Risk Management Process
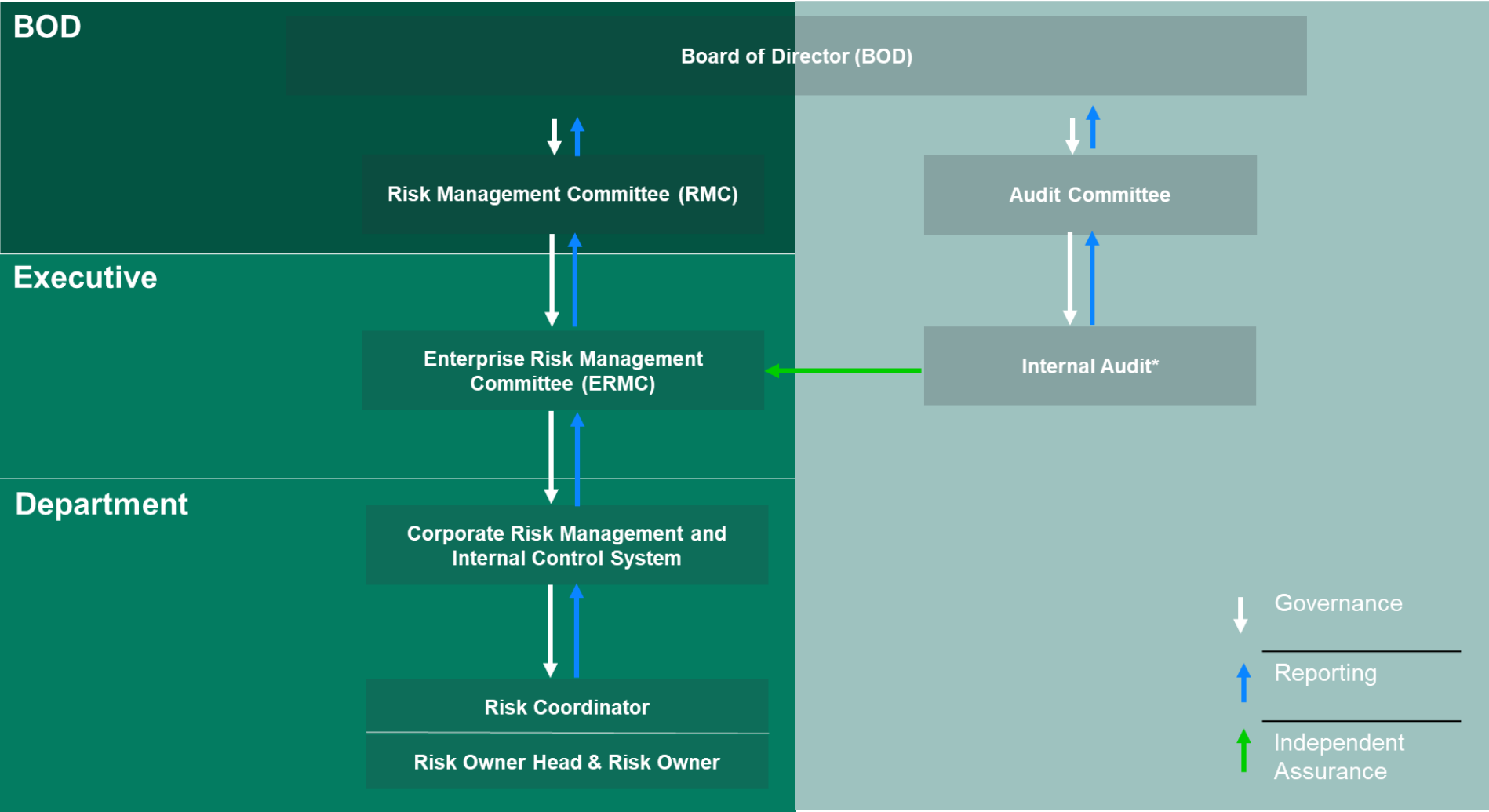

Global Green Chemical Public Company Limited

Date June 2024

Risk Management Framework

GGC has a risk governance framework in accordance with the "Three Lines of Defense" divided into three levels: Board, Executive, Department, and Internal Audit of risk management.

Risk Management Process

GGC assesses the business environment by analyzing both internal and external factors. Our evaluation includes trends in the economy, society, politics, technology, industry, and competitive landscape, among other relevant factors. Through this process, we identify potential risks for our clients, including current, future, and emerging risks.

In addition, GGC has integrated the company's strategic planning and targets into the risk assessment process, ensuring effective management of all identified risks. The risks have been classified into 5 perspectives, making it easy to cascade operationally and enhance risk tolerance. These perspectives include Strategic, Compliance, Operation, Financial, and Human.

5 Risk Perspectives

| 1	2	3	4	5
STRATEGIC	COMPLIANCE	OPERATION	FINANCIAL	HUMAN

Risk Assessment Criteria – Impact & Likelihoods

GGC has established risk criteria, encompassing both **likelihood** and **impact**, which helps the Company assess and prioritize potential risks effectively. The impact of risk determines the level of its consequences, while the likelihood indicates its probability of occurrence. GGC has created a comprehensive and dependable **risk criteria matrix** that clearly outlines the levels of likelihood and impact. This system enables us to efficiently allocate resources and make informed decisions that are grounded in data and analysis.

Impacts – GGC has divided and prioritized the severity of risk impact into 4 levels. The risk aspects related to business operations have been categorized as follows: Financial Amount, Reputation/Image, Customer/Supplier/Partner, Law & Regulation, Objective/Target/Achievement, and Safety/Environment. The impacts consider the factors unique to the business or industry to define the impact of the risk on the company, e.g., stress testing, scenario analysis and sensitivity analysis are measures to assess the magnitude of impact when risks materialize.

Likelihoods – GGC has divided the severity of likelihood impact into 4 levels. The risk aspects related to business operations have been categorized as follows: Probability of Future Events, Frequency of Past Events, and Capability to Control / Experience.
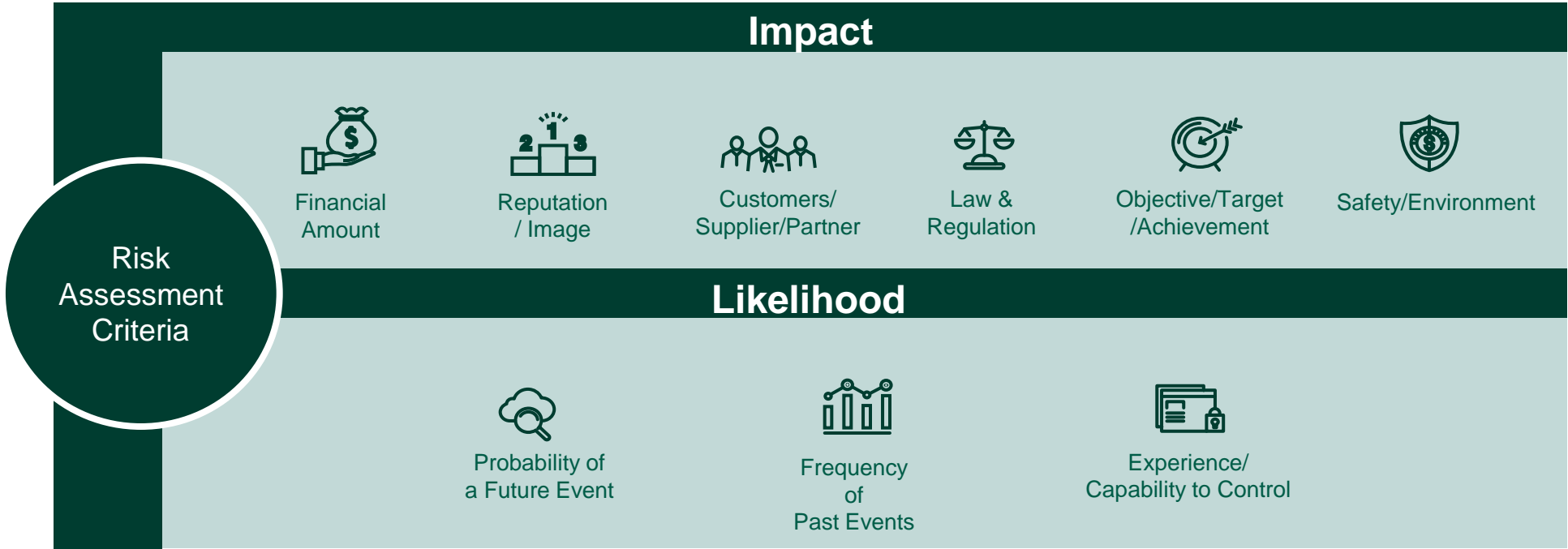
Framework to Determine Risk Appetite

Overview:
To enhance our enterprise risk management process, GGC has conducted systematically identifying, assessing, and mitigating risks, utilizing COSO ERM 2017. The COSO Enterprise Risks Management Process fosters transparency and ethics of conducting business in the manner of alignment with international practices, allowing GGC to conduct effective decision-making and resilience against external business risks.
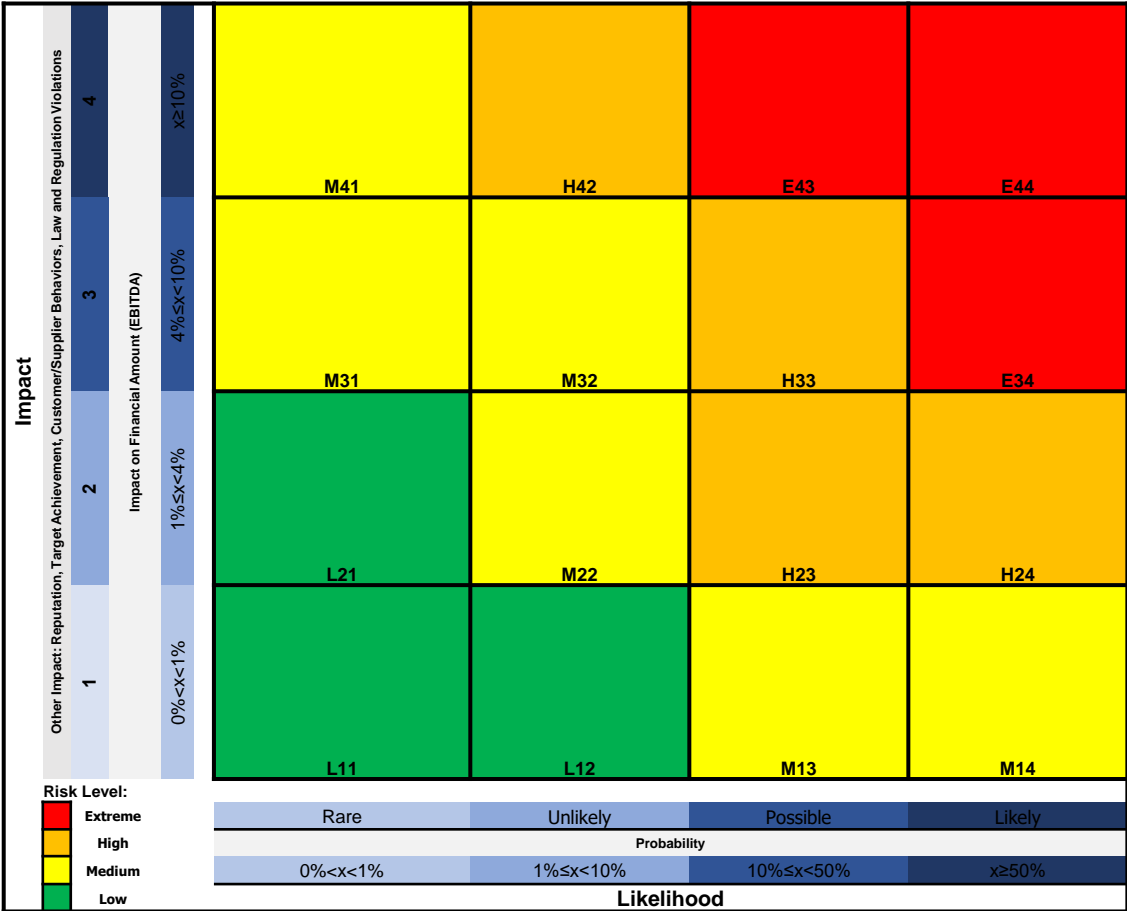
Risk Appetite:
Under the governance of Risk Management Committee (RMC) and Enterprise Risk Management Committee (ERMC), GGC has established risk appetite statement, in accordance with the guidance of COSO ERM 2017, to define the level of risk the company is willing to accept. The risk appetite will provide threshold, as the acceptable level, covered all the identified risks. The Risk Management Committee (RMC) is responsible of setting the overall risk appetite for the organization and ensure the alignment with the company's strategic objectives and risk capacity. Meanwhile, the responsibility of Enterprise Risk Management Committee (ERMC) includes ensuring that the implementation of risk management is align with strategic management, linked to strategic objectives and primary goals of the organization, within risk appetite and in conformity to policy and risk management framework established by the Risk Management Committee (RMC).

Risk Appetite Statement

Perspective	Risk Appetite Statement
Strategic	GGC assesses the risks of its existing business operations and investments while looking for opportunities to generate more value from new businesses that provide suitable returns and are within an acceptable risk threshold. This aligns with the company's strategic sustainability objectives, which strive to reach Net Zero carbon emissions by 2050 and sustain a top-tier sustainability ranking in the environmental chemicals industry. This approach considers the desires and confidence of stakeholders.
Compliance	GGC is committed to conducting business with honesty, integrity, and fairness, and in accordance with the principles of good corporate governance. The Company effectively manages risks related to compliance with relevant policies, laws, regulations, requirements, and standards in its business operations.
Operation	GGC prioritizes quality, reliability, safety, employee health, and environmental impact in its business operations. The Company leverages technology to enhance production efficiency and adheres to international energy management standards. GGC also maintains a competitive edge while ensuring cybersecurity for data and digital systems to enable seamless business operations.
Financial	GGC operates under a financial policy that emphasizes financial discipline and considers returns to stakeholders. The Company manages financial risks appropriately in line with business conditions and changing circumstances to maintain a strong financial position and preserve its creditworthiness.
Human	GGC prioritizes employee development to enhance their capabilities, support business growth, and maintain a competitive edge. The Company fosters a strong corporate culture that cultivates a global mindset among its employees.

Risk Criteria & Prioritization
Prioritization of identified risks, including mitigation actions

Risk matrix with Impact (vertical axis) and Likelihood (horizontal axis):

Impact		Rare (0%<x<1%)	Unlikely (1%≤x<10%)	Possible (10%≤x<50%)	Likely (x≥50%)
4	x≥10%	M41	H42	E43	E44
3	4%≤x<10%	M31	M32	H33	E34
2	1%≤x<4%	L21	M22	H23	H24
1	0%<x<1%	L11	L12	M13	M14

Impact on Financial Amount (EBITDA)

Other Impact: Reputation, Target Achievement, Customer/Supplier Behaviors, Law and Regulation Violations

Probability / Likelihood

Risk Level:
- Extreme (red)
- High (orange)
- Medium (yellow)
- Low (green)

Risk Prioritization

A key tool in risk management, the **risk matrix** enables GGC to effectively prioritize identified risks and develop appropriate mitigation actions. It provides a visual representation of each risk's severity and likelihood, aiding in decision-making and resource allocation actions based on their severity and likelihood.

The examples of **"High Risks"** (the risks assessed as either "Extreme" or "High" level on the risk matrices) are listed below:

Business as Usual Risk
- Sales and Marketing Risks
- Supply Chain Management Risks
- Operational and Safety Risks
- Exchange Rate Risks
- Subsidiaries Performance Risks
- Risks of Cyber Attacks

Strategic Risk
- Risks of Implementing Projects
- Risk of Decarbonization Execution
- Risks of People and Organization

Emerging Risk
- Risk Resulting from Cost and Access to Insurance
- The Movement of Chinese Capital in Upstream Oil Plantation
- Biodiversity Loss from Palm Oil Plantation

More information on 3 main types of risks:
GGC Annual Report 20223, document pages 62-72

Risk Prioritization
Descriptions of risk appetite, risk tolerance, business impact and mitigation actions

Risk Level
🟢 *Low* 🟡 *Medium* 🟠 *High* 🔴 *Extreme*

1. Safety Risk

	Personal Safety	Process Safety
Inherent Risk (Impact, Likelihood)	HIGH	HIGH
Issue/ Root cause	Employees and Contractors are not fully aware of health and safety measures at work.	• Safety devices involved in the production process have not undergone 100% inspection. • Workers lack an understanding of the risks or hazards associated with work related to the production process.
Mitigation	• Promote the implementation of Engineering Control (Special tools) to reduce risks according to the Hierarchy of Control, focusing on hand injuries. • Promote the B CAREs safety culture and operational discipline. • Enhance contractor work process auditing (New AVL) to guarantee a safer work environment. • Elevate the safety culture for contractors by involving them in the company's safety activities. • Address the shortcomings identified in the organizational safety culture survey.	• Conduct PSM (Process Safety Management) Internal Audit and Bow Tie Barrier Validation within operations by PSM committees of each operation
Residual Risk (Impact, Likelihood)	LOW	LOW
Risk Appetite Statement	GGC conducts business on **quality, security, safety, employee health and well-being, society, community, and the environment**. The company emphasizes using technology to improve production efficiency, adheres to international energy management standards, and maintains operations to sustain competitiveness.	
Risk Tolerance 2024	**No Process Safety Event (LOPC Tier 1)*, according to safety definition.**	

Risk Prioritization

Descriptions of risk appetite, risk tolerance, business impact and mitigation actions

2. Cyber Attack Risk

Cyber Attack

Inherent Risk (Impact, Likelihood)	**HIGH**
Issue/ Root cause	Cyberattacks can pose significant risks to a company's IT systems and data security, leading to data breaches and disruptions to business operations.
Mitigation	GGC implements cyber risk management in adherence to the framework of the National Institute of Standards and Technology (NIST Framework), which consists of five components as follows. • 1. Identify: Monitor new threats, assess risks in both office and factory systems, test IT security measures, and perform system assessments and internal audits to ensure strict compliance with the relevant safety standards. • 2. Protect Enforce requirements, policies, and guidelines on the security of Information Technology (IT) and Operational Technology (OT) and data governance for use as guidance in GGC • 3. Detect Utilize a cyberattack detection and monitoring system using deception technology and endpoint security protection • 4. Respond Conduct cyberattack response drills and IT and plant systems recovery drills on a regular basis and improve response plans to ensure suitability and mitigate any potential damage. • 5. Recover Establish policies and follow data backup and emergency preparedness protocols to ensure the continuous availability and functionality of GGC's data and information systems.
Residual Risk (Impact, Likelihood)	**MEDIUM**
Risk Appetite Statement	GGC ensures **cybersecurity for data and digital systems** to enable uninterrupted business operations without impacting the organization's core functions.
Risk Tolerance 2024	**No cybersecurity-related case that might impact to reputation, assets, and confidential information of the company.**

Thank you