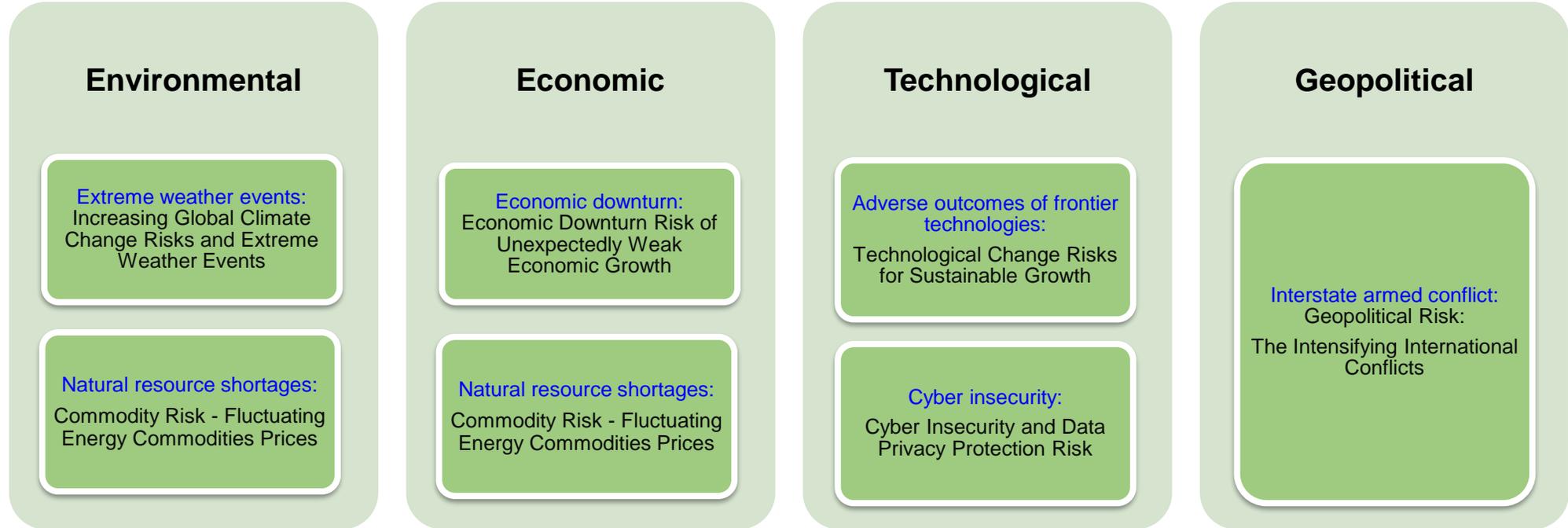




EGCO 2024 Emerging Risk

June 2024

EGCO has identified emerging risks which covered on various risk categories including environmental, economic, technological, and geopolitical. These identified risks are given the nature of EGCO's business and the global trends. Six emerging risks are listed below:



Remarks:
 Blue text refers to 2024 WEF Global Risk topic
 Black text refers to 2024 EGCO Emerging Risk topic

With the increasing digitalization of the energy sector, cybersecurity is a critical risk. EGCO's reliance on digital technologies for operational management, data handling, and communication makes it vulnerable to cyber-attacks and data breaches. Scenario analysis in this area could help EGCO prepare for various cyber threat vectors, assess the resilience of their IT infrastructure, and develop robust response strategies to protect critical data and ensure continuity of operations.

The volatility of energy commodity prices can have a profound impact on EGCO's profitability and operational costs, especially since the company is involved in both fossil fuel and renewable energy sectors. Scenario analysis in this area could explore the financial impact of various price scenarios on EGCO's energy production costs and revenue. It could also examine the effects of energy price shocks on investment in renewable projects and strategic shifts towards more stable and sustainable energy sources.

These are the reasons for "Natural resource shortages" and "Cyber insecurity" are being selected for further impact to EGCO Group and scenario analysis.

Description	Impact to EGCO Group and Scenario Analysis	Mitigations and Opportunities
<p>EGCO Emerging Risk: Commodity Risk – Fluctuating Energy Commodities Prices</p> <p><u>Risk Category:</u> Economic, Environmental</p> <p><u>Source:</u> Macroeconomic Factors</p> <p><u>Timeframe of Impact:</u> 3-5 years</p>	<p>SCENARIO Trend and Projection: Accelerated Transition to Renewables In this scenario, governments worldwide intensify their commitments to renewable energy due to growing concerns about climate change and the economic benefits of renewables. Advances in technology significantly reduce the costs of solar, wind, and battery storage, leading to an exponential increase in their deployment. Energy commodity prices, especially for coal and oil, become highly volatile due to decreasing demand.</p> <p>EGCO, as a utility company, already investing in renewable energy and transitioning towards net zero emissions, EGCO could significantly benefit from this scenario. The global shift toward renewable energy aligns with EGCO's strategic initiatives such as expanding its renewable energy portfolio and reducing carbon emissions. However, the company might face challenges due to volatile commodity prices, particularly if it still has considerable investments in fossil fuels. The reduction in fossil fuel demand could affect segments of EGCO's business reliant on these energy sources.</p> <p>Economically, EGCO may gain competitive advantages in markets that increasingly favor green energy solutions. The company's early investments in renewables could yield higher returns as demand for these technologies accelerates globally.</p> <p>SCENARIO Trend and Projection: Continued Dependence and Volatility In this scenario, global efforts to transition to renewable energy falter due to economic downturns, geopolitical conflicts, and technological challenges. Reliance on fossil fuels remains high, and energy markets experience increased volatility due to political instability in key oil-producing regions, fluctuating demand, and unpredictable climate policies.</p> <p>If the global transition to renewables stumbles and the world remains dependent on fossil fuels, EGCO could face increased operational risks and investment uncertainty. Volatility in fossil fuel markets, driven by geopolitical tensions and inconsistent policy landscapes, could lead to erratic revenue streams from its traditional energy operations.</p> <p>Continued reliance on non-renewable fuels might force EGCO to contend with regulatory pressures and potential stranded power plants in the long term, especially as global sentiments and policies gradually shift towards low-carbon economies.</p>	<p>SCENARIO: Accelerated Transition to Renewables</p> <ul style="list-style-type: none"> EGCO has been actively investing in renewable energy projects and technologies such as wind, solar, and hydroelectric power, which would serve as a natural hedge against declining fossil fuel markets. The company's strategic plan includes diversifying energy production sources and increasing its share in renewable energy capacity, thus mitigating risks associated with fossil fuel volatility. EGCO has also been involved in initiatives aimed at energy efficiency and technological advancements in clean energy, which would support its stability and growth in a rapidly transitioning energy market. <p>SCENARIO: Continued Dependence and Volatility</p> <ul style="list-style-type: none"> EGCO's risk management strategies include maintaining a balanced portfolio between renewable and conventional energy sources, allowing the company to navigate uncertainties in global energy markets. The company emphasizes the importance of agility in its operational strategy, ready to adapt to changes in the energy sector's regulatory and economic landscape. Investments in technology and infrastructure to improve the efficiency and environmental footprint of existing fossil fuel assets are part of EGCO's proactive measures to mitigate the impacts of high volatility in these markets.

References:

- EGCO Group 2023 One Report: [20240315-egco-ar2023-en.pdf](#)
- WEF WEF The Global Risks Report 2024.pdf ([weforum.org](#)): Natural Resource Shortages
- SCENARIO Trend and Projection: Accelerated Transition to Renewables**
 - International Energy Agency (IEA) - Provides detailed analyses and forecasts regarding energy markets and technology developments.
 - World Economic Forum (WEF) - Offers insights on the economic impacts of energy transitions on global and regional scales.
 - International Renewable Energy Agency (IRENA) - Reports on the advancements and cost reductions in renewable energy technologies.
- SCENARIO Trend and Projection: Continued Dependence and Volatility**
 - U.S. Energy Information Administration (EIA) - Provides data and forecasts on energy production, consumption, and commodity prices.
 - Bloomberg New Energy Finance (BNEF) - Offers analysis of the impacts of energy market trends on global financial markets.
 - United Nations Environment Programme (UNEP) - Discusses the environmental and socioeconomic impacts of continuing fossil fuel dependency

Description	Impact to EGCO Group and Scenario Analysis	Mitigations and Opportunities
<p>EGCO Emerging Risk: Cyber Insecurity and Data Privacy protection Risk</p> <p><u>Risk Category:</u> Technological</p> <p><u>Source:</u> Macroeconomic Factors</p> <p><u>Timeframe of Impact:</u> 3-5 years</p>	<p>SCENARIO Trend and Projection: Escalation of State-Sponsored Cyberattacks</p> <p>This scenario predicts an increase in cyberattacks sponsored by nation-states, aimed at both disrupting critical infrastructure and stealing intellectual property. As geopolitical tensions rise, state actors may leverage sophisticated cyber capabilities to exert influence or gain strategic advantages. For example, a major cyber-attack, traced back to a state-sponsored group, targets the control systems of several large hydroelectric dams across multiple countries. The initial attack vector is through compromised software updates to the control systems, exploiting a vulnerability that was previously unknown (a zero-day).</p> <p>EGCO could face significant disruptions to its operations, particularly if critical infrastructure for example hydroelectric dams and power generation systems are targeted. The direct impact could include operational shutdowns, financial losses due to operational downtime, and damage to physical assets. Indirectly, there could be a loss of investor confidence and a potential devaluation of the company's stock due to perceived vulnerabilities.</p> <p>Long-term impacts might involve increased operational costs as the company invests in advanced cybersecurity measures and potential shifts in regulatory requirements to bolster industry-wide cybersecurity defenses.</p>	<p>SCENARIO: Escalation of State-Sponsored Cyberattacks</p> <ul style="list-style-type: none"> EGCO has established a robust cybersecurity framework compliant with ISO/IEC 27001:2013 standards, which includes regular updates and audits to ensure the security of its information systems. The company conducts regular cybersecurity awareness training for employees to minimize risks related to human error and increase the overall security posture of the organization. EGCO has implemented advanced security protocols, including system penetration testing, vulnerability assessments, and the deployment of security incident event management systems to detect and respond to threats proactively.

References

- **EGCO Group 2023 One Report:** [20240315-egco-ar2023-en.pdf](#)
 - **WEF WEF The Global Risks Report 2024.pdf** ([weforum.org](#)): Cyber Insecurity
 - **SCENARIO Trend and Projection: Escalation of State-Sponsored Cyberattacks**
- Insights from the National Institute of Standards and Technology and the Cybersecurity and Infrastructure Security Agency stress the importance of preparing for sophisticated cyber threats posed by national actors and the necessity for cross-border cooperation in cybersecurity ([NIST Publications](#)) ([CISA](#)).

