

Risk Management and Risk Factors

Risk Management

Committed to managing risks in all aspects efficiently with incessant enhancement of its enterprise risk management (ERM), Global Green Chemicals Public Company Limited (GGC) integrates its risk appetite assessment into the formulation of strategic, investment, and business planning processes. To further ensure the alignment of its business operations with corporate objectives and goals in the short, medium and long terms, GGC fully adheres to the risk management policy, frameworks, and guidelines approved by the Risk Management Committee and the Board of Directors, with constant monitoring and improvement to be compatible with the current and future business situations.

Risk Management Standards

Besides conforming to the internationally recognized standards of COSO (The Committee of Sponsoring Organizations of the Treadway Commission) and ISO 31000 (International Organization for Standardization), GGC's enterprise risk management policy, structure, guidelines, and practices are fully aligned with its corporate governance policy and the declaration of its anti-corruption intent.

Risk Management Structure

GGC efficiently manages its risks with full cooperation from all staff by structuring its risk management into three levels: the Board of Directors, Executives, and departmental levels. While its Risk Management Committee (RMC), appointed by the Board of Directors performs the duties of reviewing the risk management policy, objectives, and frameworks together with giving relevant opinions and recommendations to ensure enterprise-wide alignment, and compatibility with GGC's business goals and strategies.

Appointed Managing Director as the Chairman and consisting of Vice president from diverse department as members, GGC's Enterprise Risk Management Committee (ERMC) specifies GGC's risk management directions, work plans, scopes and processes, constantly gives relevant recommendations, and regularly oversees and monitors the management of risks.

At the departmental level, Corporate Risk Management, a unit under Corporate Strategy, and the Risk Owner of each department jointly perform risk identification and assessment, undertake risk management, and regularly prepare risk management reports for submission to the Risk Management Committee under GGC's risk management structure.

Risk Management Tools and Monitoring

GGC efficiently manages its risks by analyzing and assessing all risks potentially affecting its business operations, generating Risk Maps, specifying Mitigation Plans, and applying Key Risk Indicators (KRIs) in its Early Warning System to monitor risk management. Risk management reports are submitted to the Executives monthly and to the Risk Management Committee and the Board of Directors regularly.

Risk Management Culture

Recognizing the importance of forging an enterprise-wide culture of risk management as part of all employees' responsibilities, GGC undertakes the following actions:

- Specify risk management approaches via the risk management policy and scope, with regular communication to all employees.
- Constantly monitor the progress of risk management undertakings and report it to the Executives, the Risk Management Committee, and the Board of Directors.

- Regularly review and improve risk-management roles, duties, and responsibilities of all related persons.
- Foster among all employees the recognition and attentiveness to take responsibility in managing risks and complying with GGC's risk management policy and system at corporate and departmental levels.
- Provide all employees with risk-management knowledge and understanding via training by experts and integrate risk management into personnel development plans.



Risk Factors

Based on the analysis of its business environment, internal factors, and external factors, GGC has identified major risk factors potentially hindering the achievement of its business operations, investments, and strategies, or all of these, in 2017. These risk factors are described below.

Operation and Safety Risk

Focusing on production activities and safety, GGC applies the Operational Excellence Management System (OEMS) and Process Safety Management (PSM), with strict compliance with the policy on safety, security, occupational health, and the environment. In ensuring continual and efficient production with maximum safety, GGC has issued the following risk management measures:

Risk Management Measures

- To ensure continual production, GGC prepares spare parts for all major production equipment and installs emergency supply of electricity for power blackouts, with preventive maintenance services provided to equipment and machinery.
- Performing Reliability & Integrity Management on machinery, with inspection carried out by GGC's experts using the Asset Integrity Assessment (AIA) program.
- Assessing on the effectiveness of process safety undertakings and reliability & integrity management on machinery, performed by internationally recognized experts.
- Undertaking Risk and Reliability Management (RRM) by conducting Risk-Based Inspection (RBI), a process for the identification, assessing and mapping of industrial risks (due to the erosion and cracking of stresses), which may compromise pressurized equipment and structural components; and performing Reliability-Centered Maintenance (RCM) tasks, which will raise the reliability of assets, their availability, and the cost effectiveness of their maintenance, if correctly undertaken.
- Developing the knowledge and competency of operators and safety personnel, and forging via GGC's B-CAREs project, the awareness of safety in performing their work.
- Conducting a BCP (Business Continuity Plan) drill annually so that personnel know the steps to be taken during emergencies and assuring one that if such situations cause business disruption, GGC will be able to mitigate their impacts.

Operations Strategy and Investment Risks

Changes in business environment may affect GGC's implementation of its strategies, investment, and business expansion. To ensure the achievement of its strategic goals while sustaining its competitiveness, GGC has defined the following risk management measures:

Risk Management Measures

- In ensuring efficient and profitable management of its capital investment and the conformity of all investment projects to its strategies, GGC appoints an Investment Committee to supervise and consider these projects, conducts reviews by departments unrelated to the operation of reviewed projects, and harmonizes clear guidelines for all departments.
- Employing a meticulous and clear procedure in the consideration of investment projects, covering the identification of investment opportunities, business formats, the feasibility-study stage, and project screening before submission to the Board of Directors for approval.
- Regarding the consideration of major capital-intensive projects, the Risk Management Committee is required to screen the adequacy of risk assessment and risk management measures before submission to the Board of Directors, with constant monitoring of the management of risks facing these projects.
- In seeking new investment opportunities in 2017, GGC took part in a working group under the joint committee between the public and private sectors to support the government's Bioeconomy implementation, the New S-Curve working group under the Public-Private Collaboration Project, and the cooperation to support the Eastern Economic Corridor of Innovation (EECi). These provided GGC with the opportunities to forge R&D and innovation networks, both locally and internationally, and strengthened the connections to undertake future joint investments.

People and Organization Capability Risks

To achieve sustainable growth of GGC's environmental-friendly products in conformity to its long-term business strategy, GGC has prepared its human resources management to fully support its future growth by improving its organization structure and manpower planning processes with knowledge and competency development for personnel, while cultivating positive behaviors in line with the corporate values and culture.

Risk Management Measures

- GGC has a conceptual Plan to restructure the organization to be able to best respond to the current and future business strategies
- Establishing a committee to drive the growth program of GGC to study and achieve the business expansion, and to prepare and enhance capabilities in all aspects to handle the future business plan.
- Planning and managing its manpower for responding to its strategies and changes in business competition, focusing on the current management of its personnel to address potential changes, and the recruitment of personnel to strengthen GGC's new business products in line with its strategic plan
- Formulating and implementing development plans for all employees, including the management and supervisors, and organizing orientation for employees to ensure their understanding about GGC's business and operations
- Sending the management to attend the Leadership Development Program to enhance their knowledge and skills, while improving the management efficiency of personnel in their respective departments so that all personnel perform their work in line with GGC's business goals.
- Surveying employee satisfaction to improve the human resource management plan and maintain long-term relationship between employees and GGC. In 2017, GGC focused on the employee career opportunity and employee performance Assessment system.

- Devising Career Management system, an intrigal part of the personnel preparation and improvement strategies, to ensure that all employees will inform in line with GGC's business direction. The career management system will also drive and improve the potential employees to grow in their career path

Feedstock Risk

Palm oil and palm kernel oil are the main feedstock for GGC's production processes. To maintain its competitiveness, GGC consistently acquires sufficient quantities of these materials at reasonable prices, while ensuring that their qualities meet international standards. Recognizing the need to manage its Feedstock Risks, GGC has defined the following measures:

Risk Management Measures

- Devising the Inventory Risk Management frame work, consisting of feedstock and product, Based on market situation and monitoring the operation under the said framework regularly by the Risk Management Committee
- Monitoring the prices and supplies of palm oil and palm kernel oil, climate change, import and export volumes, including domestic and international demand and supply to forecast the volume of palm-oil production and stocks. Applying the projections for appropriate preparation of and inventory management.
- Procure suitable alternative feedstock to mitigate potential impacts of changing in prices of fundamental feedstock
- Collaborating with business partners commanding relevant expertise and networks of farmers in the areas designated for the promotion of oil-palm planting in Thailand so as to support sustainable practices for oil palm plantations in conformity with RSPO (Roundtable on Sustainable Palm oil) standard, to in turn ensure that GGC will be able to procure palm oil and palm kernel oil of the RSPO standard, thus bolstering customers' confidence on the standard of GGC's products.

Sales and Market Risks

Sales prices of methyl ester, one of GGC's products, are referenced to the government's announced prices, based on the market prices of domestic feedstock, while the prices of fatty alcohols depend on a number of factors, for example, feedstock prices, domestic and global demand for fatty alcohols, and competitive factors, which include the prices of substitute products for natural fatty alcohols. The highly competitive market and economic volatility may also affect the prices and sales of GGC's products. To sustain its competitiveness, GGC has undertaken the following risk management measures:

Risk Management Measures

- Continually monitoring feedstock prices, products, demand and supply, while considering an appropriate improvement to facilitate the use of alternative and low-cost feedstock in the production processes to maintain the spreads of GGC's products and feedstock prices. Reporting to the Risk Management Committee on a regular basis the management of risks arising from the volatility of product and feedstock prices.
- Conducting R&D and innovation on special or new grades of products to add value as required by customers, and extending its business to downstream industries to raise the profit margin ratios of GGC's products while serving market and customers' needs.
- Incessantly enhancing relationships with customers while focusing on constantly improving the quality of products and services to expand GGC's customer base and satisfy customers' needs.

Policy and Regulatory Change Risk

GGC is well prepared for relevant changes in government policies, regulations and announcements. To ensure a timely response to these changes, which may affect its business positively or unfavorably, GGC has undertaken the following management measures:

Risk Management Measures

- Monitoring the public sector's information and legal changes potentially affecting its business operations to correspondingly modify GGC policies and operations.
- Providing information to support the development of biochemicals industry and other industries related to the public sectors.
- Incorporating the assessment and study of laws, government regulations and privileges in conducting project feasibility studies and risk management for GGC's investment consideration.
- Announcing GGC's anti-corruption, anti-money laundering, and combating the financing of terrorism intents and guidelines, GGC joined the Private Sector Collective Action against Corruption (CAC), and conducted risk assessment on corrupt practices within GGC's activities in contact with government agencies.

Cyber Security Risks

GGC's business operations relies on its IT system to ensure smooth coordination of all departments, while cyber attacks and IT-based threats have become more severe and appeared in more diverse forms. If any security violation or virus attack, or both, cause the system to malfunction or break down, GGC's business and reliability may be affected. To reduce such threats, GGC has undertaken the following risk management measures:

Risk Management Measures

- Using IT services provided by PTT Digital Solution Co., Ltd., the provider of IT services for PTT Group. Internationally recognized as a competent service provider, this company offers high levels of ICT security services through its team of specialists.
- Communicating to all employees and related persons to provide knowledge and foster their awareness of IT security, relevant threats, and IT-related laws.
- Organizing emergency drills on responsive actions against potential threats and the recovery of data, preparing BCP (Business Continuity Plan) to ensure a timely response to emergency situations to reduce potential damage to GGC's data.

Foreign Exchange Rate Risks

Exchange rate fluctuation poses a significant financial risk, while the US dollar is the main reference currency denomination of GGC's business operations. Fluctuations of the Thai Baht and US dollar may therefore affect GGC's overall performance. To manage its exchange rate risks, GGC has undertaken the following measures:

Risk Management Measures

- Monitoring the movement of foreign exchange markets and identifying financial instruments for the prevention of exchange rate risks.
- Employing financial instruments to manage risks by hedging on exchange rates and defining appropriate risk management goals in line with the business operation plan under GGC's risk management framework approved by the Risk Management Committee.

Through its systematic risk management process governed by the Board of Directors, the Risk Management Committee and Executives operation, GGC is convinced that its risk management system is efficient and will support the achievement of business goals in the future.