipping Regulations (Current Regulatory Risk)</p> <p><i>Vessel compliance with new regulations results in higher freight costs that are reflected in higher supply and transportation costs</i></p>							<ul style="list-style-type: none"> Not yet calculated 	<ul style="list-style-type: none"> Demand for fossil-based energy may decrease due to increased OPEX (e.g. freight costs for coal and natural gas). Supply chain faces higher shipping costs To continue monitoring changes to IMO shipping regulations and choose shipping companies that comply with the new regulations. To consider potential suppliers that are located closer to EGCO's operations to reduce freight costs. 	
<p>Sustainability-Linked / Green Loans (Market Risk)</p>							<ul style="list-style-type: none"> Not yet calculated 	<ul style="list-style-type: none"> Fossil-based generation poses risks to access capital, especially in plants without CCUS due to sustainability Demonstrate clear and strong efforts to reduce carbon emissions, e.g. setting emission reduction targets, future capacity expansion in 	

Transition Drivers	Potential Impact ³						Implications for EGCO	Response Measures	
	Fossil-Based Energy Generation		Green Energy Generation		Supply Chain				Financial Impact (Without Any Intervention by EGCO) ⁴
	2030	2050	2030	2050	2030	2050			
<p><i>Increasing climate-related assessments/requirements to access capital</i></p>							<p>and climate-related requirements.</p>	<p>green and renewable business ventures.</p> <ul style="list-style-type: none"> Clearly identify limitations (e.g. long-term PPAs), and action items to mitigate GHG emissions generated. 	
<p>Exposure to Climate-related Litigation (Legal Risk)</p> <p><i>Increasing awareness of climate trends and enforcement of climate commitments</i></p>	Not assessed, no proxy indicator available						<ul style="list-style-type: none"> Not yet calculated 	<ul style="list-style-type: none"> Greater scrutiny and litigation on climate-related issues and disclosures 	<ul style="list-style-type: none"> Demonstrate clear climate strategy and actions in line with EGCO's climate commitments. Ensure truthfulness and transparency in climate disclosures.
<p>Shareholder Sentiment (Reputational Risk)</p> <p><i>Increased external stakeholder pressure to disclose climate-related activities.</i></p>	Not assessed, no proxy indicator available						<ul style="list-style-type: none"> Not yet calculated 	<ul style="list-style-type: none"> EGCO's reputation and access to capital may be impacted by stakeholder demands for climate action. EGCO's continued implementation and disclosure of the low carbon transition will positively impact EGCO's reputation, creating business and investment opportunities. 	<ul style="list-style-type: none"> Continue and improve EGCO's sustainability and climate journey disclosure through credible frameworks. Continue engaging with key stakeholders and policymakers to encourage transition to low carbon society.
<p>Renewable Electricity Growth (Energy Source Opportunity)</p> <p><i>Increased revenue from the growing demand of renewable electricity</i></p>							<ul style="list-style-type: none"> STEPS: opportunity in revenues of 9% by 2030 and 30% by 2022-2050 (28 year) (27,851 million THB) APS: opportunity in revenues of 15% by 2030 and 129% by 2050 	<ul style="list-style-type: none"> As electricity demand is expected to rise, expect growth in both fossil and renewable generation in short-medium terms. Under APS, the financial impact is the maximum potential assuming no ceiling on the capacity and demand, 	<ul style="list-style-type: none"> Increase production of RE to meet forecasted consumption demand in STEPs. The average annual cost associated with developing this opportunity is at least 12,326 million THB per year. Integrate national decarbonization strategies

Transition Drivers	Potential Impact ³						Implications for EGCO	Response Measures	
	Fossil-Based Energy Generation		Green Energy Generation		Supply Chain				Financial Impact (Without Any Intervention by EGCO) ⁴
	2030	2050	2030	2050	2030	2050			
<p>Electrification of Other Sectors (e.g. EV uptake) (Market Opportunity)</p> <p><i>Increase access to new markets and partnerships e.g. with transport sectors</i></p>							<ul style="list-style-type: none"> • Not yet calculated 	<p>which is dependent on electricity demand growth.</p> <ul style="list-style-type: none"> • Increased demand for green electricity as part of sectorial decarbonization plans, leading to additional revenues. • Transport electrification may rely heavily on green electricity & batteries, increasing the cost of shipping and thus OPEX. <ul style="list-style-type: none"> • As part of EGCO's climate existing strategy to increase revenue from low-carbon businesses and contribute to smart grid and smart city, EGCO may push for new business collaborations in public charging infrastructures to support growing demand for EVs. • EGCO may also register renewable energy plants with the relevant electrical authorities to issue RECs. 	
<p>ROI on Low-Emissions Technology (Market Opportunity)</p> <p><i>Investments in technical development (i.e. R&D in battery storage capacity)</i></p>							<ul style="list-style-type: none"> • Not yet calculated 	<ul style="list-style-type: none"> • Investments and technology developments e.g. energy storage, can help reduce cost and enhance the applicability of green electricity, such as energy storage. • Fuel distributors may increase the cost of shipping and OPEX <ul style="list-style-type: none"> • Feasibility studies for low-carbon technologies, including how it may be integrated with current and future EGCO business strategy. • Conducting piloting studies with relevant business partners to accelerate the commercial viability of low-emission technology, such as battery storage. 	
<p>Hydrogen Use (Market Opportunity)</p>							<ul style="list-style-type: none"> • Not yet calculated 	<ul style="list-style-type: none"> • CAPEX will be incurred to retrofit existing plants for hydrogen. • Increased shipping costs for suppliers <ul style="list-style-type: none"> • Conducted pre-feasibility study for hydrogen cofiring at BPU gas-fired power plant (Ratchaburi, Thailand). • Identify opportunities to supply renewable electricity to 	

Transition Drivers	Potential Impact ³						Implications for EGCO	Response Measures	
	Fossil-Based Energy Generation		Green Energy Generation		Supply Chain				Financial Impact (Without Any Intervention by EGCO) ⁴
	2030	2050	2030	2050	2030	2050			
Large scale deployment of hydrogen as a clean energy source								the production of green hydrogen.	

Risk Score Colour Key						
High Opp.	Mod. Opp.	Low Opp.	Neutral	Low Risk	Mod. Risk	High Risk













3.2.2 Physical Scenario Analysis

Acute and chronic risks of climate change from a variety of conditions, such as riverine flooding, cyclone/wind, water scarcity/water stress, coastal flooding and sea level rise, and extreme heat are evaluated as physical risk factors. EGCO prioritized 25 assets to be assessed against physical climate impacts, whereby each asset's location was reviewed and the related regional and country-level physical risks were assessed and evaluated. At this level, a “hot spot” site-level risk analysis was conducted, and EGCO seeks to expand this risk analysis further in the upcoming years. In this initial stage, EGCO has identified two core risk areas and quantified their potential financial impact to EGCO’s business under various scenarios. It is important to note that this risk and impact analysis is conducted under the assumption of **no intervention conducted** by EGCO. Through this, EGCO has developed short-term (less than 5 years) group-level strategic responses, covering all existing and new operations (100%), to address and mitigate these risks.

Figure 3 Physical Scenario Analysis Heat Map

Asset	Water Scarcity					Riverine Floods					Coastal Floods					Extreme Heat					Cyclone and Wind				
	BSL	RCP 2.6		RCP 8.5		BSL	RCP 2.6		RCP 8.5		BSL	RCP 2.6		RCP 8.5		BSL	RCP 2.6		RCP 8.5		BSL	RCP 2.6		RCP 8.5	
		2030	2050	2030	2050		2030	2050	2030	2050		2030	2050	2030	2050		2030	2050	2030	2050		2030	2050		
Coal																									
Philippines	High	Low	Low	Low	Low	Medium	Low	Low	Low	Low	High	Low	Low	Low	Low	High	Low	Low	Low	Low	High	Low	Low	Low	Low
Thailand	High	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A	High	Low	Low	Low	Low	High	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A
Hydro																									
Laos	High	Low	Low	Low	Low	High	Low	Low	Low	Low	N/A	N/A	N/A	N/A	Medium	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Natural Gas																									
Thailand	High	Low	Low	Low	Low	Medium	Low	Low	Low	Low	N/A	N/A	N/A	N/A	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
South Korea	High	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Medium	Low	Low	Low	Low	Low	Low	Low	Low	Low	High
USA	High	Low	Low	Low	Low	High	Low	Low	Low	Low	N/A	N/A	N/A	N/A	Medium	Low	Low	Low	Low	Low	Low	Low	Low	Low	High
Solar																									
Thailand	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	N/A	N/A	N/A	N/A	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	High
Wind																									
Australia	Medium	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Medium	Low	Low	Low	Low	Low	High	N/A	N/A	N/A	N/A
Thailand	High	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Medium	Low	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A
Taiwan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	High	Low	Low	Low	Low	High	Low	Low	Low	Low	High	Low	Low	Low	Low

Note: BSL – Baseline⁵ and N/A – not applicable

Baseline Hazard Rating		Forecast hazard rating	
High			Significant Increase
Medium			Moderate Increase
Low			Minimal Increase
No Hazard			Near Normal
N/A			Minimal Decrease
			Moderate Decrease
			Significant Decrease

⁵ Baseline scenario refers to **short term** scenario reflecting 1-4 year timeframe.

Table 4 Physical Risks Impact and Business Implications

Hazard	High Exposure Assets	Key Findings	Business Implications	Potential Financial Impact	Response Measures/Adaptation Plan (2022-2027)
Coastal Floods and Sea-Level Rise	<ul style="list-style-type: none"> Coal in the Philippines Coal in Thailand Wind in Taiwan 	<ul style="list-style-type: none"> In recent years, an increasing number of coastal floods due to sea level rise is expected to impact the Southeast Asia region, which may cause coastal floods in the future. Due to the location of EGCO's assets, the assets that may receive the highest impact are in Taiwan followed by the Philippines and Thailand. While baseline risk is already high for these assets, in the RCP8.5 scenario, this risk is expected to increase moderately to significantly in 2030 and 2050. 	<p>Physical Damages</p> <ul style="list-style-type: none"> Damage to coastal infrastructure, tools, and equipment and increase in associated costs. Loss of land due to permanent inundation <p>Business/Supply Chain Interruptions</p> <ul style="list-style-type: none"> Impact on accessibility Downstream transmission and distribution network to EGCO's sites can be susceptible to coastal disturbances and storm surges. <p>Health, Safety and Environment</p> <ul style="list-style-type: none"> Electrical safety hazard for solar farms 	<ul style="list-style-type: none"> Not yet calculated 	<ul style="list-style-type: none"> Coastal flood risk assessments to identify vulnerable key assets. Implement any additional mitigation measures
Extreme Heat	<ul style="list-style-type: none"> Natural Gas in Thailand Solar in Thailand 	<ul style="list-style-type: none"> Climate change projections indicate higher maximum temperatures and longer warm spell duration in the future. Projected to have significantly increased hazard impact on all asset types except Coal. The impact is particularly high for Solar and Natural Gas plants, where a moderate to significant increase is expected on top of an existing high-risk hazard. 	<p>Physical Damages</p> <ul style="list-style-type: none"> Reducing capacity/efficiency and potential shutdown of thermal power plants, such as coal and natural gas Solar panels/batteries quality degradation <p>Business/Supply Chain Interruptions</p> <ul style="list-style-type: none"> Increased downstream transmission losses. Reduced availability of water for cooling plants or fuel transportation, reducing output. Temperature of water discharged does not exceed regulation, 	<ul style="list-style-type: none"> Not yet calculated 	<ul style="list-style-type: none"> Provide training to employees to identify symptoms of heat stress and provide first aid. Analysis of two current mitigation measures of reducing generation capacity or increasing technology cost.

Hazard	High Exposure Assets	Key Findings	Business Implications	Potential Financial Impact	Response Measures/Adaptation Plan (2022-2027)
			<p>leading to business interruption/increased cost to ensure discharged water temperature to maintain generation capacity.</p> <p>Health, Safety and Environment</p> <ul style="list-style-type: none"> Potential discomfort due to heat stress leading to reduced efficiency and harm to employees 		
<p>Riverine Floods</p>	<ul style="list-style-type: none"> Hydro in Laos Natural Gas in Thailand 	<ul style="list-style-type: none"> It is observed that Assets located in Southeast Asia are more prone to Flood hazards. Climate projections indicate an increasing trend in extreme rainfall in this region. Significant change in extreme rainfall is projected under climate change scenarios, increasing hazard impact for EGCO's Hydro and Natural Gas plants from an already high-risk baseline. The increased rainfall may lead to riverine/urban drainage inundation and water logging in low-lying areas, potentially leading to operational and supply chain disruptions. 	<p>Physical Damages</p> <ul style="list-style-type: none"> Water damage to electrical/ electronic components, including PV panels, and increase in associated costs. Sediment load, reducing the capacity of dams and reservoirs and damage turbines. Erosion of foundation and collapse of supporting structure <p>Business/Supply Chain Interruptions</p> <ul style="list-style-type: none"> Riverine/urban drainage inundation and water logging in low-lying areas, potentially leading to operational and downstream disruptions. Interruption to hydropower plants -> inability to release water. Raw materials for biomass, stock may be reduced (cost or supply) due to flood <p>Health, Safety and Environment</p> <ul style="list-style-type: none"> Safety of employees 	<ul style="list-style-type: none"> Financial impacts on assets assessed are varied, but all see an increase in revenue loss due to flood risk. The financial impact of flood risk is most varied for a coal plant in the Philippines, with losses rising by 28% in 2030 under RCP2.6) but peaking in 2050 under RCP8.5 (46%) A solar plant in Thailand sees the steepest increase in losses in RCP 8.5 by 2050, with an increase of 69%. Total Financial Implication for 2021 – 2030 (9 years) is 2,047,957,538 THB 	<ul style="list-style-type: none"> Installed flood protection infrastructure. For instance, at a co-generation power plant in Thailand EGCO has installed flood walls with management costs of ~10 million THB. Evaluate existing spill management plans and measures at hydropower plants. Alternative feedstock sourcing for biomass plants to ensure supply Insurance

Hazard	High Exposure Assets	Key Findings	Business Implications	Potential Financial Impact	Response Measures/Adaptation Plan (2022-2027)
			<ul style="list-style-type: none"> Electrical safety hazard for solar farms Migration of hazardous material/waste from natural gas and coal-fired plants to the off-site areas, risk of contamination. 		
Cyclone and Wind	<ul style="list-style-type: none"> Coal in Thailand Coal in Philippines Wind in Taiwan 	<ul style="list-style-type: none"> It should be noted that in recent years an increasing number of cyclones have been reported to affect some parts of the Globe. Considering the locations of the assets, minimal to moderate change in cyclone hazard is expected. The future cyclone trend indicates a significant increasing trend in Southeast Asia and East Asia region. Assets in the Philippines and Taiwan are most exposed to cyclone and wind hazards and should expect a minimal to moderate increase in the risk and impact of the hazard. An increase in strong winds and cyclones may disrupt business operations due to damage to equipment. 	<p>Physical Damages</p> <ul style="list-style-type: none"> Damage to coastal infrastructure, particularly in plants in Southeast Asia and East Asian regions, tools and equipment, and increase in associated costs Damage to PV panels Loss of land due to permanent inundation <p>Business/Supply Chain Interruptions</p> <ul style="list-style-type: none"> Disruption of the value chain and associated revenue loss Supply chain - Unloading of coal during storm/cyclone in coastal plants <p>Health, Safety and Environment</p> <ul style="list-style-type: none"> Safety of employees 	<ul style="list-style-type: none"> Not yet calculated 	<ul style="list-style-type: none"> Comply with international best practices for wind load for design and construction of structures Implement monitoring mechanisms with regional meteorological agencies for the early warning system Develop a response mechanism to plan operations and take preventive steps to reduce the impact Insurance
Water Scarcity	<ul style="list-style-type: none"> Natural Gas in Thailand Coal in Thailand 	<ul style="list-style-type: none"> Climate change projections indicate minimal changes from the baseline on water scarcity across EGCO's assets. The water availability of water at the local level (e.g. at site) may be affected by water usage patterns in and around the site area. 	<p>Business/Supply Chain Interruptions</p> <ul style="list-style-type: none"> Reduced generation capacity in coal-fired due to water use in boilers, co-gen (due to steam 	<p>The expense to water scarcity in 2030 from a 2021 baseline:</p> <ul style="list-style-type: none"> Natural Gas Small Power Producer in Thailand expects 25.7% increase in RCP4.5⁶ and 36.7% increase under RCP8.5 	<ul style="list-style-type: none"> For plants at risk of water scarcity, such as EGCO Cogen, we have constructed water reserves to ensure water availability

⁶ RCP 4.5 is only used in quantifying financial impact of water stress due to data availability. All other physical risks assessments are based on RCP 2.6 and RCP 8.5.

Hazard	High Exposure Assets	Key Findings	Business Implications	Potential Financial Impact	Response Measures/Adaptation Plan (2022-2027)
	<ul style="list-style-type: none"> Solar in Thailand Wind in Thailand 	<ul style="list-style-type: none"> Across almost all of EGCO's assets, the baseline risk for water scarcity is medium to high. This risk continues to be a high-risk hazard to all of EGCO's assets. EGCO may need to consider conducting detailed site-level water risk assessments and water stewardship programs to reduce potential business disruptions. 	<ul style="list-style-type: none"> production) power plants due to municipal water protection Reputational risk during water-stressed periods Low water flows or high water temperatures reduce hydropower generation Water for solar panel cleaning <p>Health, Safety and Environment</p> <ul style="list-style-type: none"> Unavailability of water including for communal drinking and sanitation 	<ul style="list-style-type: none"> Natural Gas Independent Power Producer in Thailand expects 30.4% increase under RCP4.5 and 43.4% increase under RCP8.5. 	<ul style="list-style-type: none"> Conduct detailed water risk assessment to evaluate water risks on availability, infrastructure, and governance at asset level Explore opportunities to reuse recycled wastewater within the plant or from nearby communities

In the upcoming years, EGCO seeks to develop a deeper understanding of the risks posed to sites through site-specific physical climate risk assessments, focusing on key assets and key hazards. As part of ongoing efforts to mitigate and adapt to physical risks, EGCO considers appropriate insurance products to cover damages and losses due to potential natural hazards at given locations and has developed context-specific mitigation plans for each site.

EGCO has prioritized assets' water management as an integral part of physical risk mitigation and adaptation, which is further supported by the physical risks scenario analysis results where EGCO's assets have significant water-related risk exposure. To better understand the impact of these risks, EGCO has conducted demonstrational quantification of the financial impact of water scarcity and riverine floods in a scenario where no mitigation or adaptation efforts have been implemented by EGCO.

In implementing appropriate response measures for high water risk plants, such as at EGCO Cogen, EGCO has constructed water reservoirs to ensure year-round water supply and implemented fuel reservation plans to avoid operational disruptions. In flood risk areas, EGCO has implemented prevention action plans and emergency response measures, such as the construction of flood control structures. Additional adaptation efforts can be found in EGCO's sustainability reports.

3.3 Climate Strategy

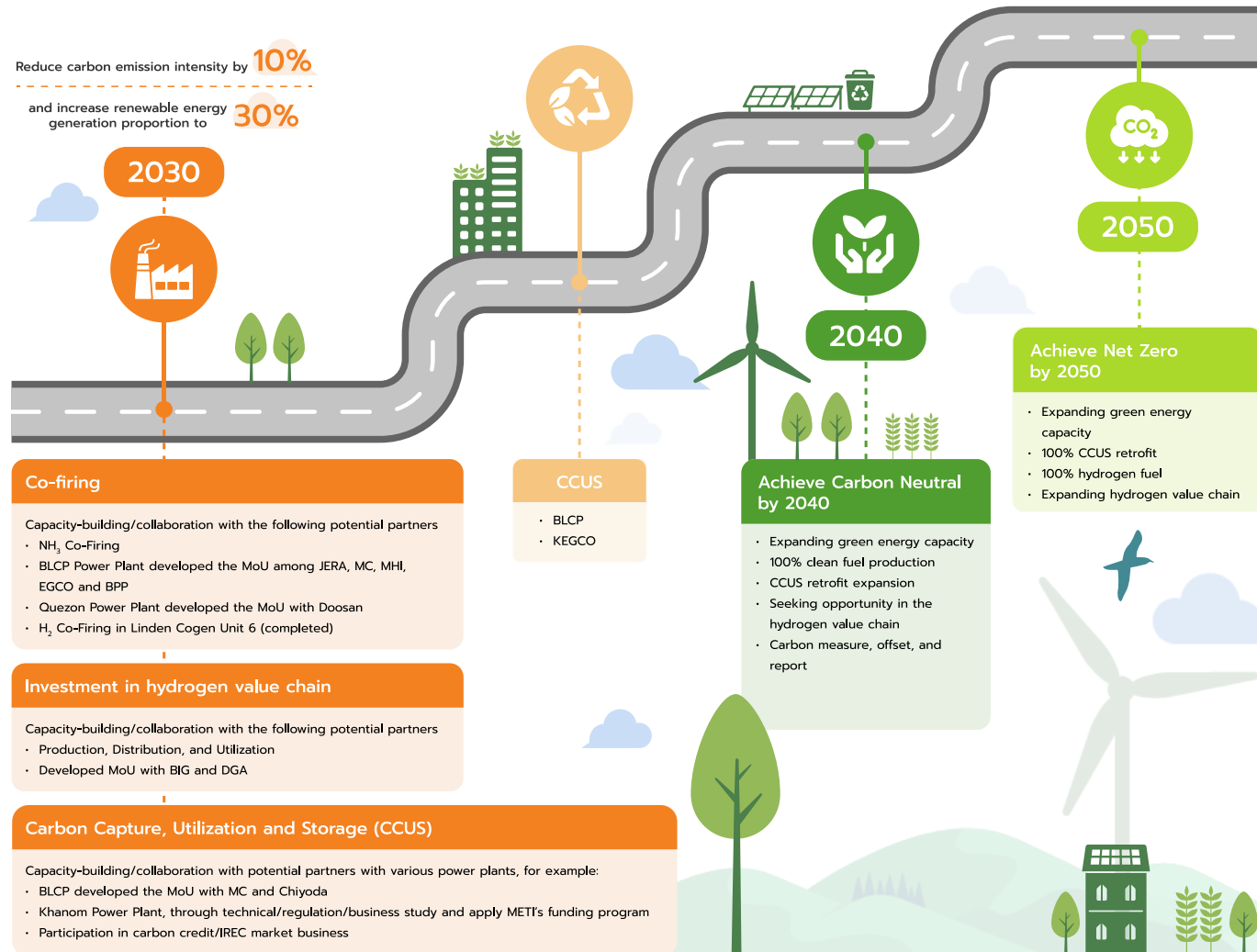
EGCO transforms the results of the climate risks and opportunities assessments into action plans and strategic frameworks. As a consequence of such assessments in recent years, EGCO has developed a climate strategy effective through 2021-2030 with a strategic focus on the achievement of the GHG goals and implementation of key elements to pursue stellar climate change management. With the EGCO 2030 Strategic Climate Vision: "Accelerating the Energy Transition to a Low Carbon Society with Superior Innovation", EGCO's goals are focused on three key strategic pillars:

- **Resilient Portfolio** is based on phasing out carbon-intensive electricity generation in favor of increasing renewable electricity generation, with a target of 30% installed renewable energy capacity and 10% carbon intensity reduction within 2030. As resilience is a key element of ensuring growth in a transition towards a low-carbon society, based on our transition risks and opportunity assessment, renewable electricity growth and decarbonization of downstream sectors are expected to be key opportunities that EGCO seeks to capture under this Pillar.
- **Accelerate the Development of Innovative Businesses** by increasing revenue from low-carbon businesses, while also planning to promote decentralized renewable generation. To enhance the Group's drive towards innovative business, EGCO has been investing in renewable energy projects such as hydrogen power generation and other alternative energy technology companies. As evident by EGCO's analysis of global technological trends and opportunities assessment, hydrogen use has been identified as a key strategic focus for this pillar. EGCO seeks to pursue clean hydrogen in 2 of EGCO's plants and explore further capacity expansion.
- **Enabling Programs** to support capacity building and stakeholder engagement through improving internal climate risk and opportunity management. This also contributes to an organization's climate reputation. EGCO has developed KPIs and targets for capacity building and engagement initiatives, expects all conventional power plants to use 100% Best Available Technology, and is dedicated to becoming a CDP A-List member.

Further details under these three core strategic pillars can be found on pages 82-90 of [EGCO's 2023 Annual Report](#). Additionally, further details on EGCO's climate lobbying efforts can be found in Annex B.

EGCO has also developed a net zero roadmap which outlines near-, medium-, and long-term key actions to achieve net zero ambitions and drive EGCO's climate strategy. EGCO will continue to employ this roadmap throughout upcoming years, to meet our goals.

Figure 4 EGCO's Net Zero Roadmap



The first phase, **Capacity Building**, continues up until 2030. Key activities in this phase consist of:

- No new investments in coal-fired power plants
- Readiness analysis and feasibility studies on EGCO's assets for CCS retrofitting and co-firing.
- Purchase carbon credits to prevent an increase in emissions during the first phase.
- Expand renewable electricity generation portfolio to 30% by 2030.

The second phase, **Carbon Neutral**, details EGCO's key actions in the mid-term between 2030 and 2040. Key activities include:

- Expand further green energy capacity and renewable energy generation
- Invest in permanent carbon removal through expanding CCS retrofitting
- Utilize 100% clean fuel
- Seek opportunities in the hydrogen value chain
- Achieve carbon neutral status through offsetting where necessary to compensate for residual GHG emissions to reach the yearly target

The third phase, **Net Zero**, lays out EGCO's priorities by 2050 in the long term to achieve the Net Zero target.

- Green energy capacity and renewable energy generation continuously expanded
- Invest in permanent carbon removal through expanding CCS retrofitting to 100%
- Utilize 100% hydrogen as a fuel source
- Expand the hydrogen value chain

3.3.1 *Internal Carbon Price*

EGCO has set a company-wide internal carbon price of 20.4 USD/t CO₂e (approximately 710 THB/t CO₂e) applicable to scope 1 emissions. The internal carbon price was set using the shadow pricing method and guides EGCO in the quantification of financial risks and opportunities arising from climate change. Quantification of climate risks and opportunities is integral to EGCO's climate ambition and is a driver of EGCO's climate strategy, enabling EGCO to make informed decisions that contribute towards driving low-carbon investments and seizing low-carbon opportunities while increasing resilience against climate risks.

4. METRICS AND TARGETS

4.1 Climate-Related Metrics

EGCO is committed to supporting a managed transition in line with the Thailand NDC and Paris Agreement and aspires to be a major sustainable Thai energy company committed to environmental protection and social development. With its "Cleaner, Smarter, Stronger" business model, EGCO aims for sustainable growth. Its medium-term targets include increasing renewable energy generation to 30% and reducing carbon dioxide emissions intensity by 10% by 2030. EGCO's long-term goal is to achieve net-zero emissions by 2050. By reporting climate-related metrics and targets, EGCO builds trust with stakeholders and demonstrates its dedication to a sustainable future.

The GHG inventory was developed in alignment with the GHG Protocol⁷. This year's reporting boundary covers EGCO's headquarters and 14 power plants under EGCO's control. Scope 3 assessments cover all relevant categories (out of 15 categories defined in the GHG Protocol) and are available in Annex C.

Table 5 GHG Emissions Data

Performance	Unit	2020	2021	2022	2023
Scope 1 Direct GHG emissions	Metric tons CO ₂ e	6,318,747	6,231,557	6,110,581	5,679,827
Scope 2 Energy indirect GHG emissions (Location-based)	Metric tons CO ₂ e	6,749	8,698	7,810	10,448
GHG emissions intensity (Scope 1 & 2)	Metric tons CO ₂ e per MWh	0.48	0.50	0.46	0.45

Table 6 Risk and Opportunity Metrics

Opportunity Metrics	Unit	2020	2021	2022	2023
Climate-related Opportunities					
Assets aligned with climate-related opportunities	Asset(s)	N/A	9	9	9
	% of all assets	N/A	64	64	64
Capital expenditure, financing, or investment deployed towards climate-related opportunities	MTHB	12,672	12,491	8,301	11,592
Energy-related Opportunities					
Total renewable energy generated	Megawatts (MW)	1,042.5	1,050.3	1,077.2	1435.0
Share of renewable energy generation compared to total energy generation	%	19.2	19.0	18.0	20.4

⁷ Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004)

Risk Metrics	Unit	2020	2021	2022	2023
Climate-related Risks					
Assets vulnerable to climate-related transition risks	Asset(s)	N/A	5	5	5
	% of all assets	N/A	36	36	36
Assets vulnerable to climate-related physical risks	Asset(s)	N/A	14	14	14
	% of all assets	N/A	100	100	100
Capital expenditure, financing, or investment deployed towards climate-related risks	MTHB	N/A	N/A	N/A	10
Water-Related Risks					
Production plants in water-stressed areas	%	0	0	0	0
Cost of goods sold (COGS) in water-stressed areas	%	0	0	0	0

Table 7 IFRS S2 Sector-Specific Metrics⁸

Topic	Code	Metric	Performance 2023
Greenhouse Gas Emission	IF-EU-110a.1	Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations	N/A. Thailand does not have emissions limiting regulations.
		Gross global Scope 1 emissions, percentage covered under emissions-reporting regulations	N/A. Thailand does not have emissions reporting regulations.
	IF-EU-110a.2	Greenhouse gas (GHG) emissions associated with power deliveries ^(a)	9,774,509 metric ton CO ₂ e
	IF-EU-140a.1	Total water withdrawn, percentage in regions with High baseline water stress	0 m ³ (0%)
		Total water withdrawn, percentage in regions with Extremely High baseline water stress	0 m ³ (0%)
		Total water consumed; percentage in regions with High baseline water stress	0 m ³ (0%)
		Total water consumed, percentage in regions with Extremely High baseline water stress	0 m ³ (0%)
Water Management	IF-EU-140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	0 ^(b) incidents
	IF-EU-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	Refer to 3.2.2 Physical Scenario Analysis.

⁸ Refers to IFRS S2 guidance for the Electricity Utilities & Power Generator sector.

Topic	Code	Metric	Performance 2023
End-Use Efficiency & Demand	IF-EU-420a.2	Percentage of electric load served by smart grid technology	N/A
	IF-EU-420a.3	Customer electricity savings from efficiency measures, by market	N/A
Nuclear Safety & Emergency Management	IF-EU-540a.1	Total number of nuclear power units, broken down by results of most recent independent safety review	N/A. EGCO does not have nuclear power units.
	IF-EU-540a.2	Description of efforts to manage nuclear safety and emergency preparedness	N/A. EGCO does not have nuclear power units.
Grid Resiliency	IF-EU-540a.1	Number of incidents of non-compliance with physical or cybersecurity standards or regulations	N/A
	IF-EU-540a.2	System Average Interruption Duration Index (SAIDI)	N/A
		System Average Interruption Frequency Index (SAIFI)	N/A
		Customer Average Interruption Duration Index (CAIDI), inclusive of major event days	N/A
Activity Metric	IF-EU-000.A	Number of: (1) residential, (2) commercial, and (3) industrial customers served	18
	IF-EU-000.B	Total electricity delivered to: (1) residential, (2) commercial, (3) industrial, (4) all other retail customers, and (5) wholesale customers	1,018,480 MWh
	IF-EU-000.C	Length of transmission and distribution lines	0 km EGCO does not own any transmission and distribution lines.
	IF-EU-000.D	Total electricity generated, percentage by major energy source, percentage in regulated markets	Total electricity generated: 12,088,289 MWh Electricity generated by source: Coal: 2,189,730 MWh (17.38%) Natural gas: 9,265,510 MWh (77.60%) Wind: 475,427 MWh (3.77%) Solar: 110,877 MWh (0.88%) Biomass: 46,745 (0.37%)
	IF-EU-000.E	Total wholesale electricity purchased	0 MWh

Disclosure reference: [IFRS-S2-IBG – Issued IFRS Standards](#)

Remarks:

(a) Emissions associated with power deliveries calculated according to the methodology established in “EPS Metric D-3: Retail Electric Deliveries”, contained in the Electric Power Sector Protocol for the Voluntary Reporting Program, June 2009, Version 1.0 provided by The Climate Registry, as recommended in IFRS S2 Appendix B.

(b) Number of incidents of non-compliance associated with water quality permits, standards and regulations included under the Environmental Violations metric available in EGCO’s Environmental Performance Report.

Additional climate-related metrics are available in [EGCO’s Environmental Performance Report](#). As EGCO’s climate journey progresses, further metrics will be disclosed.

4.2 Climate-Related Targets

EGCO sets climate-related targets that are applicable group-wide and covers the seven greenhouse gases identified in the Kyoto Protocol including CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃. In 2023, EGCO committed to seek target validation from the Science Based Targets initiative (SBTi) for near-term and net zero targets covering scope 1, 2, and 3 emissions and is in the process of updating our targets to reflect SBTi requirements. We also plan to validate our targets and target setting methodology with a third-party.

Table 8 Climate-Related Targets

Emissions-Related Targets	
<ul style="list-style-type: none"> • Scope 1 and 2 Targets: <ul style="list-style-type: none"> ■ Reduce Scope 1 and Scope 2 emissions intensity by 10% (Metric tons CO₂e per megawatt-hour (MWh)) by 2030 from 2020 baseline ■ Achieve carbon neutrality by 2040 and net zero by 2050 for Scope 1 and Scope 2 emissions • Scope 3 Targets: <ul style="list-style-type: none"> ■ Reduce absolute Scope 3 emissions by 50% by 2050 from the 2020 baseline. 	
Other Climate-Related Targets	
<ul style="list-style-type: none"> ■ No new investments in coal-fired power plants ■ Increase the portion of renewable energy to 30% of the total generating capacity by 2030 ■ Increase the utilization of clean fuel to 100% by 2040 and replace with hydrogen fuel and CCUS retrofit by 2050 	

Remark: Scope 1+2 combined base year emissions (2020) is 6.3 million metric tons CO₂e. (Target scope and related emissions reduction of scope 1&2 represent 100% of base year emissions)

Scope 3 base year emissions (2020) is 1.2 million metric tons CO₂e.

Table 9 GHG Emissions Performance Against Targets

Targets	Target Baseline	Units	Performance Against Targets			
			2020	2021	2022	2023
Reduce Scope 1 and Scope 2 emissions intensity by 10% (Metric tons CO ₂ e per megawatt hour (MWh)) by 2030 from 2020 baseline	0.48	Metric tons CO ₂ e/MWh	0.48	0.50	0.46	0.45
		% compared to target baseline	0%	4.17% increase	4.17% decrease	6.25% decrease

Targets	Target Baseline	Units	Performance Against Targets			
			2020	2021	2022	2023
Reduce scope 3 emissions by 50% by 2050 from 2020 baseline	480,040	Metric tons CO ₂ e/MWh	480,040	52,732	1,377,791	1,005,895
		% compared to target baseline	0%	89.02% increase	1121.6% increase	109.54% increase

In addition to our internal targets, EGCO conducts climate lobbying practices with external organizations. We assess our climate lobbying practices against the Global Standard on Responsible Climate Lobbying with the aim of achieving goals in line with Thailand's NDC and the Paris Agreement (Annex B).

5. IFRS S2 CONTENT INDEX

IFRS S2 Recommendation	EGCO's Public Disclosure
Governance - Disclose the governance processes, controls, and procedures used to monitor, manage and oversee climate-related risks and opportunities.	
a) Disclose the governance body(s) or individual(s) responsible for oversight of climate-related risks and opportunities.	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Governance (PDF page 3-5) ■ Annual Report 2023 – Climate Strategy (PDF page 124-129) ■ Sustainability Management Structure
b) Disclose management's role in the governance processes, controls, and procedures used to monitor, manage, and oversee climate-related risks and opportunities.	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Governance (PDF page 3-5) ■ Annual Report 2023 – Risk Governance Structure (PDF page 52-54) ■ Sustainability Management Structure
Strategy - Disclose the strategy for managing climate-related risks and opportunities.	
a) Disclose the climate-related risks and opportunities that could reasonably be expected to affect the entity's prospects	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Scenario Analysis (PDF page 7-19)
b) Disclose the current and anticipated effects of those climate-related risks and opportunities on the entity's business model and value chain.	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Scenario Analysis (PDF page 7-19); Climate Strategy (PDF page 19-21) ■ Annual Report 2023 – Emerging Risks (PDF page 60); Risk from Raw Water Shortage and Fuel Shortage Risk (PDF page 56); Climate Strategy (PDF page 124-129) ■ Adaptation Plan to Climate Risk
c) Disclose the effect of those climate-related risks and opportunities on the entity's strategy and decision-making, including information about its climate-related transition plan.	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Scenario Analysis (PDF page 7-19); Climate Strategy (PDF page 19-21) ■ Annual Report 2023 – Emerging Risks (PDF page 60), Climate Strategy (PDF page 124-129)
d) the effect of those climate-related risks and opportunities on the entity's financial position, financial performance, and cash flows for the reporting period, and their anticipated effects on the entity's financial position, financial performance, and cash flows over the short,	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Scenario Analysis (PDF page 7-19); Climate Strategy (PDF page 19-21)

IFRS S2 Recommendation	EGCO’s Public Disclosure
medium, and long-term, taking into consideration how those climate-related risks and opportunities have been factored into the entity’s financial planning.	
e) Disclose the climate resilience of the entity’s strategy and business model to climate-related changes, developments, uncertainties, taking into consideration the entity’s identified climate-related risks and opportunities.	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Scenario Analysis (PDF page 7-19); Climate Strategy (PDF page 19-21)
<p>Risk Management – Disclose the processes to identify, assess, prioritize, and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the overall risk management process.</p>	
a) Disclose the processes and related policies the entity uses to identify, assess, and prioritise, and monitor climate-related risks	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Climate-related Risks and Opportunities Management (PDF page 6-7)
b) Disclose the processes the entity uses to identify, assess, prioritize and monitor climate-related opportunities, including information about whether and how the entity uses climate-related scenario analysis to inform its identification of climate-related opportunities	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Climate-related Risks and Opportunities Management (PDF page 6-7) ■ Annual Report 2023 – Risk Governance Structure (PDF page 52-54); Risk Management Philosophy and Policy (PDF page 53); Assessing Corporate Key Risks, Emerging Risks and Risks Mitigation (PDF page 54-59)
c) Disclose the extent to which, and how, the processes for identifying, assessing, prioritizing and monitoring climate-related risks and opportunities are integrated into and inform the entity’s overall risk management process.	
<p>Metrics & Targets - Disclose performance in relation to climate-related risks and opportunities, including progress towards any climate-related targets and targets required to be met by law or regulation.</p>	
a) Disclose the information relevant to the cross-industry metric categories, including greenhouse gases, transition risks, physical risks, opportunities, capital deployment, internal carbon price, and remuneration.	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Climate-Related Metrics (PDF page 22-24) ■ Performance Data 2020-2023 – Environment
b) Disclose industry-based metrics that are associated with particular business models, activities or other common features that characterize participation in an industry	
c) Disclose the targets set by the entity, and any targets it is required to meet by law or regulation, to mitigate or adapt to climate-related risks or take advantage of climate-related opportunities, including metrics used by the governance body or management to measure progress towards these targets.	<ul style="list-style-type: none"> ■ IFRS S2 Disclosure 2024 – Climate-Related Targets (PDF page 24-25) ■ Annual Report 2023 – Business Targets (PDF page 18); Climate Strategy (PDF page 124-129)

ANNEX A: FINANCIAL IMPACT QUANTIFICATION OF CLIMATE-RELATED RISKS AND OPPORTUNITIES

Risks Driven by Regulations

Climate change is one of the most significant global challenges. Due to the nature of our business, climate change can impact EGCO Group's operation in many dimensions. For transition risk regarding policy, regulation, and technological changes, a carbon tax can affect the Company's strategy and investment directions.

In order to respond to climate change, EGCO prepared this enforcement through the EGCO Group 2030 Climate Strategy. The strategy covers 3 main aspects, namely resilient portfolio (increase investment in renewable energy business), innovative business (supporting low-carbon ventures and clean energy innovations), and enabling programs (focusing on internal operations, certifications, and memberships).

The strategy focuses on (a) No new investment in coal-fired power plants and increasing renewable energy, (b) exploring hydrogen opportunities and developing new ventures, and (c) expanding investments and fostering innovation for funding prospects.

Risks Driven by Change in Physical Climate Parameters

Physical climate change related to water risks, i.e. water shortage and flooding, significantly affects the company's business continuity. EGCO has implemented risk control measures including securing the insurance to cover all risks to assure loss from damages in unexpected cases, assess water-related risks by using the World Resources Institutes' Aqueduct Water Risk Atlas, conduct water stress scenarios analysis and prepare mitigation plans, which is appropriate for each power plant.

Opportunities Arising from Climate Change

To enhance the Company's market opportunity and diversify the investment following long-term energy demand, EGCO Group identified renewable electricity (RE) growth as one of the most significant opportunities resulting from climate change. To produce additional RE to meet forecasted consumption demand in a business-as-usual scenario (i.e. STEPS), the associated increase in capital and O&M costs between 2022-2050 (28 years) was quantified to be 345,142 million THB. Therefore, the average annual cost associated with developing this opportunity is at least 12,326 million THB per year. As EGCO Group transitions into a low-carbon economy, the opportunity for RE growth will increase as well as the cost.

ANNEX B: GLOBAL STANDARD ON RESPONSIBLE CLIMATE LOBBYING

EGCO, as a leading company in Thailand, recognize the significance of shaping climate-related policies and regulations to align with our business interests. To ensure our climate lobbying efforts are conducted responsibly and in line with global best practices, EGCO has established a set of framework indicators. These indicators serve as a guide for our lobbying activities and demonstrate our dedication to engaging transparently and ethically in discussions surrounding climate policies.

No.	Framework Indicator	EGCO Actions	Reference
1.	Make a public commitment to align all of its climate change lobbying with the goal of restricting global temperature rise to 1.5°C above pre-industrial levels	<p>EGCO is committed to support a managed transition in line with the Thailand NDC and Paris Agreement.</p> <p>EGCO is also committed to become Net Zero by 2050 with the goal of restricting global temperature rise to 1.5°C above pre-industrial levels.</p>	IFRS S2 – Metrics and Targets
2.	Apply the scope of this commitment to all of its subsidiaries and business areas, and all operational jurisdictions	<p>Climate Strategy Framework and other ESG-related policies are applied for all types of power businesses conducted by EGCO.</p> <p>Reporting of EGCO’s net zero positioning covers all subsidiaries and jurisdictions where EGCO has operations.</p>	
3	Publicly commit to taking steps to ensure that the associations, alliances and coalitions of which it is a member conduct their climate change lobbying in line with the goal of restricting global temperature rise to 1.5°C above pre-industrial levels	EGCO is an active member of various groups and has made public commitments to adhere to the policies and roadmaps established by these groups and the government. These commitments are aligned with Thailand’s NDC and the Paris Agreement.	IFRS S2 – Metrics and Targets

No.	Framework Indicator	EGCO Actions	Reference
4	Assign responsibility at board level for oversight of its climate change lobbying approach and activities	The board is responsible for approving climate strategy including climate lobbying policies, overseeing progress, and appointing the Corporate Governance and Sustainability Committee which is responsible for environmental stewardship and addressing climate change. Apart from that, EGCO has assigned a Board Director, Mr. Thepparat Theppitak, to sit as an Association President for the Electricity Supply Industry Association of Thailand (TESIA) and a President of Thailand Business Council for Sustainability Development (TBCSD).	IFRS S2 - Governance
5	Assign responsibility at senior management level for day-to-day implementation of its climate change lobbying policies and practices	At the senior level, individuals are assigned the responsibility of developing and implementing effective strategies, coordinating with relevant stakeholders, and ensuring that the organization's lobbying activities are aligned with its climate goals. In line with this, EGCO has designated two senior management personnel, Dr.Worapong Sinsukthavorn and Mr. Nakul Rakpanya, to serve as Director and Treasurer, and Director and Secretary, respectively, for their roles as Association President within the Electricity Supply Industry Association of Thailand (TESIA).	IFRS S2 - Governance
6	Establish an annual monitoring and review process to ensure that all of its direct and indirect climate change lobbying activities across all geographies are consistent with the goal of restricting global temperature rise to 1.5°C above pre-industrial levels	EGCO has established procedures to evaluate, supervise, and determine the compatibility of its public policy engagements and lobbying efforts with the objectives of the Paris Agreement. The climate change lobbying activity is reviewed by the board in the board review and monitoring process before the decision. This evaluation encompasses both our direct lobbying activities and those conducted through our trade associations. However, currently, our financial contributions are restricted to trade associations only.	https://sustainability.egco.com/en/reporting-center/performance-data IFRS S2 – Risk Management and Climate Strategy (3.3 Climate Strategy)

No.	Framework Indicator	EGCO Actions	Reference
7.	Establish a process for engaging with stakeholders related to setting and reviewing its climate change lobbying policies, positions and activities	EGCO and stakeholders participated in focus group meetings under the Carbon Capture Utilization and Storage Technology Roadmap (CCUS TRM), which is a climate lobbying activity to serve Thailand's commitment to UN COP26 which is Carbon Neutral by 2050 and Net Zero Greenhouse Gas Emissions by 2065, to collect and analyze important data as well as convene brainstorming sessions with relevant stakeholders to gather useful information for the roadmap.	https://www.youtube.com/watch?v=HZVrWp_mHkQU IFRS S2 - Risk Management and Climate Strategy
8.	Establish a clear framework for addressing misalignments between the climate change lobbying positions adopted by the associations, alliances and coalitions of which it is a member and the goal of restricting global temperature rise to 1.5°C above pre-industrial levels	EGCO actively participates in association gatherings to encourage dialogues and guarantee that the actions taken by the organization are consistent with Thailand's NDC and the Paris Agreement. As part of this commitment, EGCO has implemented a transparent framework to address any inconsistencies that may arise between the climate change policy positions of trade associations and our stance on climate issues.	IFRS S2 - Risk Management and Climate Strategy
9.	Publish a detailed annual review covering the company's assessment and actions related to the 1.5°C-alignment of: (a) its own climate change lobbying activities; (b) the climate change lobbying activities of the associations, alliances, coalitions or thinktanks of which it is a member or to which it provides support	As a member of various climate change lobbying organizations, EGCO regularly monitors and reviews the Thailand NDC and Paris Agreement. They collaborate with government entities to develop a roadmap for addressing climate change effectively.	https://www.youtube.com/watch?v=HZVrWp_mHkQU

No.	Framework Indicator	EGCO Actions	Reference
10.	Recognise the existence of and report on action to address any misalignments between its climate change lobbying and/or the climate change lobbying activities of its trade associations, coalitions, alliances or funded thinktanks and the goal of limiting global temperature rise to 1.5 °C above pre-industrial levels	Given EGCO's extensive membership in various organizations and alliances, the company leverages the commitments established within these groups to review, compare, and assess its activities for any potential misalignments. If any misalignments are identified, EGCO initiates further discussions within the respective group to address and resolve the discrepancies to ensure a cohesive approach toward their climate change lobbying efforts.	IFRS S2 - Risk Management and Climate Strategy
11.	Create or participate in coalitions that have the specific purpose of lobbying in support of the goal of restricting global temperature rise to 1.5°C above pre-industrial levels	EGCO has participated in several meetings to discuss environmental policies and the changing global climate in collaboration with the government, with the aim of developing a project that will lead Thailand towards carbon neutrality and net zero. This initiative is also in line with the commitments declared at the UN Climate Change Conference of the Parties, specifically COP26.	IFRS S2 - Risk Management and Climate Strategy
12.	Publicly disclose, for all geographies, its membership of, support for and involvement in all associations, alliances and coalitions engaged in climate change-related lobbying	<p>EGCO has disclosed its membership and all relevant associations engaged in lobbying activities about climate change on its official website as follows:</p> <p>Climate policy positions and activities of trade associations:</p> <ol style="list-style-type: none"> 1. International Council on Large Electric Systems (CIGRE) 2. United Nations Global Compact (UNGC) 3. Global Compact Network Thailand (GCNT) 4. Thailand Carbon Neutral Network (TCNN) <p>Climate-related direct lobbying activities: None</p>	https://sustainability.egco.com/en/reporting-center/performance-data

No.	Framework Indicator	EGCO Actions	Reference										
13.	Publicly disclose, for each of these organisations: (a) how much it pays to them on an annual basis; (b) those organisations where it sits on the board or plays an active role in committees or other activities related to climate change	<p>Contributions to each Organization</p> <table border="1"> <thead> <tr> <th data-bbox="878 304 1245 384">Trade Association</th> <th data-bbox="1245 304 1538 384">Contributions 2023 (THB)</th> </tr> </thead> <tbody> <tr> <td data-bbox="878 384 1245 464">International Council on Large Electric System</td> <td data-bbox="1245 384 1538 464">24,034</td> </tr> <tr> <td data-bbox="878 464 1245 512">United Nations Global Compact</td> <td data-bbox="1245 464 1538 512">525,000</td> </tr> <tr> <td data-bbox="878 512 1245 560">Global Compact Network Thailand</td> <td data-bbox="1245 512 1538 560">No monetary contributions</td> </tr> <tr> <td data-bbox="878 560 1245 608">Thailand Carbon Neutral Network</td> <td data-bbox="1245 560 1538 608">No monetary contributions</td> </tr> </tbody> </table>	Trade Association	Contributions 2023 (THB)	International Council on Large Electric System	24,034	United Nations Global Compact	525,000	Global Compact Network Thailand	No monetary contributions	Thailand Carbon Neutral Network	No monetary contributions	https://sustainability.egco.com/en/reporting-center/performance-data
Trade Association	Contributions 2023 (THB)												
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Thailand Carbon Neutral Network	No monetary contributions												
14.	Publicly disclose its overall assessment of the influence that its climate lobbying has had on (a) supporting ambitious public climate change policy; (b) the company's ability to deliver its own corporate transition strategy	<p>EGCO, through its membership in various organizations promoting climate lobbying, ensures a clear roadmap towards achieving carbon neutrality. This objective is reinforced by the company's own policy and the implementation of projects within the organization, such as the utilization of Carbon Capture, Utilization, and Storage (CCUS). These initiatives align with Thailand's commitment to the UN COP26 target of becoming Carbon Neutral by 2050 and Net Zero by 2065. Active participation in such endeavors empowers the company to develop climate-related policies that align with its long-term objectives, enhancing preparedness, optimizing investments, and ultimately attaining carbon neutrality.</p>											

ANNEX C: SCOPE 3 GHG EMISSIONS 2023

Performance	Emissions (Metric tons CO ₂ e)	Methodology
Other indirect (scope 3) GHG emissions	1,005,895	The analysis was conducted within the scope of the headquarters and encompassed 14 power plants under EGCO's control. The calculation methodology and standards utilized included the Greenhouse Gas Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard, ISO14064-1:2018 Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals, and the IPCC Guidelines for National Greenhouse Gas Inventories, 2006.
Category 1 Purchased Goods and Services	9,397	The data includes only the top 5 goods and services purchased from the total spending items listed in the year 2022. The method employed in this calculation is the spend-based approach, utilizing the spend value of each item. These goods and services are classified based on the United States Environmentally Extended Input-Output model (USEEIO). Their associated emission factors are used by multiplying the spend value of each item by its respective emission factor.
Category 2 Capital Goods	607	In this category, EGCO considers the top spending goods that depreciate and have a minimum spending requirement of 5,000,000 THB. The methodology used for calculation is similar to category 1, purchased goods and services. EGCO employs a spend-based approach, where the emission factor is multiplied by the respective classified item. It's important to note that the spending value in this category is significantly higher compared to the items listed in Category 1. Consequently, this leads to higher emissions being emitted.
Category 3 Fuel- and Energy- Related Activities	984,336	Emissions are calculated specifically focusing on the well-to-tank aspect, which covers emissions generated during the extraction, production, refining, and transportation of the fuel before it reaches EGCO's operations. The calculation methodology employed is the Average Data Method, considering fuel-and-energy-related items like natural gas, diesel oil, husk, and electricity. To ensure accuracy, well-to-tank emission factors from the Department for Environment, Food and Rural Affairs in the United Kingdom (DEFRA) are used in the calculation.
Category 4 Upstream Transportation	2,225	The methodology used in this category is a distance-based approach, considering both well-to-tank and tank-to-wheel emissions for products purchased in 2022. The distance is determined from EGCO's tier 1 suppliers to the company of powerplants listed in the scope of calculation, and transportation modes are classified as per DEFRA categories. The emissions associated with transportation are calculated by converting the distance into fuel consumption using the Net Calorific Value (NCV) obtained from the Department of Alternative Energy Development and Efficiency (DEDE) and multiplying them by the relevant emission factors.
Category 5 Waste Generated	7,129	Emissions are solely accounted for waste, as EGCO does not send any wastewater to third parties for treatment. Consequently, there are no Scope 3 emissions associated with wastewater. For the calculation of waste emissions, the Average Data Method is employed. The total annual weight of waste generated from power plants and EGCO headquarters is collected and classified based on the treatment methods listed in DEFRA. For waste that undergoes multiple treatment methods, the method with the highest ratio, landfilling, is used to determine emissions.
Category 6 Business Travel	235	This calculation considers emissions solely from employee transportation for business activities, excluding hotel stays.

Performance	Emissions (Metric tons CO ₂ e)	Methodology
		The methodology used is a spend-based approach, converting expenditure into emissions using the IPCC volume 2 (2006) emission factor and United States Environmentally Extended Input-Output model (USEEIO v2.0).
Category 7 Employee Commuting	1,892	The methodology employed for this calculation is a distance-based approach. It involves converting distances gathered through a commuting survey into emissions using emission factors sourced from the Department for Environment, Food and Rural Affairs (DEFRA).
Category 8 Upstream Leased Assets	0	The methodology employed for this category is the Average Data Method. The emissions in this category are estimated by considering the area utilized by EGCO's power plants and converting it into electricity consumption based on the IEA Emission Factors.
Category 9 Downstream Transportation	N/A	Excluded. EGCO already included electricity-related emissions under Scope 1
Category 10 Processing of Sold Products	N/A	Excluded. EGCO does not have any intermediate products
Category 11 Use of Sold Products	N/A	Excluded. EGCO includes the energy used by the end-user in category 3 – fuel- and energy-related activities
Category 12 End- of-Life Treatment	N/A	Excluded. The product (i.e. electricity) does not need any end-of-life treatment
Category 13 Downstream Leased Assets	75	In this category, the methodology employed is the Average Data Method. The emissions generated from the leasing assets of EGCO are estimated by considering the total area of the leasing assets and converting it into electricity consumption using the IEA Emission Factors for the year 2022.
Category 14 Franchises	N/A	Excluded. EGCO does not have any franchises
Category 15 Investments	N/A	EGCO is in the process of calculating Category 15 emissions.

ANNEX D: TRANSITION SCENARIO ANALYSIS

Driver Screening

To ensure that the transition scenario analysis is reflective of EGCO's businesses, EGCO conducted a screening process of all transition drivers identified as relevant to EGCO. In line with TCFD recommendations, the drivers identified cover policy and legal, technology, market, and reputational risks.

Transition Drivers	TCFD Category	S&P CSA Category	Business Implication
Carbon tax	Policy & Legal	Emerging Regulation Risk	<ul style="list-style-type: none"> Increasing OPEX for coal and NG electricity generation (70% planned capacity in 2030), increasing cost from suppliers. Green electricity will become more cost-competitive
Fossil-fuel-based generation decline	Market	Market Risk	
IMO regulations	Policy & Legal	Current regulation Risk	<ul style="list-style-type: none"> Demand for fossil-based energy may decrease more significantly due to increased OPEX including freight costs for coal and natural gas, associated with fossil-based energy. Supply chain faces higher shipping costs
Exposure to litigation	Policy & Legal	Legal Risk	<ul style="list-style-type: none"> Greater scrutiny and litigation on climate-related issues and disclosures
CCUS	Technology	Technology Risk	<ul style="list-style-type: none"> Investments required for carbon capture, utilization, and storage (CCUS) increase CAPEX but also allow existing plants and fuel types to continue operation and generate revenue at low net emissions.
Sustainability linked/ green loans	Market	Market Risk	<ul style="list-style-type: none"> Fossil-based generation poses risks to access to capital, especially in plants without CCUS due to sustainability and climate-related requirements.
Third-party stakeholder sentiment	Reputational	Reputational Risk	<ul style="list-style-type: none"> EGCO's reputation and access to capital may be impacted by stakeholder demands for climate action. EGCO's continued implementation and disclosure of the low carbon transition will positively impact EGCO's reputation, creating business and investment opportunities.
Renewable electricity growth	Market		<ul style="list-style-type: none"> As electricity demand is expected to rise, expect growth in both fossil and renewable generation in short-medium terms

Electrification of other sectors (e.g. EV uptake)	Market		<ul style="list-style-type: none"> ■ Increased demand for green electricity as part of sectorial decarbonization plans, leading to additional revenues. ■ Transport electrification may rely heavily on green electricity & batteries, increasing the cost of shipping and thus OPEX.
ROI in investment on low-emission technology	Market		<ul style="list-style-type: none"> ■ Investments and technology developments e.g. energy storage, can help reduce cost and enhance the applicability of green electricity, such as energy storage. ■ Fuel distributors may increase the cost of shipping and OPEX
Hydrogen use	Market		<ul style="list-style-type: none"> ■ CAPEX will be incurred to retrofit existing plants for hydrogen. ■ Increased shipping costs for suppliers

Red = Risk, Green = Opportunity