

2022 GCE Sustainability Report





About the Report

This is the 11th Sustainability Report of Gold Circuit Electronics Ltd. (hereinafter referred to as GCE) since its first publication in 2013. The Report discloses issues related to environmental protection (E), social responsibility (S), and corporate governance (G), as well as the management policies and achievements regarding material topics. It also explicates the communication with stakeholders and responses to their expectations, and identifies the impact of environmental protection (E), social responsibility (S), and corporate governance (G) across the value chain.

Structure of the Report

The information disclosed in this Report follows the requirements of the new version of the GRI Standards (2021) and adopts the sustainability accounting standards from the Sustainability Accounting Standards Board (SASB) and the Task Force on Climate-Related Financial Disclosures (TCFD) framework.

Reporting Period and Cycle

- The scope of information and data disclosed in this Report is from January 1, 2022 to December 31, 2022.
- The last issue was published in June 2022.
 - The current issue is released in June 2023 in both English and Chinese versions, which can be downloaded from the GCE’s official website.
 - The next issue is expected to be published in June 2024 (regular annual publication).

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Reporting Boundaries and Quality

Category	Main disclosure	Differences from the scope of disclosure in the Financial Statement	External Assurance/ Verification
ESG Information	GCE/ Taiwan plants and China plants	It only discloses information in Taiwan plants and China plants	Verification of the contents of this report is conducted by the British Standards Institution (BSI) in accordance with AA1000AS v3 for Type I Medium Level of Assurance.
Financial Information	GCE	None	Financial Reporting [Deloitte & Touche]

The Deloitte & Touche and the BSI are not the Company’s equity holders nor members of the management, and they are only entrusted with external assurance or verification of the Financial Statement and Sustainability Report.

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Message from the Chairman

In 2022, despite the ongoing impact of the Covid-19 pandemic, GCE achieved impressive consolidated revenue of 32.7 billion. As we encounter the fluctuating international economic conditions and extreme climate events. We recognize that, while pursuing profitability and growth, it is essential to achieve a perfect balance and integration among the economy, environment, and society. Therefore, we have integrated ESG into the foundation of our operations to ensure sustainable development.

GCE has established a Sustainability Development Committee, consisting of seven functional groups: Environment and Health Safety, Energy Management, Green Supply, Innovation Management, Corporate Governance, Human Rights and Public Welfare, and Information Security. These groups support the Company in implementing and promoting sustainable management objectives, aligning with international initiatives, and shaping a corporate culture of excellence.

In recent years, in addition to the continuous participation in the Carbon Disclosure Project (CDP) and the Company plans to engage in the Science Based Targets initiative (SBTi). We have also prioritized energy transition as part of our carbon reduction core projects, progressively increasing the use of renewable energy. Our aim is to achieve a 30% reduction in greenhouse gas emissions by 2030 and work towards net-zero carbon emissions by 2050. Moreover, to enhance energy efficiency, GCE continuously replaces energy-intensive equipment such as chillers and air compressors. This allows us to reduce energy consumption and minimize greenhouse gas emissions while maintaining production capacity.

GCE firmly believes that our employees are our most valuable assets. Therefore, we are committed to providing comprehensive training and development opportunities, offering diverse learning resources and programs. In addition to enhancing PCB expertise, we have developed blueprints and specialized courses for AI talent development, enhancing our employees' skills and competitiveness. On the other hand, as ESG is becoming a global trend, the Company has taken proactive measures, aiming to internalize these values in the hearts of every employee. Through internal and external education and training on issues such as Responsible Business Alliance (RBA), sustainability consensus, energy management, information security, workplace safety, and corporate ethics, we ensure that our employees understand the concept of sustainable business and put it into action plans, creating a driving force for continuous progress. Moreover, with GCE's influence, we could lead our partners to join in carbon reduction initiatives.

Despite the challenges posed by the global pandemic in recent years, GCE has maintained a steady level of competitiveness. I hereby express sincere gratitude for the dedication of all employees and the support of our customers, shareholders, and partners. Going forward, GCE will continue to leverage our strengths to fulfill social responsibilities while pursuing economic performance, thereby creating a situation where the economy, society, and the environment all win.



Yang Cheng-Tse

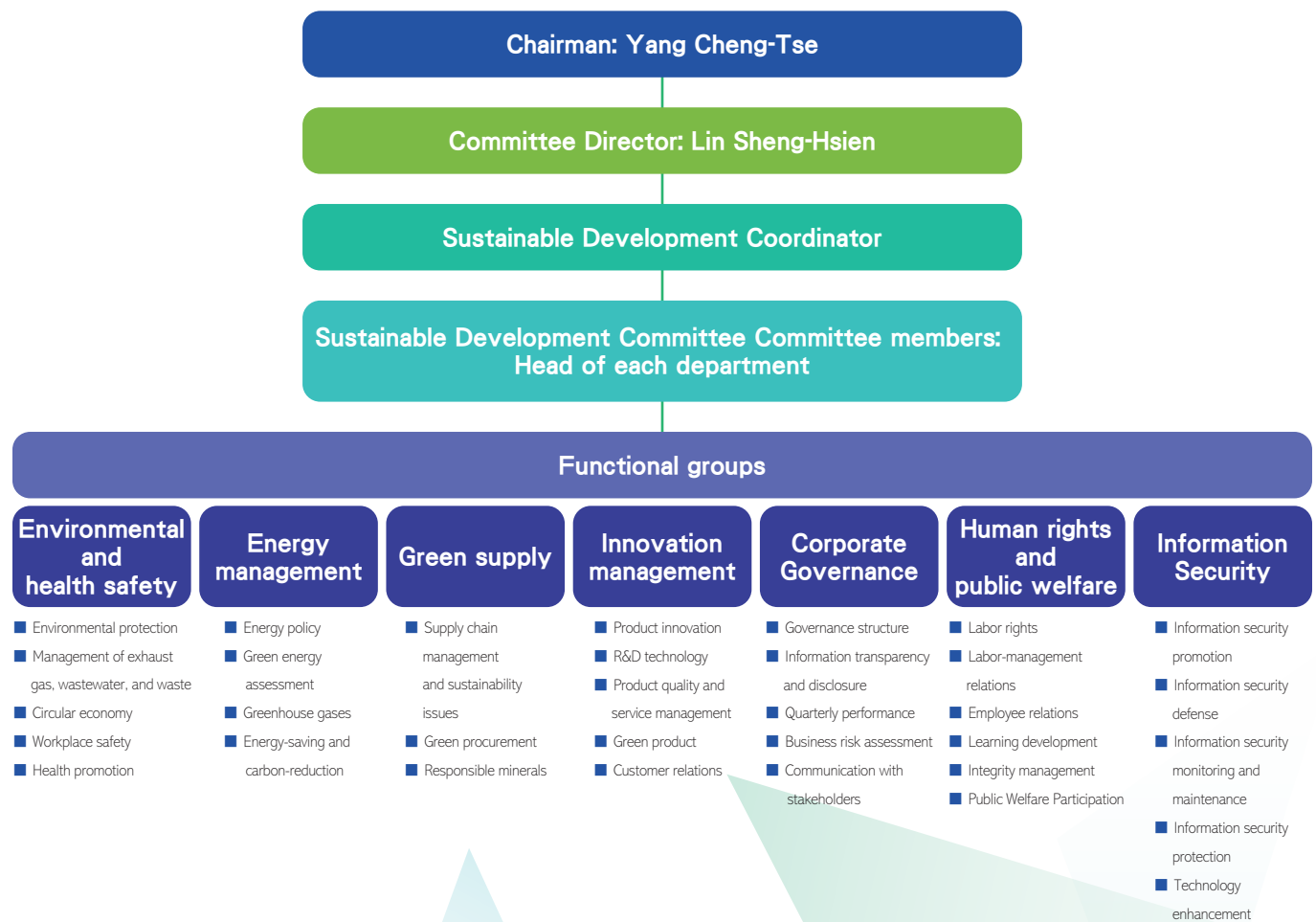


Chapter 1

Sustainability Strategy

GCE adheres to the spirit of “Financial integrity, proactive attitude, steadfast manner, and sustainable operation” to shoulder the care of employees and social responsibilities and to move steadily towards sustainable development. With the attitude of “integrity, accountability, professionalism, and innovation”, we are duty-bound for customers, the market and the environment, and continue to optimize and improve corporate governance and environmental protection.

I. Sustainable Development Committee



GCE has established the Sustainable Development Committee, led by the Chairman with the Committee Director and a Sustainable Development Coordinator, as well as functional groups, such as the Environment and Health Safety group, Energy Management group, Green Supply Chain group, Innovation Management group, Corporate Governance group, Human Rights and Public Welfare group, and Information Security group, and will adjust or add groups based on the needs in the future.

The Committee Director of the Sustainable Development Committee is Vice President, Lin Sheng-Hsien, designated by the Chairman. The committee members consist of the head executives from each department. The committee is responsible for reviewing, formulating, and promoting action strategies and risk management measures. It collectively resolves short-, medium- and long-term plans and manages the results of performance evaluations for subsequent reporting to the Chairman and the Board of Directors. The coordination of sustainable development is overseen by Director, Hsu Ying-Shun, who is responsible for coordinating planning and promoting sustainability-related issues while communicating and coordinating with various functional groups.

The Sustainable Development Committee reports to the Board of Directors at least once a year on sustainable development strategies, action plans, and relevant information. In 2022, reports were submitted on May 10, August 9, and November 10 to update the Board on the progress of sustainable development, including overall strategic direction, goal setting, progress reports, greenhouse gas inventory results, and green electricity procurement execution. This highlights the Board of Directors’ role as the highest governing and risk management authority of GCE.

The personnel responsible for the coordination of the Sustainable Development Committee regularly convene meetings with functional groups to discuss and plan the impact on the Company’s operations regarding the abovementioned issues related to sustainable development. They continuously adjust strategies, management policies, and short-, medium- and long-term plans, serving as references for action strategies or decision-making. Subsequently, the follow-up involves reporting to the Sustainable Development Committee for effective implementation and progress updates according to the resolved content.

As for the functional groups, they are assigned with dedicated supervisors and members, covering colleagues from both the Company’s operational departments and sustainable development, who collect information on sustainability trends and issues from government, customers, peers, and international sources. By utilizing the Company’s risk management and performance evaluation mechanisms, they review the identified risks and opportunities in each unit, monitor the execution progress and obstacles of response measures, and performance.

II. Analysis of Material Topics

1. Organizational Contexts

- GCE applies the five principles (dependency, influence, tension, responsibility and diverse perspectives) of the AA1000 SES (Stakeholder Engagement Standard, 2015 edition), considers the stakeholders listed by peers, and then has the Sustainable Development Committee discuss and confirm to identify five stakeholder groups: employees, suppliers, customers, investors, and government agencies.
- Establishment of issues of concern: After collecting and taking inventory of the sustainability issues of concern from the analyses of global trends, industry characteristics, internal and external business and operational situations, as well as international standards and guidelines (GRI, TCFD, SASB), there 24 issues being identified in this report.

2. Identification of Actual and Potential Impacts

GCE takes into account the rights and interests of all stakeholders in order to set a model for the industry, responds to, formulates and implements action plans through various communication channels in the following table, and achieves sustainable development targets by continuously communicating with the stakeholders for the results, collecting and identifying the actual and potential impact of various issues of concern and feedback.

Stakeholder	Relation with the Company	Issues of concern	Communication methods	Communication frequency
Employees	All GCE employees	Legal compliance/ Human Rights Assessment/ Occupational safety and labor health/ Compensation and employee care/ Operational performance	Welfare Committee meeting/ Labor-management meeting/ Occupational Safety and Health Committee/ Interview with newcomers/ Grievance and suggestion mailbox/ Communication channels for employee grievances and suggestions / Staff education and training/	Nonscheduled Quarterly Quarterly As needed As needed Nonscheduled
Supplier	Suppliers that provide raw materials, equipment or services to GCE	Legal compliance/ Operational performance/ Service quality and customer satisfaction/ Greenhouse gas emissions/ Supplier	Point of contact of the procurement unit/ Integrity management approach/ Supplier conferences/ Supplier training activities	As needed As needed Once/year at least Nonscheduled

Stakeholder	Relation with the Company	Issues of concern	Communication methods	Communication frequency
Customers	Main business customers	Legal compliance/ Operational performance/ Service quality and customer satisfaction/ Water resources management/ Greenhouse gas emissions	Company website/ Customer visits/ Point of contact of the business unit/ Mutual visits between senior executives/ Business meetings/ Phone calls, emails or other means of contact	As needed Nonscheduled As needed Once/year at least Once/year at least As needed
Investors	Banks/ Company shareholders	Legal compliance/ Operational continuity/ Operational performance/ Energy and resource management/ Greenhouse gas emissions	Market Observation Post System (MOPS) / Earnings Conference, Symposiums/ A dedicated page for stakeholders on the Company's website/ Shareholders' meeting/ Phone calls, emails or other means of contact/ Mutual visits or business meetings	As needed Four times/year at least As needed One time/year at least As needed Nonscheduled
Government agencies	Local government agencies or institutions for business operation	Legal compliance/ Operational continuity/ Water resources management/ Waste and hazardous substance management/ Climate change risks and opportunities	Official documents/ A symposium with the competent authorities/ Discussion with the Association/ Company website	Nonscheduled Nonscheduled Nonscheduled As needed

3. Assessment of Impact Significance

In response to the actual and potential impact of each issue of concern raised by various stakeholders, GEG evaluates the degree of impact, and provides important information about the material topics of the current year's issues as determined and ranked by the Sustainable Development Committee and report to the Board of Directors.

4. Reporting Prioritization of Most Significant Impacts

The process involves distributing questionnaires to the President and senior management of each department, considering the important information and material topics in 2021 compiled from the first three steps, as well as consulting with experts. The analysis of the impact level of each issue on the "level of impact on environmental protection, social responsibility, and corporate governance" and the "likelihood of occurrence" are then used to prioritize the most significant impact issues for this year, establishing them as the material topics to be addressed in this Report in terms of reporting priority.

For this year's material topics, the Sustainability Committee ranked them based on the total impact score (total score of "level of impact on environmental protection, social responsibility, and corporate governance" and "likelihood of occurrence"). The table below shows the arrangement from highest to lowest, with a threshold of 277 points as the criteria for materiality. After considering other factors such as operational impact or customer requirements, two additional issues (with a total score below 277 points) were included, resulting in a total of 12 material topics.

In this Report, GCE will address the practices and management policies related to the relevant material topics in each chapter, and will also provide action plans and management measures accordingly.

2021 Ranking	2022 Ranking	Issues of Concern	Positive/negative impact	Actual/potential impact	Total
			Level of impact on environmental protection, social responsibility and corporate governance	Likelihood of occurrence	
01	01	Greenhouse gas emissions	172	151	323
05	02	Energy and resource management	160	150	310
02	03	Waste and hazardous substance management	161	141	302
07	04	Occupational safety and labor health	159	140	299
19	05	Service quality and customer satisfaction	155	143	298
14	06	Climate change risks and opportunities	157	138	295
10	07	Water resources management	152	133	285
08	08	Legal compliance	160	125	285
13	09	Operational continuity	155	128	283
15	10	Operational performance (Shareholder's equity)	153	124	277
16	11	Compensation and employee care	147	129	276
09	12	Risk management	151	124	275
17	13	Raw materials management and circular economy	138	133	271
06	14	Operational continuity	152	119	271
12	15	Supplier	149	120	269
10	16	Human Rights Assessment	145	123	268
03	17	Corporate governance and ethical management	148	115	263
N/A	18	Privacy	144	118	262
20	19	Talent cultivation and career development	135	124	259
18	20	Green procurement	131	118	249
22	21	Product information	118	113	231
21	22	Social care and public welfare	108	103	211
N/A	23	Marine conservation	93	84	177
N/A	24	Biodiversity	91	81	172

Note: The two additional issues highlighted in yellow (with a total score below 277 points) are included in the material topics.

III. Comparison of Materiality

The ranking of material topics is used as the basis to correspond to the GRI standards, SASB sustainability accounting standards, and their responding chapters as shown in the following table.

No.	Item	Disclosure Item	Stakeholder groups					Description of materiality
			Employees	External				
				Customers	Investors	Suppliers	Government agencies	
01	Operational performance (Shareholder's equity)	GRI 201	Direct	-	Direct	Indirect	-	To meet the expectations of all stakeholders, it is crucial for the Company to establish a solid governance structure, effectively manage risks, and consistently pursue service quality and customer satisfaction for enhancing operational performance continuously.
02	Service quality and customer satisfaction	GRI 416	-	Direct	Direct	Indirect	-	
03	Legal compliance	Self-defined topic	Direct	Direct	Direct	Business / Indirect	Indirect	By adhering to legal requirements and actively promoting the concept of integrity, along with a strong commitment to information security, the Company can achieve its objectives of sustainable business.
04	Operational continuity	Self-defined topic	Direct	Direct	Business	-	-	
05	Human Rights Assessment	GRI 406-1 SASB Employee Diversity and Inclusion	Direct	Business	-	Business	Indirect	The Company's operations are centered around the promotion from the employees. Only by adhering to labor laws, safeguarding the dignity of all employees, enhancing labor rights, and establishing fair and equitable compensation, comprehensive training and promotion systems, can the Company uphold internal human rights and achieve the goal of fostering a collaborative and united workforce.
06	Occupational safety and labor health	GRI 403	Direct	Business	-	Business	Indirect	Only by actively promoting workplace health and awareness of safety and upholding a commitment to continuous improvement, regularly and appropriately implementing comprehensive assessment measures, can we ensure that employees feel secure and confident in executing their duties within the Company.
07	Water resources management	GRI 303	-	Business	Business	Business	Indirect	Considering climate change and the increasing scarcity of water resources, it is essential to formulate measures for resources management and recycling to effectively respond to potential future impacts.
08	Waste and hazardous substance management	GRI 306	-	Business	Business	Business	Indirect	Waste and hazardous substance management have significant environmental impacts. Strengthening their management and promoting recycling is crucial to environmental protection, human health, and climate change mitigation.
09	Energy and resource management	GRI 302	Indirect	Business	Business	Business	Indirect	Effective management of energy and resources, as well as greenhouse gas emissions, are key implementation projects to respond to the goal of net-zero emissions and the impacts of climate change.
10	Greenhouse gas emissions	GRI 305	Indirect	Business	Business	Business	Indirect	
11	Climate change risks and opportunities	TCFD	Indirect	Business	Business	Business	Indirect	
12	Supplier	GRI 308 GRI 414 SASB Supply chain management	-	-	-	Direct	-	Suppliers are important partners of the Company. By aligning with shared values and moving forward together towards sustainable development with them, the Company can effectively respond to ESG issues.

Note: According to the GRI Standard, there are three levels of linkage between the GRI "topic Boundary" and the assessing stakeholders: impacts they cause directly, impacts they contribute to with other groups, or impacts that are directly linked to them through their business relationships.

V. Strategies and Short-, Medium- and Long-Term Goals

Aspect	Key strategy	Short-term (2023)	Medium-term (2025)	Long-term (2030)
Environmental	The organization's achievement of net-zero carbon emissions	1. 8% reduction of greenhouse gas emissions compared with the baseline year. 2. 8% total green power use. 3. 1% annual energy-saving rate. 4. 2% reduction of energy intensity annually.	1. 10% reduction of greenhouse gas emissions compared with the baseline year. 2. 15% total green power use. 3. 1% annual energy-saving rate. 4. 2% reduction of energy intensity annually.	1. 30% reduction of greenhouse gas emissions compared with the baseline year. 2. 30% total green power use. 3. 1% annual energy-saving rate. 4. 2% reduction of energy intensity annually.
	The executor of the green power	1. Less than 1 abnormal incident of air pollution control equipment. 2. 12% water conservation rate. 3. 50% reduction rate of water use intensity. 4. Maintain a 95% of waste conversion rate. 5. Maintain a 50% weight reduction rate of membrane residue.	1. Less than 1 abnormal incident of air pollution control equipment. 2. 15% water conservation rate. 3. 55% reduction rate of water use intensity. 4. Maintain a 95% of waste conversion rate. 5. Maintain a 50% weight reduction rate of membrane residue.	1. Less than 1 abnormal incident of air pollution control equipment. 2. 18% water conservation rate. 3. 60% reduction rate of water use intensity. 4. Maintain a 95% of waste conversion rate. 5. Maintain a 50% weight reduction rate of membrane residue.
Social	Human rights as the foundation of sustainability	1. A 95% completion rate of human rights training. 2. A 95% completion rate of ethics training for key departments. 3. Zero laborers and foreign migrant workers charged recruitment fees. 4. Zero children in child labor. 5. Zero case filed in discrimination. 6. A 100% resolution rate of grievances filed. 7. The proportion of female employees: over 45% in Taiwan plants and reach 35% in China plants. 8. The proportion of female supervisors: over 25% in Taiwan plants and reach an average of 20% in China plants.	1. A 98% completion rate of human rights training. 2. A 98% completion rate of ethics training for key departments. 3. Zero laborers and foreign migrant workers charged recruitment fees. 4. Zero children in child labor. 5. Zero case filed in discrimination. 6. A 100% resolution rate of grievances filed. 7. The proportion of female employees: over 40% in the Group. 8. The proportion of female supervisors: over 20% in the Group.	1. A 98% completion rate of human rights training. 2. A 98% completion rate of ethics training for key departments. 3. Zero laborers and foreign migrant workers charged recruitment fees. 4. Zero children in child labor. 5. Zero case filed in discrimination. 6. A 100% resolution rate of grievances filed. 7. The proportion of female employees: over 45% in the Group. 8. The proportion of female supervisors: over 25% in the Group.
	Friendly workplace	1. Zero occupational injury incidents. 2. Emergency evacuation drills are conducted at least once a year. 3. A 95% completion rate of safety and health trainings.	1. Zero occupational injury incidents. 2. Emergency evacuation drills are conducted at least once a year. 3. A 95% completion rate of safety and health trainings.	1. Zero occupational injury incidents. 2. Emergency evacuation drills are conducted at least once a year. 3. A 95% completion rate of safety and health trainings.
Corporate governance	Towards the enterprise sustainable operation	Maintenance of positive operating profit .	Maintenance of positive operating profit .	Maintenance of positive operating profit .
	Legal compliance	1. Fines not more than NT\$1 million punished by the local government. 2. Zero Priority findings in the RBA audit process.	1. Fines not more than NT\$1 million punished by the local government. 2. Zero Priority findings in the RBA audit process.	1. Fines not more than NT\$1 million punished by the local government. 2. Zero Priority findings in the RBA audit process.
Suppliers	Working together on sustainable development	1. A 100% recovery rate of signed RBA agreements from the top 30 suppliers. 2. A 100% completion rate of greenhouse gas inventory and verification for key suppliers. 3. A 100% completion rate of greenhouse gas inventory for secondary suppliers. 4. A 100% completion rate of greenhouse gas inventory plan for third-category suppliers. 5. A 100% compliance rate of smelters for sourcing conflict-free minerals.	1. A 100% recovery rate of signed RBA agreements from the top 30 suppliers. 2. A 100% completion rate of greenhouse gas inventory and verification for key suppliers. 3. A 100% completion rate of greenhouse gas inventory for secondary suppliers. 4. A 100% completion rate of greenhouse gas inventory plan for third-category suppliers. 5. A 100% compliance rate of smelters for sourcing conflict-free minerals.	1. A 100% recovery rate of signed RBA agreements from the top 30 suppliers. 2. A 100% completion rate of greenhouse gas inventory and verification for key suppliers. 3. A 100% completion rate of greenhouse gas inventory for secondary suppliers. 4. A 100% completion rate of greenhouse gas inventory plan for third-category suppliers. 5. A 100% compliance rate of smelters for sourcing conflict-free minerals.



Chapter 2

Company Profile

GCE was established in 1981 and the main business is a professional manufacturer of printed circuit boards. The head office is located in Zhongli Industrial Zone, Taoyuan City, Taiwan, and the Company also has manufacturing plants in Suzhou and Changshu in China. Since customers are all over the world, there are offices in the United States, Europe, Japan, South Korea, Malaysia, Singapore, Thailand and Shenzhen to provide products and services to customers in real time.

GCE has always adhered to the spirit of “Financial integrity, proactive attitude, steadfast manner, and sustainable operation” since its establishment to shoulder the care of employees and social responsibilities and to move steadily towards sustainable development. Meanwhile, with the attitude of “integrity, accountability, professionalism, and innovation” towards customers, GCE provides more high-performance and innovative electronic products.

Company Profile

(I) Date of establishment: September 5, 1981

(II) Chronicle of Events

1980

1982

Obtained certification from UL in the United States.

1986

Completed research and development of multi-layer boards.

1988

Increased the capital to NT\$90 million.

1990

Increased the capital to NT\$198 million.
Started production of eight-layer boards.

1992

Ranked 816th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

1994

Completed the plan for full-plant automation promoted by the Industrial Development Bureau.
Turnover exceeded NT\$100 million for the first time in August.
Ranked 628th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

1996

Increased the capital to NT\$600 million. Turnover exceeded NT\$300 million for the first time in September.
Selected by the Industrial Development Bureau as a pilot plant to undergo training to establish the ISO-14001 system.
Ranked 282nd in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises and 13th in Commonwealth Magazine's Top 1,000 Manufacturers' Operational Performance.

1998

Listed in March. Increased the capital to NT\$1,773 million in June.
Ranked 174th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2000

Started production and sales of 20-layer boards in March.
Increased the capital to NT\$3,247.66 million in August.
Started construction of the Suzhou plant in Mainland China in October.
Turnover exceeded NT\$1 billion for the first time in November.
Ranked 153rd in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2000

1981

Founded as a limited company in September with a capital of NT\$10 million.
The plant was built in Taoyuan City and mainly manufactured printed circuit boards.

1984

Increased the capital to NT\$30 million and changed the Company's legal status to company limited by shares.

1987

Increased the capital to NT\$60 million.

1989

Increased the capital to NT\$160 million.

1991

Increased the capital to NT\$243.8 million, and the Financial Supervisory Commission approved the public offering.

1993

Increased the capital to NT\$ 300 million.
Obtained ISO-9002 certification in June.
Worked with Chunghwa Computer to plan full-plant automation promoted by the Industrial Development Bureau.
Ranked 681st in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

1995

Turnover exceeded NT\$220 million for the first time in September.
Obtained approval from the Industrial Development Bureau for a major investment of NT\$200 million to increase the introduction of foreign workers.
Ranked 383rd in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

1997

Increased the capital to NT\$990 million in August.
Turnover exceeded NT\$500 million for the first time in October.
Obtained ISO-14001 certification from the Merchandise Testing Bureau in October.
Turnover exceeded NT\$600 million in December for the first time.
Ranked 186th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.
Ranked 132nd in the Top 500 International Chinese Enterprises.

1999

Started production and sales of 16-layer boards in March.
Obtained QS-9000 certification in June.
Increased the capital to NT\$2,688.8 million in July.
Turnover exceeded NT\$700 million for the first time in November.
Ranked 178th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2001

Obtained TL-9000 certification in August.
Increased the capital to NT\$3,908.7 million in August.

2003

Suzhou GCE's 10-layer board products received customer endorsement in the second quarter.
Introduced the ORACLE ERP system successfully in September.

2005

Increased the capital to NT\$4,889,168,110 in November.
The Company's profit after tax exceeded NT\$1 billion for the first time.
Ranked 193rd in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2007

Ranked 157th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2009

Increased the capital to NT\$5,691,758,410 in October.
Ranked 188th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2011

Ranked 210th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2013

Ranked 201st in Commonwealth Magazine's Top 2,000 High ROE Enterprises.

2015

Successfully developed copper coin-embedded PCB.
Ranked 174th in Commonwealth Magazine's Top 2,000 Manufacturing Enterprises.

2017

Established the Audit Committee and Compensation Committee in June.
Ranked 181st in Commonwealth Magazine's Top 2,000 Manufacturing Enterprises.

2019

Consolidated revenue in December exceeded NT\$ 2 billion one more time since 2014.
Ranked 177th in Commonwealth Magazine's Top 2,000 Manufacturing Enterprises.

2021

Consolidated revenue exceeded NT\$2.5 billion for the first time in November.
Annual consolidated revenue hit a record high of NT\$26.6 billion.
Ranked 159th in Commonwealth Magazine's Top 2,000 Manufacturing Enterprises.

2000

2002

Increased the capital to NT\$4,104.135 million in October.

2004

Issued convertible corporate bonds of NT\$600 million in April.
Increased the capital to NT\$4,437.475 million in July.
Ranked 182nd in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2006

Increased the capital to NT\$5,118,080,990 in June.
Ranked 169th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2008

Increased the capital to NT\$5,527,528,550 in July.
Ranked 163rd in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2010

Ranked 219th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2012

Ranked 219th in Commonwealth Magazine's Top 1,000 Manufacturing Enterprises.

2014

Consolidated revenue for the whole year exceeded NT\$20 billion for the first time.
Ranked 177th in Commonwealth Magazine's Top 2,000 High ROE Enterprises.
Ranked top 10 in average salary growth among listed companies in 2014 and won "Remuneration Progress Award" from the Stock Exchange.

2016

Decreased the capital to NT\$5,522,468,410 by cancelling 12,666 thousand shares of treasury stock in August.
Ranked 172nd in Commonwealth Magazine's Top 2,000 Manufacturing Enterprises.

2018

Ranked 173rd in Commonwealth Magazine's Top 2,000 Manufacturing Enterprises.

2020

Consolidated revenue in April hit a new monthly high of NT\$2.23 billion.
Ranked 146th in Commonwealth Magazine's Top 2,000 Manufacturing Enterprises.

2022

Consolidated revenue exceeded NT\$3 billion for the first time in May.
Decreased the capital to NT\$4,918,390,570 by capital reduction of 54,648,784 shares in July.
Annual consolidated revenue hit a record high of NT\$32.8 billion.
Ranked 130th in Commonwealth Magazine's Top 2,000 Manufacturing Enterprises.
Honored as one of the Top 100 Enterprises by foreign investors.

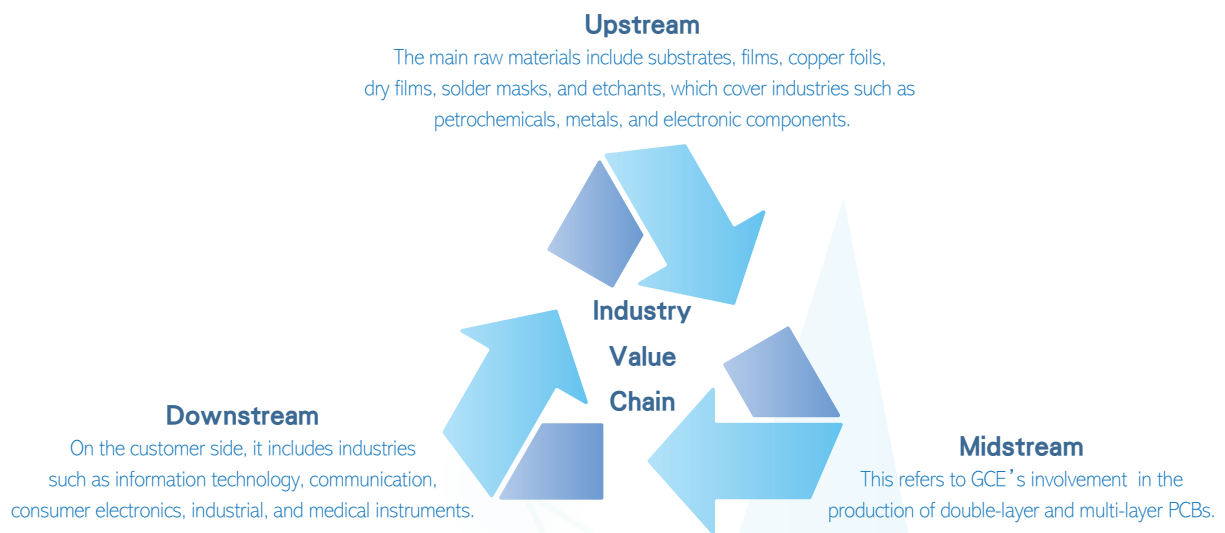
2010

2020

I. Brand image and operations strategy

The Company manufactures and sells double-layer and multi-layer printed circuit boards (PCBs), which play a crucial role in electronic component assembly and signal transmission. These PCBs are essential components in various industries, including general information technology, communication, and consumer products, as they provide support and interconnections for electronic components within electronic devices.

The Company’s operations strategy lies in communication and computer-related products, such as servers, internet boards, laptop boards, base stations, mobile phones and tablet computers. In the future, GCE will gradually and strategically develop cloud products, such as cloud servers, storage device boards as well as boards for devices connected to the internet and extend to high-value-added consumer products such as smartphones, laptop boards, and automotive PCBs.



Meanwhile, in response to customer’s quality requirements and environmental protection requirements, the Company continued its investments to improve the manufacturing process in 2022, maintain international certifications of ISO-9001, ISO-14001, ISO 45001, IECQ QC 080000, IATF 16949 and ISO 27001, and established a sound mechanism for quality management and risk management to ensure the fulfillment of customers’ needs.

(I) Short-term business development plan:

1. Continuously improve production technology

GCE has been investing in professional research and development personnel to enhance its production technology for a long time. Currently, the Company has the capability to mass-produce products with intricate processes such as microvias, fine-line circuits, 52-layer boards, and heavy copper. In response to high-level and high-value-added products, with the development trend of electronic systems toward thin, light, short, and high-reliability, the PCB process is moving toward the demand for high-density wiring, thin, fine-line, small holes, and heavy copper with high-reliability, etc. Plus, in terms of the trend of cloud technology, the Company is increasing the production of high-layer count servers and PCBs for network communication.

2. Improve on-time delivery rate

Delivery times are extremely important to customers. If we make customers' production lines stop and they suffer heavy losses as a result, it will cause damages for loss of goodwill and orders to GCE, not to mention that most of the customers are internationally renowned manufacturers. We can only accurately and comprehensively grasp our own resources and capabilities, carefully select customers, serve customers to the best, cooperate on improving production schedules, and increase on-time delivery rates for customers' orders.

3. Improve process yield and capability, enhance production efficiency, and shorten manufacturing time

- (1) Establish a proper division of labor mechanism, plants in Taiwan focus on research and development and the production of high-value-added products, while plants in China serve as a significant manufacturing base.
- (2) Improve process yield to reduce scrap rates and production costs, while also accelerate delivery speed to meet customers' demands.
- (3) Optimize process with measures such as layout utilization, multi-drilling for stacked boards, and the introduction of new equipment such as automatic loading/unloading machines and solder mask DI exposure machines.

4. Reduce raw material costs

Continue to develop new suppliers and materials to reduce raw material costs.

5. Smart plants

Promote AI education and training, cultivate talent, and launch internal projects for process optimization; meanwhile improve and optimize product structure for fostering the development of smart plants that emphasizes enhanced labor productivity, automation, environmental protection, and energy efficiency.

(II) Long-term business development plan

1. Continue to progress towards higher-level boards, for example,
2. Continue to strive for a substantial number of orders for high value-added cloud server boards, network communication boards, and base station boards.
3. Shorten production lead times, optimize process and yield rate, and improve service quality and customer satisfaction.

4. Smart manufacturing

Continuously promote the initiative of smart plants, cultivate AI talent, invest in process and yield optimization, enhance energy and resource efficiency, and implement measures to conserve consumption for effectively implementing the benefits of greenhouse gas reduction, propelling towards the goal of net-zero emissions.

In general, GCE is able to continue to invest manpower and resources in product R&D, quality improvement, and customer satisfaction to meet the current and future needs of customers, strengthen the Company's physique and momentum, continue to expand the market amid peer competition, and work hand-in-hand with customers to achieve a shared vision.

II. Corporate governance structure

Department	Main functions
Shareholders' Meeting	■ The highest decision-making body of the Company. ■ Exercise the authority and power in accordance with the provisions of the Company Act and other relevant laws and regulations.
Audit Committee	■ Review the Company's accounting system, financial status, financial reporting procedures and handling procedures for major financial business activities. ■ Review whether the compilation of the Company's financial statement is truthful, complete and transparent. ■ Review whether asset acquisition or disposal, engagement in derivatives trading, loan to others, endorsements and guarantees, and mergers, demergers, acquisitions or transfer of shares, comply with laws, administrative rules and the internal regulations of the Company. ■ Other duties in accordance with the articles of association, corporate governance code or resolutions of the Board of Directors.
Compensation Committee	■ Formulate and regularly review policies, systems, standards and structures for performance evaluation and remuneration of directors, supervisors and managers. ■ Regularly assess and determine the remuneration of directors, supervisors and managers.
Auditing office	■ Inspect and evaluate the internal control system and provide advice in response to the analysis and evaluation.
Taiwan Plant	■ In charge of PCB production and quality, production line management, production planning, and equipment maintenance.
Suzhou Plant	■ In charge of PCB production and quality, production line management, production planning, and equipment maintenance.
Changshu 1st Plant	■ In charge of PCB production and quality, production line management, production planning, and equipment maintenance.
Changshu 2nd Plant	■ In charge of PCB production and quality, production line management, production planning, and equipment maintenance.
Quality Center	■ Implement the plan for the quality control target and comprehensively manage the quality system operation, quality management related matters and customer service.
General Administration Division	■ Plan and implement various human resources management systems. ■ Integrate and plan information systems. ■ Plan and supervise various environmental protection and industrial safety matters of the Company and maintain a positive work environment and personal safety of employees.
Procurement Center	■ Procure high-quality, low-cost raw materials that meet market needs.
Business Center	■ Manage the Company's product marketing and customer development comprehensively.
Financial Center	■ In charge of financial operation and planning, fund management and various financial matters such as accounting and tax affairs.

III. Governance structure of the Board of Directors

(I) Selection mechanism of directors

GCE has established a board director selection mechanism, where the term of office for directors is three years. The process of director nomination and selection is based on a candidate nomination system, evaluating the candidates’ qualifications, opinions from independent directors, as well as compliance with regulations such as the “Articles of Association,” “Procedures for Election of Directors,” “Corporate Governance Best Practice Principles,” “Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies,” and “Article 14-2 of the Securities Exchange Act.” In addition, a comprehensive evaluation would include candidates’ industry experience, professional competence, board diversity, independence, and the opinions of stakeholders and submit to the board of directors for review. During the nomination and selection process, the independence of the candidates, their spouses, and relatives within three degrees of kinship from the Company is carefully verified, and the candidates are voted on by the shareholders through an open and fair selection process.

Moreover, according to the Company Act, shareholders who hold more than one percent of the total issued shares of the Company may submit a written list of candidates for directors.

(II) Structure and operations of the board of directors

The current board of directors consists of nine members, comprising three directors who also serve as employees, accounting for 33% of the board. There are three independent directors, representing another 33%. It is anticipated that after amending the Company’s Articles of Association, there could be one more seat for independent directors, achieving the goal of a total of four independent directors.

Among the directors, there are three female members, accounting for 33% of the board. The age distribution of directors is as follows: one director aged between 41 to 50, two directors aged between 51 to 60, three directors aged between 61 to 70, two directors aged between 71 to 80, and one director aged between 81 to 90. This diversity in age and gender representation fulfills the goal of promoting a younger board and achieving the 33% target of female directors on the board.

The Chairman of the board is elected from among the directors by a two-thirds majority vote of the directors present, with approval from more than half of the attending directors. The current Chairman is Yang Cheng-Tse, who has been serving the Company from the grassroots level in various positions. Being quite familiar with the Company’s products and operations, he is also equipped with strong leadership and communication skills across various departments. Under his guidance, the Company has achieved steady growth and actively pursued sustainability goals. Hence, with his rich experience, effective communication with directors and heads of the departments, and accurate responses to customer demands, he also promotes an overarching vision for environmental protection, social responsibility, and corporate governance to meet stakeholders’ expectations.

01

Chairman Yang Cheng-Tse/Male

Professional competence and ESG-related experience

- Graduated with an MBA from Pace University, New York. Previously served in various positions in the Company, including business specialist, deputy manager, manager, director, assistant manager, and senior vice president. He possesses expertise in operational judgment, operations management, crisis handling, industry knowledge, international market insights, leadership, and decision-making, leading the Company to achieve continuous and stable growth in business operations.
- Regarding issues of sustainable development, in addition to leveraging his own professional abilities and the Company’s business and governance experience, during the year 2022, he actively engaged in continuing education, participating in courses offered by the Taiwan Institute of Sustainable Energy and the Taiwan Corporate Governance Association, delving into topics related to net-zero transformation and opportunities. Furthermore, through advanced ESG courses, he continues to enhance and put into practice the value of circular and low-carbon innovations. He also addresses and monitors greenhouse gas emissions, energy and resource management, waste and hazardous materials management, occupational safety and labor health, service quality and customer satisfaction, climate change risks and opportunities, water resource management, legal compliance, information security, operational performance (shareholders’ equity), human rights assessments, and significant sustainability issues concerning suppliers.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	CEO	7	7	100%

02 Director Yang Chang-Chi/Male

Professional competence and ESG-related experience

- Former Chairman of the Company. He possesses expertise in operational judgment, operations management, crisis handling, industry knowledge, international market insights, leadership, and decision-making.
- The director continuously focuses on ESG development issues. He actively participates in the board of directors' regular oversight of ESG greenhouse gas inventory and verification schedules, which encompass overall strategic direction, goal setting and progress reporting, greenhouse gas inventory results, and the execution of green energy procurement.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	N/A	7	6	85.7%

03 Director Lin Lien-Mei/Female

Professional competence and ESG-related experience

- Graduated from Ming Chuan University, equipped with abilities in operations management, industry knowledge, and international market insights.
- Regarding ESG development issues, besides her professional abilities and corporate business and governance experience, she actively pursues further education on sustainable energy development. In 2022, she participated in the Taishin 30 Sustainability and Net Zero Summit Forum, exploring net-zero transformation and opportunities, to promote topics related to maximizing energy efficiency and effectively reducing environmental impact for enterprises.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	N/A	7	7	100%

04 Director Yang Chang-Ching/Male

Professional competence and ESG-related experience

- Graduated from the Department of Mechanical and Electro-Mechanical Engineering, Tamkang University. Former deputy manager of manufacturing, equipment and production management, manager of the computer department, and current special assistant to the Chairman. He possesses abilities in operational judgment, accounting and financial analysis, operations management, crisis handling, industry knowledge, international market insights, leadership, and decision-making.
- Regarding ESG development issues, the director has consistently been actively promoting energy-saving and carbon-reduction initiatives. He proposed the updating of group lighting equipment and initiated energy-saving investment projects such as replacing energy-consuming equipment with more energy-efficient alternatives and procuring machinery and equipment with lower power consumption. Through employee training, a culture of energy conservation and awareness was fostered, and proposals to adjust work processes were implemented to achieve energy-saving goals. Although the total carbon emissions slightly increased as production capacity has upscaled, GCE will continue to make improvements.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	N/A	7	7	100%

05 Director Yang Cheng-Jung/Female

Professional competence and ESG-related experience

- Graduated from the Department of Law, National Chung Hsing University. Former Manager of Legal Department. She possesses expertise in operational judgment, operations management, crisis handling, industry knowledge, international market insights, leadership, decision-making, and legal professional abilities.
- The director consistently follows the development of ESG issues. As GCE pledges to comply with the Responsible Business Alliance (RBA) Code of Conduct and it is important to proactively establish objectives for labor, environmental, safety, and ethical matters. The Company continuously traces progress and monitors compliance, working with suppliers to achieve commitments to sustainable development.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	N/A	7	7	100%

06 Director Jinxiang Investment Co., Ltd. Representative: Tsai Jung-Tung/Male

Professional competence and ESG-related experience

- Graduated with an MBA from Indiana University, United States. Former Manager of Legal Department. He possesses expertise in operational judgment, operations management, crisis handling, industry knowledge, international market insights, leadership, decision-making, and legal professional abilities.
- In terms of sustainable development, the director consistently promotes goals of carbon reduction, waste reduction, and water conservation while regularly reviewing their progress. Specific measures include the replacement of energy-efficient lighting, phasing out outdated air-conditioning units, upgrading public facilities, process improvement initiatives, and implementing smart manufacturing solutions.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	N/A	7	7	100%

07 Independent Director Hsieh Cheng-Chou/Male

Professional competence and ESG-related experience

- Graduated from the Department of Industrial and Systems Engineering, Chung Yuan Christian University; EMBA program at Sun Yat-Sen University (Guangzhou). He possesses expertise in operational judgment, operations management, crisis handling, industry knowledge, international market insights, leadership, and decision-making.
- In terms of sustainable development issues, the director, with his extensive governance experience and professional expertise, regularly monitors the Company's carbon reduction and environmental safety-related matters. In 2022, he participated in the Sustainable Net Zero Summit, discussing the future blueprint of collaboration between industry, government, and academia in pursuit of sustainability, providing enterprises with cutting-edge sustainable environmental recommendations.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	Audit Committee	7	7	100%

08 Independent Director Chiang Wen-Shih/Male

Professional competence and ESG-related experience

- Graduated from the Department of Business Management, Datong College of Engineering. He possesses abilities in accounting and financial analysis, operations management, crisis handling, industry knowledge, and international market insights.
- In terms of issues related to ESG development, the director consistently promotes environmental, safety, and health activities. Not only help the Company comply with relevant domestic regulations in this area, but also align with international standards by advocating for an environmental, safety, and health management system. In October 1997, GCE obtained ISO 14001 environmental management system certification, demonstrating our commitment to environmental protection and reducing impact on the environment.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	Audit Committee	7	7	100%

09 Independent Director Lin Tzu-Ying/Female

Professional competence and ESG-related experience

- Graduated from the Department of Law, National Chung Hsing University. She possesses expertise in operations management, crisis handling, industry knowledge, international market insights, leadership, and legal professional abilities.
- In terms of issues related to sustainable development, the director leverages her professional expertise and governance experience to assist the Company in adhering to the GRI framework for preparing sustainability reports for ensuring the accuracy and integrity of the sustainability report.

Functional committee	Date of appointment	Position in the management team	Meetings held	Actual attendance	Attendance rate
N/A	2021.07.20	Audit Committee	7	7	100%

(III) The Board of Directors' supervision mechanism for operations and sustainable development

The Board of Directors serves as the highest governance and risk management unit, overseeing the Company's development strategies, supervising the management, and being accountable to the Company and shareholders. It ensures the proper functioning of all operational processes and internal controls within the corporate governance system, in accordance with laws, the Articles of Association, or resolutions of the Shareholders' Meeting. In addition, the Board of Directors also reviews and approves the annual and quarterly financial reports, evaluates the effectiveness of internal control systems, and approves resolutions from each functional committee. Independence and transparency are essential requirements of the Board of Directors, and the Directors and Independent Directors exercise their duties and powers independently. Moreover, each Functional Committee would also oversee their independence, assisting the Board of Directors in supervising accounting, auditing, financial reporting processes, financial controls, internal controls and legal compliance, and the quality and integrity of decision-making for investments to enhance the performance of corporate governance. Regarding issues of sustainable development, the Board of Directors holds regular and nonscheduled meetings to review action plans and risk management measures related to operational activities and sustainability issues. This ensures the accuracy of reporting, identifies implementation obstacles and performance outcomes, and effectively supervises progress and resource allocation. The Board of Directors authorizes the President and the Sustainable Development Committee for handling operational activities (including suppliers) and sustainability issues, respectively. They formulate and promote climate action strategies and risk management measures, establish short-, medium-, and long-term plans, assess performance outcomes, and report to the Board of Directors on significant issues regularly or as needed. All relevant decisions are recorded in meeting minutes and followed up on subsequent progress accordingly.

(IV) Continuing education of directors

Members of the Board of Directors participate in regular and nonscheduled operational and sustainability training courses organized or signed up by the Company's dedicated unit. In 2022, each member of the Board is required to attend at least 6 hours of training annually. This commitment ensures that Board members possess a substantial level of knowledge and awareness of operational matters and sustainability issues, keeping abreast of the latest trends and developments in these areas.

Title	Name	Organizer	Course title	Hours
Independent Director	Hsieh Cheng-Chou	Taiwan Corporate Governance Association	Advanced Practice Sharing of Audit Committee: Towards Audit Committee 3.0	3.0
		Taiwan Institute for Sustainable Energy (CommonWealth Magazine)	Taishin 30 Sustainability and Net Zero Summit Forum - Net Zero Transformation and Business Opportunities	3.0
		Taiwan Stock Exchange Corporation	2022 Meeting for the Release of the Reference Guide for the Exercise of Duties and Powers of Independent Directors and Audit Committees and Publicity to Directors and Supervisors.	3.0
		Securities and Futures Institute	2022 Publicity on Preventing Insider Trading	3.0
			2022 Publicity on Legal Compliance for Internal Transactions of Company's Shares	3.0
Independent Director	Chiang Wen-Shih	Taiwan Corporate Governance Association	How the Audit Committee Implements Review of Financial Statements	3.0
			The 18th Corporate Governance Summit Forum (2022)	3.0
Independent Director	Lin Tzu-Ying	Accounting Research and Development Foundation in Taiwan	Common Deficiencies in Corporate Financial Reporting and Best Practices for Legal Compliance with Internal Audit and Internal Control Laws and Regulations	6.0
		Taiwan Institute of Directors	Analysis of International Trends and Case Studies in Climate Change Development	6.0

Title	Name	Organizer	Course title	Hours
Director	Yang Chang-Chi	Securities and Futures Institute	Corporate Governance 3.0 from the Prosecutor and Investigator's Perspectives	3.0
		Taiwan Corporate Governance Association	Attaining New Heights in Corporate Governance - Building a Company with Business Integrity	3.0
Director	Yang Cheng-Tse	Taiwan Corporate Governance Association	ESG Series Advanced Course: Unraveling the Real Value of Circular and Low-Carbon Innovation - Understanding Circular Economy and Governance	3.0
		Taiwan Institute for Sustainable Energy	Taishin 30 Sustainability and Net Zero Summit Forum - Net Zero Transformation and Business Opportunities	3.0
Director	Lin Lien-Mei	Taiwan Institute for Sustainable Energy	Taishin 30 Sustainability and Net Zero Summit Forum - Net Zero Transformation and Business Opportunities	3.0
		Taiwan Corporate Governance Association	The Key to Sustainable Business - External Innovation	3.0
		Taiwan Academy of Banking and Finance (UBS)	Online Seminar for Listed and OTC Company Directors and Supervisors on Corporate Governance in the Second Half of 2022	3.0
Director	Yang Chang-Ching	Taiwan Institute for Sustainable Energy	Taishin 30 Sustainability and Net Zero Summit Forum - Net Zero Transformation and Business Opportunities	3.0
		Securities and Futures Institute	2022 Publicity on Preventing Insider Trading	3.0
		Taiwan Corporate Governance Association	Interpreting Significant Judgments in Corporate Governance: Focusing on Director's Responsibility	3.0
Director	Tsai Jung-Tung	Securities and Futures Institute	2022 Publicity on Preventing Insider Trading	3.0
		Taiwan Corporate Governance Association	Interpreting Significant Judgments in Corporate Governance: Focusing on Director's Responsibility	3.0
		Taiwan Corporate Governance Association	Analyzing Ransomware Threats and Formulating Cybersecurity Strategies	3.0
		Taiwan Institute of Directors	Analysis of International Trends and Case Studies in Climate Change Development	3.0
		Taiwan Insurance Institute	International Anti-Corruption Efforts and Whistleblower Protection and Discussions on Anti-Money Laundering Measures	3.0
Director	Yang Cheng-Jung	Independent Director Association Taiwan	In-Depth Analysis of Insider Trading and Breach of Trust under the Securities Trading Act - Practical Case Studies	3.0
			How to Analyze Financial Statements to Assess a Company's Business Operations	3.0

In addition, besides the above courses, the directors stay informed of relevant updates through publications or courses organized by the Taiwan Corporate Governance Association, which helps enhance their various professional competencies.

(V) Remuneration and performance of directors

The remuneration for directors (including independent directors) can be categorized into two parts: firstly, the transportation expense incurred while traveling to other companies or doing business on behalf of the Company; secondly, the director's remuneration, according to the Articles of Association, if the Company makes profits for the year, the remuneration is determined based on the profits, and the Board of Directors shall resolve no more than one percent of the profits allocated as the director's remuneration.

As for the evaluation of the compensation for each director and his/her performance, it is carried out according to the "Director Performance Evaluation Guidelines." This evaluation takes into account factors such as the Company's annual operational performance, the level of involvement and contributions of each director in the Company's operational performance. For independent directors, their compensation is assessed with reference to industry standards, considering attendance rates, individual performance, and the Company's operational performance. Both evaluations are subject to review by the Compensation Committee before submitting to the Board of Directors for approval.

In addition to the abovementioned evaluations, the Board of Directors (including functional committees) is regularly evaluated on an annual basis in terms of its internal performance, and it is also evaluated by an external professional independent organization or a team of external experts and scholars once a year. The scope and content of these evaluations will be continuously improved, considering sustainability trends, and incorporating environmental protection or social responsibility issues in the future.

■ Board of Directors Performance Evaluation

1. The overall evaluation of the Board of Directors is conducted based on its actual operational performance and includes the following aspects: (1) Level of participation in the Company's operations, (2) Enhancement of the Board's decision-making quality, (3) Composition and structure of the Board, (4) Director selection and continuing education, and (5) Internal controls.
2. Each director's performance evaluation is carried out by the directors themselves and includes the following aspects: (1) Understanding of the Company's goals and missions, (2) Awareness of director's responsibilities, (3) Level of participation in the Company's operations, (4) Management of internal relationships and communication, (5) Director's expertise and continuing education, and (6) Internal controls.
3. The performance evaluation of functional committees is conducted by the committee members themselves and includes the following aspects: (1) Level of participation in the Company's operations, (2) Awareness of committees' responsibilities, (3) Enhancement of the committee's decision-making quality, (4) Composition and structure of the committee, and (5) Internal controls.
4. The evaluation focuses on aspects such as the level of participation in the Company's operations, awareness of the functional committee's responsibilities, decision-making quality of functional committees, composition and member selection of functional committees, and internal controls.

■ Evaluation Results for 2022:

1. The self-assessment result of the "Board of Directors" is 93 points, which has been reported to the Board of Directors as a reference for the performance, remuneration, and nomination of board members.
2. The average self-assessment result of the "Functional Committees" is 91 points, which has been reported to the Board of Directors as a reference for the performance, remuneration, and nomination of committee members.
3. An external organization, "Dalee Finance Consulting Co., Ltd.," was entrusted by the Company to assess the effectiveness of the Board of Directors from January 1, 2022, to December 31, 2022. The assessment covered seven major aspects, including (1) Composition and structure of the Board of Directors, (2) Decision-making quality of the Board of Directors, (3) Authorization of the Board of Directors, (4) Supervision of the Board of Directors, (5) Communication and information dissemination of the Board of Directors, (6) Risk management and crisis handling, and (7) Other factors. The assessment was conducted through online self-assessment and on-site visits to the Company. The results were reported to the Board of Directors as a reference for remuneration and continuous enhancement of Board functions.

Recommendations from the assessment:

- (1) Board of Directors’ professional competence and decision-making effectiveness: Members of the Board of Directors possess diverse expertise required for company operations, and the number of seats and female representation are appropriate.
- (2) Risk management: In addition to formulating various control policies, regular employee awareness or training sessions are conducted annually to enhance risk awareness. The Information Security Officer has been appointed, and an information security unit is in place to carry out information security controls. Moreover, the management of intellectual property is reported annually to the Board of Directors. The Company reports to the Board of Directors on sustainable development strategies, action plans, and ESG-related information at least once a year.
- (3) For other improvement recommendations and the Company’s responses to future improvement plans or actions, please refer to the 2022 Annual Report.

IV. Functional committees

1. Audit committee

GCE’s Audit Committee, consisting of three independent directors, is responsible for overseeing various matters, including the appropriate expression of the Company’s financial statements, the selection (or dismissal) and independence of the CPAs, decisions on the Company’s internal controls, and the effective implementation of those controls, compliance with relevant laws and regulations, as well as the management of existing or potential risks. (For details, please refer to the 2022 Annual Report)

In 2022, the committee held six meetings, and the attendance status is provided in the table below. Moreover, the communication between the internal auditing officer and the CPAs is as follows:

- (1) The Auditing Office conducted audits according to the annual plan for internal control cycles and management guidelines and prepares the “Internal Audit Plan,” which is submitted to the Chairman for approval and sent to the members of the Audit Committee before the end of the following month upon completion of each audit item. The Internal Audit Officer reports audit operations during each Audit Committee meeting (at least four times) and communicates face-to-face with independent directors. In cases of major violations discovered by the internal audit staff and major damages suffered by the Company, reports will be prepared immediately for submit and each member of the Audit Committee will be notified.
- (2) The CPAs provide quarterly reports on the audit or review results of the financial statements, as well as other communication matters required by relevant laws, during the Audit Committee meetings. If the independent directors have any opinions, they are discussed, or the CPAs may provide additional clarifications. In case of significant special circumstances related to the Company’s finances or operations, the CPAs would promptly report to the Audit Committee. The CPAs are also invited to attend important Board of Directors meetings to provide professional opinions. In 2022, communication with the CPAs remained smooth and productive.

Identity	Name	Meetings to be held for the year	Actual attendance times	Times of delegating meeting attendance	Actual attendance rate (%)
Independent Director (convener)	Hsieh Cheng-Chou	6	6	0	100%
Independent Director (member)	Chiang Wen-Shih	6	6	0	100%
Independent Director (member)	Lin Tzu-Ying	6	6	0	100%

2. Compensation committee

GCE's Compensation Committee is responsible for formulating and regularly reviewing policies, systems, standards, and structures related to the performance evaluation and compensation of directors and managers. The committee also conducts regular assessments, determines the compensation for directors and managers and completes the annual review by the first quarter of the following year.

(For details, please refer to the 2022 Annual Report)

The selection mechanism for the committee is established in the Compensation Committee Organization Charter, and the committee is consisting of three independent directors who hold regular meetings for discussion. If necessary, relevant personnel may be invited to attend and participate in the discussions. The operation of the committee has been running smoothly.

Identity	Name	Meetings to be held for the year	Actual attendance times	Times of delegating meeting attendance	Actual attendance rate (%)
Independent Director (convener)	Hsieh Cheng-Chou	3	3	0	100%
Independent Director (member)	Chiang Wen-Shih	3	3	0	100%
Independent Director (member)	Lin Tzu-Ying	3	3	0	100%

V. Top management team

The President and top management team of GCE are the operational and supervisory units in accordance with the Company's internal rules and regulations. In operations, the integration of issues related to sustainability with the Company's operational activities is gradually established. Regular monthly meetings are held to report operational status, progress on issues related to sustainability, and performance outcomes to the members of the Board of Directors through written and oral presentations.

The roles and responsibilities of the members of the top management team concerning operational activities and sustainability issues are outlined in the following table:

Title	Name	Experience and Education	Competences that can influence the Company
Sales President	Huang Hsi-Kuei	Graduated from National Tsing Hua University GCE Senior Vice President	Operations, Products
			Service quality and customer satisfaction
Plant President	Tsai Chin-Sung	Department of Chemical Engineering, Yuan Ze University GCE Manager, Director, Assistant Manager	Operations, Products, Plant Management
			Occupational safety and labor health Water resources management Waste and hazardous substance management Greenhouse gas emissions
Senior Vice President	Yang Te-Ming	MBA, University of Leicester Bull Will Group COO GCE Suzhou President	Operations, Products, Plant Management
			Occupational safety and labor health Water resources management Waste and hazardous substance management Greenhouse gas emissions

Title	Name	Experience and Education	Competences that can influence the Company
Senior Vice President	Lung Chung-Chih	Department of Industrial and Systems Engineering, Chung Yuan Christian University Tripod Technology Quality Assurance Vice President Compeq Electronics Quality Assurance Assistant Manager	Operations, Quality Assurance
			Service quality and customer satisfaction
Vice President	Liu Min-Cheng	Datong College of Engineering GCE Manager, Director, Assistant Manager	Operations, ESG
Vice President	Yang Chang-Chin	Department of Accounting, Tamkang University GCE Manager, Director, Assistant Manager	Operations, Finance
			Operational performance (Shareholder's equity)
			Legal compliance
Vice President	Lin Sheng-Hsien	GCE Manager, Director, Assistant Manager	Operations, Human Resources, EHS
			Human Rights Assessment Climate change risks and opportunities Occupational safety and labor health Information security
Assistant Manager	Li Shun-Chien	Department of Business Administration, Chung Yuan Christian University GCE Manager, Director	Engineering
			Greenhouse gas emissions
Assistant Manager	Li Sung-Ying	U. of Missouri-Columbia, USA, Chemical Engineering, Ph.D. GCE Manager, Director	Quality Assurance
			Service quality and customer satisfaction
Assistant Manager	Yang Ta-Kun	Department of Industrial Management, Chung Hua University EMBA, National Chiao Tung University GCE Manager, Director GCE Changshu 2nd Plant Manager	Procurement
			Supplier Human Rights Assessment
Assistant Manager	Chung Cheng-Hsuan	Department of Business Administration, Fu Jen Catholic University GCE Manager, Director	Products
			Service quality and customer satisfaction
Assistant Manager	Li Jui-Pin	Chien Hsin University of Science and Technology GCE Manager, Director	Operations, Plant Management
			Occupational safety and labor health Water resources management Waste and hazardous substance management Greenhouse gas emissions
Assistant Manager	Hu Chih-Kung	Chien Hsin University of Science and Technology GCE Manager, Director	ESG
Auditor General	Wu Ming-Yuan	National Chin-Yi University of Technology GCE Manager, Vice Director	Audit, ESG

VI. Operational performance

Management Approach

Continue to respond to market changes, observe product trends, invest in research and development and innovative products, and continue to enhance the Company's operational performance to identify and respond to related impacts.

Impacted by the pandemic, economies around the world over the past three years mostly remained stagnant or even deteriorated and nearly half of the population in each country has contracted COVID-19. Fortunately, as vaccination was popularized in 2022, borders reopened and anti-pandemic measures were lifted and people started to have their life back.

It is worth mentioning that "Working from Home," "Shared Office," and "Cloud Storage and Processing" have become common practices adopted by a lot of enterprises for the sake of saving costs and improving efficiency. The increased 5G and cloud transmission speeds and the growing size of data being processed have all expedited the demand for servers and internet equipment. The performance of GCE hence grew in 2022; both the revenue and profit hit record highs. (For details, please refer to the 2022 Annual Report)

Unit: NT\$1000

Item	2022	2021	2020
Direct Economic Value (A)			
Gross Profit	88,728,088	6,371,040	5,290,580
Non-operating net income	77,395	29,700	33,423
Distributed Economic Value (B)			
Operating expenses	1,329,986	1,065,632	1,183,931
Employee compensation and benefits	1,375,306	1,180,068	988,355
Community investment	4,737	3,740	2,240
Payments to funders	1,730,446	892,244	182,216
Business with the government	1,820,458	1,121,664	631,270
Retained Economic Value (A)-(B)	2,544,550	2,137,392	2,335,991

Chapter 3

Climate Change

Climate change has become a global issue, particularly raising the correspondent active changes in domestic regulations and markets. It now has become a systemic risk that the Company cannot avoid. With significant impacts on ecological environment, human society, and the Company's survival, the Company also faces inevitable challenges in developing appropriate response strategies.

As a manufacturer in the electronic components industry, it is inevitable that GCE's operations and products would have high emissions of greenhouse gases. Therefore, the Company proactively identifies, formulates, and implements actions to mitigate climate change. Meanwhile, we also strive to leverage our position as a benchmark company to promote collaboration across the value chain, aiming to address climate change risks and opportunities while enhancing overall organizational resilience.

Thus, GCE adopted the "Task Force on Climate-related Financial Disclosures" (TCFD) as the methodology for climate change mitigation actions. The Board of Directors and senior management lead operational strategies and measures to address identified climate change risks and opportunities, continuously monitoring progress toward set targets. Moreover, the Company enhances its transparency from disclosures of information related to climate governance, actively responds and interacts with various sectors and industries to foster sustainable practices.

I. GCE’ s Climate Governance

Climate change has become a material topic impacting the Company’s sustainable development. In response to this, a prudent governance structure has been established, comprising three levels, and each level is responsible for different duties. This structure facilitates effective leadership and supervision from top to bottom, ensuring the implementation and reporting of progress and obstacles for achieving a continuous improvement management cycle.

(1) Board of directors

As the highest governing unit, the Board of Directors recognizes climate change as a material risk and a potential opportunity for future business development, integrating climate change into the Company’s risk management mechanism. The Board of Directors regularly receives reports on climate change action strategies and risk management measures, confirming the content, progress, implementation obstacles, and performance outcomes to effectively supervise progress and resource allocation.

For instance, regarding the issue of greenhouse gas emissions, the Board of Directors receives quarterly progress reports and performance outcomes, demonstrating effective supervision and control.

(2) Sustainable development committee

Given that climate change is a material topic of the Company, it shall be included in the discussion of the Sustainable Development Committee. The committee director holds regular meetings with head executives from various departments as the committee members and appoints a coordinator.

In terms of operation, the coordinator regularly consolidates climate environmental trends raised by functional groups and presents the identified climate change risks and opportunities.

The committee then reviews, formulates, and promotes climate change action strategies and risk management measures, developing short-, medium-, and long-term plans, assessing performance, and subsequently reporting to the Chairman and the Board of Directors.



(3) “Environmental and health safety group” and “energy management group”

GCE takes into account the TCFD and industry-specific guidelines to identify climate change risks and opportunities, combining with scenario analysis to deliberate on strategies and corresponding measures. The materiality assessment of finances or operations regarding climate change risks and opportunities is based on expertise, industry characteristics, and analyses presented by consulting experts. The Company also considers the identification results from 2021 to confirm the impact severity and the likelihood of occurrence of each issue. As a result, corresponding measures are formulated to address the risks related to “rising prices of greenhouse gas emissions” and “persistent high temperatures” and to seize opportunities related to “adoption of new technologies.”

II. GCE’ s Climate Strategy

GCE takes into account the TCFD and industry-specific guidelines to identify climate change risks and opportunities, combining with scenario analysis to deliberate on strategies and corresponding measures. The materiality assessment of finances or operations regarding climate change risks and opportunities is based on expertise, industry characteristics, and analyses presented by consulting experts. The Company also considers the identification results from 2021 to confirm the impact severity and the likelihood of occurrence of each issue. As a result, corresponding measures are formulated to address the risks related to “rising prices of greenhouse gas emissions” and “persistent high temperatures” and to seize opportunities related to “adoption of new technologies.”

■ Climate risk impact, scenario analysis, and response strategies

Rising prices of greenhouse gas emissions			
Scenario analysis/ reference scenario	Impacts on value chain		
	Raw materials	Design	Transportation
As regulatory carbon fees have increased every year by national policies and impose strict limitations on greenhouse gas emissions, effective reduction plans must be proposed; it also has to consider the possibility of additional environmental taxes (e.g., carbon border taxes) in the future. Meanwhile, regulations are gradually requiring low-carbon materials, and the issue of carbon footprint is gaining prominence, placing more restrictions on greenhouse gas emissions.	■ Short- and medium-term risks: Greenhouse gas emissions from transportation are impacted by carbon fees expenditures and the replacement of low-carbon transportation equipment, causing the increasing cost of raw material transportation. ■ Long-term risks: Due to environmental taxes (e.g., carbon border taxes) or the application of low-carbon raw materials and technologies, the cost of raw materials will continue to rise, impacting operating cost.	■ Short- and medium-term risks: Greenhouse gas emissions from products and processes are influenced by carbon footprint calculations, carbon fees expenditures, equipment replacement, and the trends of promoting low-carbon materials, impacting operating cost. ■ Long-term risks: To be in line with the trend of achieving net-zero emissions, regulations continue to impose strong energy-saving and carbon reduction requirements. For example, products may need to meet low-carbon standards or indicate their carbon footprint, leading to ongoing impacts on the cost of raw materials and low-carbon technology research and development, as well as exposure to regulatory and market exclusion risks.	■ Short- and medium-term risks: Greenhouse gas emissions from transportation are impacted by carbon fees expenditures and the replacement of low-carbon transportation equipment, causing the increasing cost product transportation. ■ Long-term risks: Due to environmental taxes (e.g., carbon border taxes) or the application of green construction method and low-carbon materials, the cost of raw materials will continue to rise, impacting operating cost.
Description of the level of impacts (including financial impacts) and the likelihood of occurrence			
A. Level of impacts: Due to laws and regulations or government requirements, as well as expectations from stakeholders (e.g., customers), the Company may face near-term effects on its operations. If appropriate measures are not taken, there is a reasonable prediction that the Company’s business may be significantly reduced, hindered, or even result in substantial losses (more than NT\$ 10 Million). B. Likelihood of occurrence: It is rated as high to extremely high.			

Rising prices of greenhouse gas emissions

Overall response strategies and risk management measures

■ Short- and medium-term overall response strategies

- A. The Company actively gathers information on low-carbon technologies and engages in independent or collaborative research and development of low-carbon technologies or processes.
- B. Continue to entrust a third-party independent organization to conduct greenhouse gas emission verification in accordance with ISO 14064-1; comprehensively consolidate the overall greenhouse gas emissions of the organization by following scientific reduction methods from the Science-Based Targets (SBT) to establish concrete and feasible targets for carbon reduction; assess the promotion of carbon footprints and continuously accumulate practical experience, along with the introduction of relevant tools.
- C. Establish quotas for carbon fees and greenhouse gas emissions as well as carbon pricing analysis strategies; simultaneously, evaluate greenhouse gas reduction plans and strives for policy incentives.
- D. Procures competitive renewable energy sources and purchase carbon credits as a response measure for unavoidable greenhouse gas emissions.
- E. Initiate replacement mechanisms and allocate budgets continually for high-energy-consuming equipment and operations.

■ Long overall response strategies

- A. Continuously optimize the Company ’s quotas of carbon fees and greenhouse gas emission as well as carbon pricing analysis strategies; also improve greenhouse gas reduction plans.
- B. Continue to procure competitive renewable energy sources and progressively increases their proportion. For the remaining unavoidable greenhouse gas emissions, acquire carbon credits as a response measure, aiming to achieve the goal of net-zero emission in the future.

Persistent high temperatures

Scenario analysis/ reference scenario

Impacts on value chain

Raw materials

Design

Transportation

Based on the location of the headquarters in Taiwan, the conditions were set using the MIROC-ESM-CHEM climate model. Considering the RCP4.5 stable scenario of greenhouse gas, temperature and rainfall trends are projected as follows: 24.95° C and 5.76 mm/day for 2030, and 24.84° C and 5.36 mm/day for 2050. (Taiwan Climate Change Protection Information and Adaptation Knowledge Platform)

■ Short- and medium-term risks:

Climate models indicate significant fluctuations in temperature and rainfall, estimating the interconnection between carbon peaking and the ecosystem. In the value chain, there may be the following impact scenarios, leading to the increase of operating cost and damages, but still controllable:

- A. During summer and autumn, high temperatures become common. With insufficient availability of renewable energy, it would lead to electricity shortages and the possibility of power rationing.
- B. Delay in the inventory or procurement of raw materials.
- C. The high temperatures within the plant premises can affect labor safety, leading to an increase in the occurrence or severity of occupational injuries due to heatstroke, lack of concentration, and fatigue among staff.
- D. The temperature rise may impact the stability of process water temperature and electricity, thereby affecting the yield and output stability of company products, resulting in increased scrap rates and raw material reserve costs.
- E. Delay in the estimated lead time for product delivery.

■ Long-term risks:

With stable control of greenhouse gas emissions, temperature and rainfall simulations stabilize to a state similar to the long-term average. The possibility of floods and impact are predictable, and raw materials, design, and transportation to the process and operation are controllable, maintaining operating cost and damages at a stable level.

Persistent high temperatures

Description of the level of impacts (including financial impacts) and the likelihood of occurrence

A. Level of impacts:

The consolidated estimated loss is from more than NT\$10 million to less than NT\$100 million.

B. Likelihood of occurrence:

It is rated as medium.

Overall response strategies and risk management measures

■ Short- and medium-term overall response strategies

- A. Initiate replacement mechanisms and allocate budgets continually for high-energy-consuming equipment and operations.
- B. Plan for energy storage facilities or uninterrupted power supply systems to cope with the electricity shortage during power rationing periods.
- C. Discuss insurance coverage and underwriting conditions with insurance companies, or even explore new insurance products to cope with risks.

■ Long overall response strategies

- A. Implement waterproof barriers and enhance drainage systems in certain regions to mitigate flood risks.
- B. Continuously plan for energy storage facilities or uninterrupted power supply systems to cope with electricity shortages during power rationing periods. Develop plans for the proportion of renewable energy sources to reduce or avoid disruptions in production lines caused by power shortages.
- C. The Company collaborates and shares risk warning, monitoring data, and communications with strategic alliances or academic institutions.
- D. Regularly hold drills to train employees in emergency response mechanisms.

Scenario analysis/ reference scenario

Impacts on value chain

Raw materials

Design

Transportation

Based on the location of the headquarters in Taiwan, the conditions were set using the MIROC-ESM-CHEM climate model. Considering the RCP8.5 stable scenario of greenhouse gas, temperature and rainfall trends are projected as follows: 23.57° C and 3.73 mm/day for 2030, and 25.54° C and 6.34 mm/day for 2050. (Taiwan Climate Change Protection Information and Adaptation Knowledge Platform)

■ Short- and medium-term risks:

There is little variation in temperature and rainfall simulations. The possibility of floods and impact are still predictable, and raw materials, design, and transportation to the process and operation are controllable, maintaining operating cost and damages at a stable level.

■ Long-term risks:

The greenhouse gas emissions are significantly high, and climate models indicate greater fluctuations in temperature and rainfall. Global temperatures are rising, and there are no distinct four seasons. Extreme weather with high temperatures become a common phenomenon, and temperatures are likely to surpass historical highs. The possibility of typhoons or heavy rainfall events is anticipated to be much higher compared to the annual average. These factors lead to the increase of operating cost and damages, reaching an uncontrollable degree:

- A. The residential electricity usage may displace industrial usage, resulting in frequent occurrences of power shortages and power rationing.
- B. Delay in the inventory or procurement of raw materials.
- C. The variability in raw materials, design, and transportation has increased, and there have been significant technological changes.
- D. The high temperatures within the plant premises can affect labor safety, leading to an increase in the occurrence or severity of occupational injuries due to heatstroke, lack of concentration, and fatigue among staff.
- E. The temperature rise may impact the stability of process water temperature and electricity, thereby affecting the yield and output stability of company products, resulting in increased scrap rates and raw material reserve costs.
- F. The environment of plant becomes harsh; it is necessary to upgrade the facility and environmental conditions, and even relocate or downsize the plant.
- G. Delay in the estimated lead time for product delivery.

Persistent high temperatures

Description of the level of impacts (including financial impacts) and the likelihood of occurrence

A. Level of impacts:

Due to laws and regulations or government requirements, as well as expectations from stakeholders (e.g., customers), the Company may face near-term effects on its operations. If appropriate measures are not taken, there is a reasonable prediction that the Company's business may be significantly reduced, hindered, or even result in substantial losses (more than NT\$ 10 Million).

B. Likelihood of occurrence:

It is rated as high.

Overall response strategies and risk management measures

■ Short- and medium-term overall response strategies

- Implement waterproof barriers and enhance drainage systems in certain regions to mitigate flood risks.
- Properly utilize water resources, reduce the intensity of water use, and reduce dependence on water resources.
- Initiate replacement mechanisms and allocate budgets continually for high-energy-consuming equipment and operations. Plan for energy storage facilities or uninterrupted power supply systems to cope with the electricity shortage during power rationing periods.
- The Company collaborates and shares risk warning, monitoring data, and communications with strategic alliances or academic institutions.
- Regularly hold drills to train employees in emergency response mechanisms.

■ Long overall response strategies

- Implement waterproof barriers and enhance drainage systems in whole regions and even evaluate the design plan for elevating the base level to mitigate flood risks.
- Continuously purchase for energy storage facilities or uninterrupted power supply systems to cope with electricity shortages during power rationing periods.
- Shorten the utilization period of renewable energy and increase the proportion of renewable energy year by year to avoid disruptions time and range in production lines caused by power shortages.
- Continue to collaborate and share risk warning, monitoring data, and communications with strategic alliances or academic institutions.
- Discuss insurance coverage and underwriting conditions with insurance companies, or even explore new insurance products to cope with risks.

Note 1: The value chain framework includes raw materials, design, and transportation.

Note 2: The timeframes are defined as follows: short-term refers the period before 2025, medium-term spans from 2026 to 2030, and long-term covers the period from 2031 to 2050.

Climate opportunities impact, scenario analysis, and response strategies

Adoption of new technologies			
Scenario analysis/ reference scenario	Impacts on value chain		
	Raw materials	Design	Transportation
Government policies and laws and regulations actively urge companies to use low-carbon energy sources. For instance, with the implementation of the “Climate Change Response Act,” the government encourages companies to propose reduction plans and offers preferential policies. Simultaneously, the carbon footprint issue has emerged, leading customers to introduce low-carbon products in the market to avoid carbon taxes. This impacts product pricing and market share, thereby demanding the adoption of low-carbon strategies throughout the supply chain.	■ Short- and medium-term opportunities: A. Actively assess and research and develop the application of low-carbon materials. B. Conduct carbon footprint assessments specifically for certain products. ■ Long-term opportunities:: A. Continuously assess and research and develop the application of low-carbon materials. B. Conduct carbon footprint assessments for all products.	■ Short- and medium-term opportunities: A. Develop and design low carbon technologies and processes for low carbon materials. B. Conduct carbon footprint assessments specifically for certain products. ■ Long-term opportunities: A. Continuously develop and design low carbon technologies and processes for low carbon materials to expand brand strategy and awareness. B. Develop new design and manufacturing processes to compete for policy incentives to obtain greenhouse gas emission credits or net-zero emission credits. C. Conduct carbon footprint assessments for all products.	■ Mid- and long-term opportunities: Seek low-carbon energy sources or transportation methods with lower greenhouse gas emissions.

Description of the level of impacts (including financial impacts) and the likelihood of occurrence

A. Level of impacts: Due requirements, as well as expectations from stakeholders (e.g., customers), the Company may face near-term effects on its operations. The Company will plan and implement projects in advance that will affect our operations in the near future, so that all or part of our business will have the opportunity to increase to a certain degree (e.g., increase in revenue of NT\$10 million or more) or lead the profitability period by two to three years. B. Likelihood of occurrence: It is rated as high to extremely high.

Overall response strategies and risk management measures

■ Overall response strategies A. The Company actively collects information on low-carbon raw materials and technologies and promotes independent and collaborative research and development of designs and processes. Meanwhile, the Company will increase the proportion of renewable energy to reduce greenhouse gas emissions, mitigating the impact of government-imposed carbon fees and electricity prices to reduce cost and to expand the budget space for research or the purchase of low-carbon raw materials, technologies, or processes. B. Adopt “Net Zero Emissions” as a brand strategy, with short-term goals focusing on preparation and strategic planning. For the medium-term goals, the objective is to focus on providing low-carbon technology in the market, while the long-term goal is to introduce products that achieve net zero emissions.

Note 1: The value chain framework includes raw materials, design, and transportation.

Note 2: The timeframes are defined as follows: short-term refers the period before 2025, medium-term spans from 2026 to 2030, and long-term covers the period from 2031 to 2050.

III. GCE’ s Climate Risk Management

- Climate change risks are addressed through an independent identification, assessment, and management process. The Company utilizes its existing risk management mechanisms to control climate change risks. Each unit identifies the materiality of climate change risks, management measures, obstacles, and performance outcomes. This information is then consolidated and presented to the coordinator of Sustainable Development Committee and the meetings of the “environmental and health safety group” and the “energy management group.” Subsequently, the content of the discussion, the proposed strategies and risk management measures will be submitted to the Sustainable Development Committee to review, formulate and promote climate change action strategies and risk management measures, confirm the short-, medium- and long-term plans, and manage the results of the performance evaluation. Finally, the Board of Directors, as the highest governing unit, oversees the implementation and results of the climate change action strategies and risk management measures through risk management reports, audit reports, and quarterly performance evaluations to ensure effective management of material climate change risks.
- In the current year, the major climate risks identified, such as “rising prices of greenhouse gas emissions” and “persistent high temperatures,” have undergone the abovementioned process. Through the trend assessments from internal expertise, resources and manpower, a comprehensive consideration of practical experiences and market dynamics as well as the external experts, the Company will confirm the operations and impacts on a rolling basis, and risk management measures for material climate change risk issues will be adjusted to respond to the risks, assessing whether to activate the risk treatment, transfer or acceptance assessment operation in the future.

IV. GCE’ s Climate Indicators and Targets

- In response to the opportunities and brand strategies arising from climate change, the Company will increase resource investment in renewable energy and energy-saving measures in the market. We will actively collect information on low-carbon raw materials, continuously develop low-carbon processes and technologies to mitigate the impact of climate change. Simultaneously, we will initiate carbon footprint assessments and adopt relevant tools to accumulate practical experiences and improve our practices.
- Based on the evaluation of scenario analysis and impacts to the value chain, GCE has formulated short-, medium-, and long-term goals in the table below to respond to climate change risks and opportunities. By implementing the comprehensive response strategies and risk management measures mentioned above, the Company aims to achieve its established targets and objectives. With the rolling adjustment mechanism, the Sustainable Development Committee and functional groups will regularly assess performance, incorporate climate change-related risks and opportunities, review climate change action strategies, risk management measures, and optimize short-, medium-, and long-term plans. Later, the results will be reported to the Board of Directors to ensure the Company’s commitment to climate change and sustainable development goals.
- For the greenhouse gas emissions in 2022, please refer to Chapter 4, Environmental, for detailed information.

■ Climate Risks and Opportunities, Indicators and Targets

Climate Risks	Climate Opportunities	Targets	2022~2023 (short-term)	2025 (medium-term)	2030 (long-term)
Rising prices of greenhouse gas emissions	Adoption of new technologies	The headquarters’ greenhouse gas emission management (Base Year 2019)	8%/year reduction in carbon emissions (Scope 1+ Scope 2)	10%/year reduction in carbon emissions (Scope 1+ Scope 2)	30%/year reduction in carbon emissions (Scope 1+ Scope 2)
Persistent high temperatures		Adoption of new technologies	8%/year green power use	10%/year green power use	30%/year green power use



Chapter 4

Environmental

Organizational net-zero carbon emissions

GCE aims to achieve net-zero emissions in the Group through greenhouse gas assessments, reduction, energy conservation, and the adoption of green energy as strategic and action plans to identify and respond to related impact activities.

No.	Item	2022 Target	2022 Performance
1	GHG emissions compared with the previous year	2% lower	24.5% lower
2	Energy intensity compared with the previous year	2% lower	23.21% lower
3	Water saving rate	12%	11.7%
4	Number of cases in which the Company was fined more than NT\$1 million by the local government under environmental laws and regulations	0 case	0 case
5	The reduction in GHG emissions compared to the Base year	2%	7.6%
6	The proportion of green power usage of overall energy usage	8%	7%

Regarding environmental protection issues, the environmental and health safety group and the energy management group of the Sustainable Development Committee collaboratively lead and guide various units in implementing action plans and risk management measures.

This year, GCE included issues of “energy and resource management” and “greenhouse gas emissions” as the material topics for environmental protection. In this chapter, we will elaborate the performance of execution, impacts on business activity, corresponding measures, and future plans. Furthermore, we will disclose information on water resources, waste, and hazardous substance management, demonstrating GCE’s efforts in environmental sustainability.

I. Energy Management

1. The strategy of energy management

GCE has introduced the ISO 50001 energy management system, which has been certified by a third party, SGS (Certificate No. TW21/10568), to grasp the Company’s energy usage. By utilizing the P-D-C-A cycle of improvement and management methodology, the Company optimizes the management mechanism and efficiency of its usage by taking the “smart plant” and “energy conservation” as the main strategies, and at the same time introduces the use of green alternative energy sources, which is expected to achieve the goal of reducing GHG emissions, and to move towards sustainable operation.

2. The organization and structure of energy management

GCE has established the Sustainable Development Committee with a dedicated cross-functional “energy management group.” This group is responsible for energy policies, enhancing energy usage efficiency, implementing energy-saving measures, and evaluating the use of renewable energy. The group also formulates various action plans, creates short-, medium-, and long-term plans, and promotes plant management measures. The coordinator of Sustainable Development Committee regularly convenes meetings to review the implementation progress, discuss impacts to the Company and trends, assess performance outcomes, and monitor goal achievements. Both the coordinator of Sustainable Development Committee and the “energy management group” regularly report the implementation progress, impacts to the Company and trends, performance outcomes, and goal achievements to the Sustainable Development Committee. During these meetings, action strategies and risk management measures are reviewed, and the progress and outcomes of the plans are confirmed. Finally, the summary of meeting content is reported to the Chairman and the Board of Directors, facilitating their effective supervision of progress and resource allocation.

3. The status of energy use

The main energy use of GCE is purchased electricity used in the business service process of each business location; and other uses are in a small amount.

Energy use analysis over the years					
Energy type	Unit	Region	2022	2021	2020
Purchased electricity	1000 kWh	Taiwan	174,626	173,861	165,596
		China	352,528	347,465	335,265
		Total	527,154	521,325	500,861
Diesel fuel	Liter	Taiwan	866,196	798,738	660,990
		China	52,978	30,896	28,906
		Total	919,174	829,634	680,896
Gasoline	Liter	Taiwan	23,207	23,510	23,235
		China	17,199	0	4,404
		Total	40,406	23,510	27,639
Gas	Liter	Taiwan	22,312	23,504	24,760
		China	0	0	0
		Total	22,312	23,504	24,760
Natural gas	Cubic meter	Taiwan	0	0	0
		China	2,555,985	2,695,121	2,293,466
		Total	2,555,985	2,695,121	2,293,466
Energy consumption	Megajoule	Taiwan	664,569,919	655,614,198	621,057,367
		China	1,235,252,562	1,352,320,787	1,282,963,482
		Total	1,899,822,481	2,007,934,985	1,904,020,848
Energy intensity	Megajoule/million revenue	Taiwan + China	57,948	75,465	81,374
Comparison with the previous year's growth/reduction ratio			-23.21%	-7.26%	

Note 1: Converted from the "Heat Content of Energy Products in the Energy Statistics Handbook 2021" published by the Bureau of Energy, Ministry of Economic Affairs. For example, electricity is 860 kcal/kWh, diesel fuel is 8,400 kcal/L, gasoline is 7,800 kcal/L, and natural gas is 9,000 kcal/L.

Note 2: Intensity is calculated using the total operating revenue (in NTD) reported in the 2022 annual report as the denominator.

Note 3: The total green energy procurement for the Group in 2022 was 131,457,600 (megajoule), but it is not included as actual consumption.

Note 4: The above energy consumption intensity is measured within the organization.

II. GHG emissions

1. GHG emissions policy

GCE recognizes that climate, environment, and ecology are impacted by GHG. In fulfilling our responsibility to protect the environment, we are committed to conducting the GHG inventory, accurately monitoring GHG emissions, establishing a database, proposing GHG reduction action plans, and developing short-, medium-, and long-term plans. GCE pledge and dedicate ourselves to four key objectives: (I) Continuously promote GHG reduction measures; (II) Actively assess and utilize renewable energy; (III) Comply with environmental laws and regulations and international requirements; (IV) Respond to the goal of achieving net-zero emissions.

2. The organization and structure of GHG management

GCE has established the Sustainable Development Committee, which includes the cross-functional groups of “the environmental and health safety group” and “energy management group.” These groups integrate environmental protection, GHG inventory, GHG emissions control, and GHG reduction measures to formulate various action plans, creates short-, medium-, and long-term plans, and promotes plant management measures. The coordinator of Sustainable Development Committee regularly convenes meetings to review the implementation progress, discuss impacts to the Company and trends, assess performance outcomes, and monitor goal achievements.

3. The status of GHG inventory

In response to the Financial Supervisory Commission’s “Sustainable Development Guidemap,” GCE continues to promote ISO 14064-1 greenhouse gas inventory activities and entrust independent third-party institute to conduct verification, establish a year-by-year database, effectively manage the Company’s overall greenhouse gas emissions, and strengthen information management, which will serve as an important basis for the planning of future policies on GHG emissions reduction and the rolling adjustment of the action plan. The greenhouse gas inventory is as follows:

- (1) Scope of inventory: All plants in Taiwan and China.
- (2) Base year: 2019.
- (3) Types and quantities of energy use, including purchased electricity, natural gas, diesel, gasoline, and gas, with their respective greenhouse gas emissions, as detailed in the analysis table below.

Analysis of GHG emissions				
Scope	Region	2022	2021	2020
1	Taiwan	19,134	25,056	22,440
	China	20,196	20,247	18,698
	Subtotal	39,330	45,303	41,138
2	Taiwan	88,884	87,278	84,339
	China	180,222	275,227	258,894
	Subtotal	269,106	362,505	343,233
3	Taiwan	17,111	17,379	
	China	7,793	16,293	
	Subtotal	24,904	33,672	
GHG emission intensity (tCO ₂ e/million revenue) % of reduction compared with the previous year	Taiwan and China	Scope 1 to Scope 3 10.17	Scope 1 to Scope 2 15.33 Scope 1 to Scope 3 16.59	Scope 1 to Scope 2 16.43
Comparison with the previous year’s growth/reduction ratio		-38.7%	-6.7%	-13.55%

Note 1: The aggregation of GHG: GHG emissions = energy use x GHG emission coefficient x GWP value.

Note 2: The emission coefficient is based on the “Greenhouse Gas Emission Coefficient Management Table (Version 6.0.4)” published by the Environmental Protection Agency, Executive Yuan

Note 3: The GWP values are based on the IPCC 2021 Sixth Assessment Report (AR6)

Note 4: The electricity coefficient (0.509 kgCO₂e/kWh) is based on the electricity emission coefficient released by the Energy Bureau, Ministry of Economic Affairs in 2021, and the electricity coefficient (0.5703 kgCO₂e/kWh) released by the Ministry of Ecology and Environment of the People's Republic of China in 2022.

Note 5: GHG emission intensity (tCO₂e/million revenue) is calculated to the second decimal place.

Note 6: The GHG emission intensity for 2021 and its comparison with the previous year’s growth/reduction ratio are calculated based on data from Scope 1 to Scope 2.

III. Low Carbon Strategy and Action Plans

GCE is dedicated to enhancing energy efficiency, implementing energy-saving measures, and evaluating the use of renewable energy in our energy management strategy and GHG emission policy. These efforts are complemented by various GHG reduction measures to achieve the goal of net-zero emissions.

Based on the results of the greenhouse gas inventory, external purchased electricity constitutes a significant portion. Therefore, the action plan is oriented towards proactive energy conservation measures, gradually advancing the future strategy of “smart plant.” Meanwhile, there is a continued emphasis on promoting a mindset shift among employees, encouraging a change in behavior that aligns with the Company’s values. Furthermore, various GHG reduction measures are implemented to effectively cope with the risks posed by climate change.

1. Equipment replacement and upgrading project

Item	Location	Measure for optimization	Energy savings result (kWh/year)	GHG emission reduction (tCO ₂)
1	Taiwan	Air conditioning chiller replacement	3,265,920	1,640
2	Taiwan	Air compressor replacement	3,152,000	1,582
3	Taiwan	Dormitory chiller replacement	691,200	352
4	Taiwan	Water pump replacement	714,548	364
5	Taiwan	Motor replacement	182,218	93
6	China	Air compressor replacement	1,802,880	1,034
7	China	Process chiller replacement	641,664	462

Note: The calculation of GHG emission reductions is rounded to the nearest whole number.

2. Process optimization project

(1) Electricity system optimization project

Specific currents within the electricity system can affect power supply safety and cause damages in transformers, circuits, and motor equipment. By controlling these specific currents, energy losses can be effectively reduced.

Benefit: Estimated energy saving about 648,000 kWh per year.

(2) Waste heat recovery from air compressors

Utilizing the existing heat from process equipment for recycling and providing hot water for workshop and dormitory use, achieving electricity savings and GHG emission reduction goals, and it also avoids direct emissions of heat to impact the environment nearby and employees.

Benefit: Achieved the energy saving of 3,045,404 kWh in 2022.

(3) Optimization of process drying section design

Optimizing the design of the process drying section to operate normally, aiming to achieve electricity savings and GHG emission reduction goals.

Benefit: Estimated energy saving of 255,744 kWh per year.

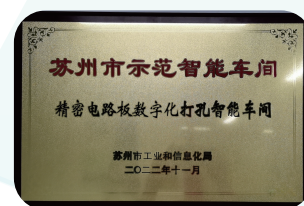
3. Smart plant project

(1) Smart monitoring system

- A. Monitor the electricity consumption of process equipment to ensure stability.
- B. Monitor faults or aging of process equipment to assess any increase in electricity consumption.
- C. Perform electricity consumption comparative analysis for process equipment to identify anomalies.
- D. Establish data collection and analysis to evaluate the configuration of process equipment.

(2) Smart control function

The Company's GHG emissions mainly come from electricity, which is primarily due to high energy-consuming process equipment such as motor systems and heating-cooling systems. By implementing smart control for timing and quantity, it can optimize water and electricity usage.



4. Employee's environmental awareness and lifestyle response program

- (1) Encourage employees to minimize the use of elevator in reasonable circumstances.
- (2) In areas with air conditioning, remind employees to keep doors and windows closed.
- (3) Encourage employees to turn off unnecessary lighting equipment when not in use.
- (4) Promote among all units to manually turn off electrical equipment such as rice cookers, water dispensers, computers, printers, and multi-function printer during off-duty hours, weekends, and holidays to reduce standby power consumption.
- (5) Occasionally promote the benefits of energy-saving and environmental awareness through activities, emails, or other means.

5. Continuous improvement mechanism and procurement management process

- (1) Conduct regular annual reviews of contract capacity utilization to ensure progress and performance results of action plans and short-, medium-, and long-term plans.
- (2) In the new equipment procurement process, increase energy-saving standards or GHG reduction efficiency as mandatory evaluation criteria for selecting suppliers.

IV. Other Environmental Protection Measures

1. Water resources management strategy and approach

Owing to the nature of the industry, stable supply of water resources is critical to the continuous operation of GCE. To utilize water resources efficiently, promote circular usage, and minimize the impact on water resources while systematically practicing ESG management, the followings are GCE's commitments to sustainable water resources management:

- (1) Establish a comprehensive water management system and organization to promote actions for water resource conservation.
- (2) Implement effective water quality management, ensuring that water discharge is better than the regulations and continuously optimizing waste liquid reduction, recycling, and resource reutilization.
- (3) Achieve sustainable water consumption balance, focusing on water recycling and circular use.
- (4) Provide safe drinking water and hygiene management, pledge to protect water watersheds in the vicinity of the plants, establish healthy and safe drinking water management and maintain a clean workplace.
- (5) Preserve a healthy water environment and enhance the value chain of water resources by promoting environmental education and maintaining habitat in the corridor of the discharge area. Through value chain communication and resource sharing, enhance the downstream value chain water resource risk assessment and resilience.

2. Water resources management

The current water sources mainly come from tap water/municipal water supply, groundwater, and river water. Water from conservation areas and sensitive water bodies are not used. The water use information is as follows:

(1) Taiwan

■ Tap water/municipal water supply: Dahan River Basin (Taiwan Shimen Reservoir).

Groundwater is from wells that have been approved for digging by the government.

The river water is taken from drivers in Taiwan.

(2) China

■ Tap water/municipal water supply: Yangtze River Basin.

In recent years, climate change has impacted rainfall and available water resources, causing corresponding water resource management risks. Although our plants did not experience operational impacts due to water resources in the 2022, GCE will continue to formulate water resource management action plans, monitor performance outcomes in a timely manner and adopt rolling adjustment management measures to effectively manage water resource utilization and mitigate environmental ecological impacts for ensuring the Company’s continuous operation.

■ Action plans for water resource management

- (1) Regularly calibrate water meters to ensure the accuracy of water consumption data.
- (2) Establish a database to collect and analyze overall information of water use.
- (3) Install water-saving devices to regulate water outflow.
- (4) Continue to replace old equipment; in the new equipment procurement process, consider water-saving certifications or efficiency evaluations as mandatory evaluation criteria for selecting suppliers.
- (5) Continue to promote the recycling and reuse and process improvement projects such as the incremental use of recycled water from electroplating, reuse of RO concentrated water, downward adjustment of overflow consumption in the whole plant, and change the water use of scrubbing towers to concentrated water, etc.
- (6) Develop a long-term water resource utilization plan, such as converting process wastewater for reuse to conserve water.
- (7) Promote proper water conservation awareness by displaying water-saving slogans near water facilities and fostering water-saving habits.
- (8) Set water-saving targets with a minimum annual achievement rate of 12%.

■ AI smart cooling tower

Currently, the process involves chemical dosing, resulting in significant water consumption and wastewater discharge, which is not aligned with environmental trends. To solve this, an AI smart cooling tower has been introduced, adopting environmentally friendly physical methods for water treatment, eliminating the use of chemical dosing, and significantly reducing water use.

Benefit: An annual water saving of 38,520,000 liters; GHG emissions reduction of 6 tCO₂e per year.

Unit: million liters

Analysis table for historical water usage				
Type of water	Region	2022	2021	2020
Tap water/ municipal water supply	Taiwan	2,085.88	2,162.20	2,269.48
	China	4,690.65	4,510.53	4,248.92
Groundwater	Taiwan	898.14	732.25	566.12
	China	-	-	-

Unit: million liters

Analysis table for historical water usage				
Type of water	Region	2022	2021	2020
River water	Taiwan	-	38.77	102.62
	China	-	-	-
Total water inflow	Taiwan and China	7,674.67	7,443.74	7,187.15
The total amount of effluent	Taiwan and China	7,033.69	6,866.66	6,767.45
Total amount of recycled water	Taiwan and China	895.86	973.93	957.91
Water saving rate	Taiwan and China	11.7%	13.1%	13.3%
Effluent saving rate	Taiwan and China	12.7%	14.2%	14.2%
Water intensity (million liters/ million revenue)	Taiwan and China	0.23	0.28	0.31
GHG emissions (t/CO ₂ e)	Taiwan and China	1,235.6	1,131.4	1,092.4

Note 1: The water use into CO₂ equivalents is 0.161 KgCO₂/ton in 2022 and 2021; 0.152 KgCO₂/ton in 2020. (CO₂ equivalent factor based on the announcement of Taiwan Water Corporation, Ministry of Economic Affairs in 2021).

Note 2: The numbers are rounded to second decimal place.

Note 3: Water saving rate: total amount of recycled water/total water inflow

Note 4: Effluent saving rate: total amount of recycled water/total amount of effluent.

■ Successfully became Suzhou's one of the first water-saving enterprises

In December 2021, the Suzhou Water Bureau issued a notification of "Further Improving the Establishment of Water-Saving Carriers in Suzhou." In response to the government's call, the Company actively participated in the application process to become a water-saving enterprise in Suzhou in 2022. The specific actions taken were as follows:

(I) Enhance leadership and organizational implementation

Established a water-saving leadership team, formulated an annual water usage plan, and set water-saving targets.

(II) Strengthen promotion and build awareness

Displayed water-saving slogans and regularly conducted training on water-saving management knowledge.

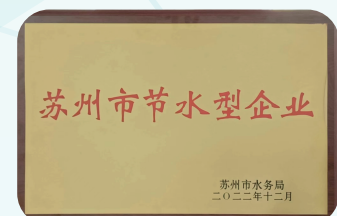
(III) Enhance technological improvements and implement measures

Implemented indirect cooling water recycling, achieved comprehensive water meter coverage in various areas, and strengthened management measures.

In September 2022, a water balance report was established. In October 2022, the Company submitted the application materials to the Water-Saving Office in Changshu. In December 2022, the Water Affairs Bureau in Suzhou issued an official document, and the Company was recognized as a successful water-saving enterprise.

3. Wastewater management

All of the GCE' plants are equipped with wastewater treatment facilities, employing biological, physical, chemical, and recycling treatment methods to meet local regulatory standards. For instance, the water quality complies with national limit values for Chemical Oxygen Demand (COD) at 120mg/L and Total Suspended Solids (TSS) at 50mg/L. GCE consistently maintains HSPM/QC 080000 certification. Moreover, rainwater management and water pollution diversion are being developed, and high-performance equipment is planned and allocated to meet requirements of laws and regulations of government.



The total wastewater discharge in 2022 was approximately 7,034 million liters, an increase of approximately 2.4% compared with 2021, but the emission intensity was reduced by approximately 17%. In 2022, the wastewater discharge volume of factories in Taiwan and China was about 2,961.1 million liters and 4,072.6 million liters, respectively, accounting for 42% and 58% of the total discharge. The wastewater discharged from each operation site is treated by the local wastewater treatment facilities, and it is confirmed to be in compliance with the discharge standards, and then legally discharged to Xinjie River in Taiwan and to the Taihu Lake Basin in China. As of the reporting date, the wastewater in Taiwan and China has been treated and discharged in accordance with the regulations, and has not had a significant impact on the local water areas.

The wastewater pollution prevention and control systems of the plants are actively reviewed and optimized regularly. In addition to complying with local environmental protection laws and regulations on wastewater discharge standards, and to cope with the impact of climate change, GCE will continue to invest in the enhancement of the efficiency of wastewater treatment facilities, the reduction of pollutants at the source, and the formulation of internal wastewater discharge control standards better than regulatory standards stipulated in the laws and regulations to minimize the impact of environmental pollution.

Unit: million liters

Analysis table for historical volume of wastewater				
Region	Discharge destination	2022	2021	2020
Taiwan	Surface water bodies and local sewage treatment facilities	2,961.1	3,001.4	3,045.8
China	Local sewage treatment facility	4,072.6	3,865.3	3,721.6
Total		7,034	6,866.7	6,767.5
Total wastewater discharge intensity (million liters/million revenue)		214.5	258.1	289.2

Note 1: The numbers are rounded to first decimal place.

4. Waste and hazardous substance management

(1) Air pollutant control

The air pollutants generated by the PCB process are mainly nitrogen oxides (NO_x), sulfur oxides (SO_x), VOCs and suspended particles. GCE has formulated complete management, operation and maintenance program, and has configured air pollution prevention and treatment equipment, such as dust collectors, for exhaust gas treatment. In addition to regular maintenance, GCE also actively optimizes ventilation and exhaust equipment on the sites, and conducts environmental testing on a regular basis, so that the detected pollutant content is less than that specified in the local environmental protection laws and regulations.

Types of pollutants	Unit	Region	2022	2021	2020
NO _x	Kg	Taiwan	2,023	1,897	1,564
		China	14,295	28,625	11,100
	Kg/million revenue	Taiwan and China	0.5	1.15	0.54
SO _x	Kg	Taiwan	15.3	14	12
		China	12,828	6,280	9,044
	Kg/million revenue	Taiwan and China	0.39	0.24	0.39
VOCs	Kg	Taiwan	10,670	10,633	9,375
		China	863	584	1,003
	Kg/million revenue	Taiwan and China	0.35	0.42	0.44
SO _x	Kg	Taiwan	308	290	206
		China	2,162	4,661	3,513
	Kg/million revenue	Taiwan and China	0.08	0.19	0.16

Note: The numbers are rounded to second decimal place.

(2) Waste management

Management approach

actively reduce the waste generated in the process and fully recycle it to identify and analyze related impact.

No.	Item	2022 Target	2022 Performance
1	Reuse of empty waste plastic barrels	Recycle more than 120 tons empty plastic barrels for reuse.	The actual annual recycling volume reached 156 tons.

All GCE's plants continue to maintain the effectiveness of the ISO 14001 environmental protection system. The waste generated by GCE is divided into two categories: general business waste and hazardous business waste. In addition to actively promoting the reduction of waste film residues, the Company has also implemented waste classification and recycling. Moreover, for waste removal, there are personnel designated to waste management and inspection. Legal and qualified companies are commissioned to dispose of waste in accordance with local laws and regulations, for example, recycling and reuse, incineration and landfill and recycling. There are also strict auditing and reviewing mechanisms to prevent the waste from harming the environment.

Unit: tons						
Region	Type of waste	Waste disposal	2022	2021	2020	Indicator
Taiwan	Non-hazardous waste	Reuse	61	24	66	GRI 306-4
		Recycle	1,208	1,437	1,270	
		Other	0	0	0	
		Incineration	807	706	799	GRI 306-5
		Landfill after incineration	0	0	0	
		Direct landfil	0	0	0	
China	Non-hazardous waste	Incineration	1,205	1,455	1,606	GRI 306-5
		Landfill after incineration	0	0	0	
		Direct landfill	0	0	0	
		Reuse	211	204	176	GRI 306-4
		Recycle	6,687	6,346	5,588	
		Other	0	0	0	
Total volume of non-hazardous waste			8,910	8,711	8,169	GRI 306-3

Unit: tons

Region	Type of waste	Waste disposal	2022	2021	2020	Indicator
Taiwan	Hazardous waste	Reuse	571	450	464	GRI 306-4
		Recycle	10,026	11,301	10,426	
		Other	0	0	0	
		Incineration	13	14	20	GRI 306-5
		Landfill after incineration	0	0	0	
		Direct landfill	0	0	0	
China	Hazardous waste	Incineration	2,670	1,094	1,159	GRI 306-5
		Landfill after incineration	0	0	0	
		Direct landfill	0	0	0	
		Reuse	20,737	18,377	17,252	GRI 306-4
		Recycle	23,779	26,444	25,877	
		Other	0	0	0	
Total volume of hazardous waste			47,199	45,929	44,308	GRI 306-3
Total volume of non-hazardous and hazardous waste			56,109	54,640	52,477	

Note 1: The numbers are rounded to the nearest whole number.

Note 2: All waste is disposed of off-site, and in the plants, only temporary storage facilities are available for waste sorting. (GRI 306-4 d)

Note 3: All waste consists of electronic waste from the electronics industry. (GRI-306-3)

Note 4: During waste transportation, all waste is weighed on scales to confirm the weight and registered according to regulations. (GRI-306-4 e / 306-5 e)

Note 5: Waste disposal complies with regulatory requirements, and there is no open burning, deep well injection, or dumping of waste. (GRI-306-5)

5. Resource and process optimization project

■ Process optimization to reduce the use of chemicals

In the original process, chemicals need to be added to the intermediate water tank to lower the ammonia content in wastewater for ensuring compliance with discharge standards. By optimizing the process, reconfiguring the sequence of operations, and allowing wastewater to enter the treatment system before the general wastewater equalization tank and physico-chemical and biochemical treatment systems, there is no need for adding additional chemicals to achieve legal discharge standards for wastewater, thereby reducing impacts to the environment.

Benefit:

1. Through process adjustments, wastewater quality is stabilized, complying with legal discharge standards.
2. Currently, 43 tons of chemicals can be saved, avoiding environmental impacts.

■ Replacement project for filter press machines

The replacement project for the filter press machines in the wastewater treatment facility resulted in lower moisture content in the produced sludge, leading to a decrease in sludge generation and reduced environmental impact.

Benefit:

1. Water in sludge reduced by approximately 10% compared to the outdated machines.
2. An estimated monthly reduction of 12 tons in wastewater sludge.

■ Stripping chemical optimization project

Since March 2022, an environmentally friendly inorganic stripping chemical was chosen instead of an organic one, reducing pollution concentration at the source and achieving GHG reduction targets.

Benefit:

An estimated monthly reduction of 2,870.7 kilograms of Chemical Oxygen Demand (COD) and 50.3 kilograms of total nitrogen.

■ Nitric acid replacement project in the process

Since nitric acid (HNO_3) is the main source of total nitrogen in wastewater and nitrogen oxides in waste gas, after the Company's research and development and evaluation, the process was changed to sulfuric acid and hydrogen peroxide, which can replace nitric acid to reduce the amount of total nitrogen in wastewater and nitrogen oxides in the waste gas for effectively achieving GHG reduction targets:

1. An annual estimated reduction of approximately 7,250 kilograms of total nitrogen in wastewater.
2. An annual estimated reduction of approximately 440 kilograms of nitrogen oxides in exhaust gases.



Chapter 5.

Social

Human rights as the foundation of sustainability

A company's operation is based on the dedication of employees. GCE takes the principles of following labor laws and regulations, protecting the dignity of employees, enhancing labor rights and interests, and promoting human rights policies as the framework for business development, regulation formulation, and enforcement operations. We uphold a non-discriminatory and respectful attitude toward employees and take good care of them through a reasonable salary system and carefully cultivate talents to identify and respond to impacts.

Friendly workplace

GCE actively promotes awareness of workplace health and safety with dignity, equality and respect, and upholds the spirit of continuous improvement by regularly and appropriately taking comprehensive evaluation measures to ensure that the Company implements occupational safety and labor health strategies for identifying and responding to the impacts.

No.	Item	2022 Target	2022 Performance
1	Satisfaction rate of courses held by the Company	90 points or higher	90 points
2	Employee complaint settlement rate	100%	100%
3	Violation of labor laws or agreements fined by local government exceeding NT\$1 million	0 case	0 case
4	Human rights training completion rate	95%	100%
5	Number of labor and migrant workers charged recruitment fee	0	0
6	Number employment of child labor	0	0
7	Occupational injury accident	0 case	0 case
8	Annual frequency of emergency response drill	At least once a year	One time
9	Occupational health and safety training completion rate	95%	100%

Note: No. 4 NT\$1 million, adopting the assessment of financial materiality as the basis.

I. Human Rights and Labor Relations

GCE places great importance on and supports human rights protection, and internally requires compliance with local labor laws and regulations, Code of Conduct of the Responsible Business Alliance (RBA), the protection of employee dignity, and the promotion of labor rights and interests, and is committed to promoting human rights policies as a framework for business development, regulation formulation, and enforcement.

In particular, GCE has established "Labor Risk Assessment and Handling Procedures" for human rights, regularly assessing human rights risks each year and proposing specific management plans for high risks. At the same time, in terms of education and training, human rights have been included in the training for new recruits and the annual mandatory course for all employees, and the completion rate was 100% in 2022, which can be found in the chapter of training mechanism.

■ The highest guiding principles of human rights and labor rights of the Company

1. All work must be voluntary (including internship students), and the employee has the right to leave or terminate his or her labor contract at any time with reasonable notice and without any form of retaliation. To this end, GCE will pay the full amount of the service fees for foreign workers and recruitment fees for new employees. Employees will not be required to reimburse the related expenses when they leave or terminate their employment contracts.
2. No child labor.
3. We will do our best to comply with the legal requirements and RBA requirements.
4. We comply with the Labor Standards Act, which stipulates that overtime work shall not exceed 46 hours per month; the RBA stipulates that, except for emergency or unusual circumstances, weekly working hours (including overtime work) shall not exceed 60 hours, and workers shall be allowed at least one day off per week.
5. Wages are paid in accordance with the wage relevant regulations, including regulations on minimum wage, overtime hours and statutory benefits.
6. Humane treatment and prohibition of unlawful harassment. °
7. Non-discrimination.
8. Free association. °
9. Diversity in the composition of the workforce.
10. Equal employment opportunities and prohibition of any form of discrimination and harassment, and commitment to a work environment free of discrimination and harassment.
11. Employees are encouraged to report discrimination, harassment, retaliation or threats.
12. We provide appropriate workplaces for employees.

GCE is committed to the highest guiding principles of human rights and labor rights, which are implemented in all aspects of the Company. In particular, we have established multiple and smooth communication channels to provide our employees with a complaint mechanism for those who have concerns or opinions about the Company’s management system, measures or personnel execution. At the same time, complaints can not only be made anonymously, but the Human Resources Department has a complaint mechanism in place to properly handle human rights and labor rights incidents.

The Human Resources Department upholds an independent, objective, and confidential attitude and takes responsibility for the investigation. Once the investigation is substantiated, the Human Resources Department will initiate the handling process, reply and communicate with employees, and review the management system or measures, or the personnel adjustment and punishment mechanism accordingly to continuously improve human rights and labor rights within the Company.

Under this mechanism, the settlement rate of employee complaint is 100%. At the same time, human rights and labor rights promotion and training, such as new employee orientation training and annual employee human rights courses, amounted to 10,561 hours in the Group in 2022, and the completion rate of human rights policy training is 100%. Meanwhile, we will carry out occasional promotions and periodic audits, and extend the requirements to our suppliers.

Item	2022	2021
Course hour	10,561	8,738
Completion rate	100%	100%

II. Compensation Policy and System

The starting salary, salaries, bonuses, and employee compensation of GCE are mainly based on the general standards of the industry, taking into consideration education, work experience, professional skills, job responsibilities, and future development and performance, with no differential or discriminatory treatment on the basis of race, class, language, religion, politics, nationality, sex, age, marriage or union status. The “Salary Management Regulations” and the “Annual Salary Adjustment Procedures” are to be followed by the Company and all employees.

GCE’s Salary and Compensation Committee meets regularly to discuss, evaluate and review the overall compensation policy and system based on our operational performance, social price index, industry salary levels, and job experience and professional skills, and submits them to the Board of Directors for approval. We hope that through an effective rolling adjustment mechanism, we can share GCE’s success with our employees to recognize their efforts and serve as an incentive for them to make continuous breakthroughs.

Therefore, in order to motivate all employees to create operational performance for GCE and let employees share the Company’s operating results, GCE has established the “Year-end Bonus Distribution Method” and “Production/Performance Bonus Distribution Method”:

- If there is a surplus at the end of the year, after-tax surplus will be appropriated and year-end bonuses will be paid to employees.
- If there is a surplus at the end of each month, production/performance bonuses will be paid.

Through the continuous efforts of GCE, this not only affirms the Company’s position as a quality and happy company trusted by its employees by taking into account the profitability of its operations and the rights of its workers, but also enables the investment market to support GCE’s efforts in social responsibility and human rights policies.

The following table shows “the number of full-time employees who are not in managerial positions, and the average and medium of the salaries of the full-time employees who are not in managerial positions”:

Unit: NT\$/thousand

Analysis of the number of full-time employees who are not in managerial positions, and the average and medium of the salaries of the full-time employees who are not in managerial positions			
Year	2022	2021	2020
Number of full-time employees	2,256	2,200	2,202
Average full-time employees’ salaries	887	765	683
Average salary increase over the previous year	16%	12%	
Median full-time employees’ salaries	721	623	574
Median salary increase over the previous year	16%	9%	

Note 1: Employees in managerial positions are not included.

Note 2: The number of full-time employees is the annual average.

Note 3: This table is rounded to the nearest dollar.

Unit: NT\$/thousand

Year	2022	2021
Average of the top five highest remunerations among TWSE/TPEX listed companies	20,058	18,256
Increase percentage in the highest individual remuneration compared to the total remuneration of the previous year	10%	-
Multiple of the highest remuneration to the median salary of employee (Note 1)	27.82	29.30
Salary growth rate (Note 2)	63%	-

Note 1: Annual total remuneration multiple = Annual total remuneration of the five individuals with highest salary / The ratio of the median of the annual total remuneration of other employees (excluding those in managerial positions).

Note 2: Annual total remuneration increase percentage = Ratio of increase in total annual remuneration for the five individuals with highest salary / The annual increase rate of median in total remuneration for all employees (excluding those in managerial positions)

III. Comprehensive Employee Care and Benefits

(I) Diverse and Smooth Communication Channels

GCE values employees' opinions and feelings about the organization's development or various operations, and provides a smooth and diversified communication channel or complaint mechanism through e-mail, telephone, and direct appointment for interview...etc.

At the same time, in order to provide employees with the opportunity to express their opinions or suggestions at any time and easily, GCE conducts regular or occasional ongoing advocacy with all employees to ensure that they are fully aware of and are willing to use the communication channels or complaint mechanisms to assist employees in resolving payroll, fairness and other rights and interests issues. Upon receipt of employee requests, the Company will adopt a positive and prudent attitude, appropriate communication and handling measures, so that employee opinions can be handled as soon as possible, promote the optimization of rules and regulations, and properly conclude cases. In compliance with laws and regulations, fairness and reasonableness, we strive to meet the expectations and needs of our employees, enhance the labor rights of all employees, and promote a barrier-free workplace.

Communication channels for complaints and suggestions

Item	Description
Complaint mechanism	- Based on the attitude of encouragement, the Company maintains a smooth channel for complaints, which can be handled by immediate supervisors or directly to the Human Resources Department. - These include suggestions for improvement of practices and measures, unfair treatment, discovery of wrongdoing, sexual harassment, employee assistance programs, or other rights and interests of life and work concerns. - During the process, the Human Resources Department is responsible for confidentiality and will not tolerate any form of retaliation against the complaining employee. - Ways and Means: - Put the complaint (suggestion) into the suggestion box (anonymous complaint is allowed) - E-mail address (hr@gce.com.tw) - Telephone: (03)461-2541 ext. 21210 to 21213 - Mail to "Human Resources Department"
Incentive system for improvement proposals	- We encourage employees to actively participate in various improvement activities in the factory. - In order to make it more convenient for employees to use, the incentive system for improvement proposals has been transformed into a digital one.
Complaint suggestion mailbox	- The staff will visit the mailbox daily to collect employees' opinions and related suggestions, so that employees' opinions can be processed as soon as possible, and to improve the rules and regulations to enhance the labor rights of all employees. - The complaint suggestion mailbox has been transformed into a digital one to make it more convenient for employees to use.
Employee Welfare Committee	- The committee members are selected from among the Company's employees who have knowledge, experience and communication skills. - During the meetings, members from both employers and employees hold topical discussions and listened to opinions on welfare measures, employee work issues, and employee life issues, so that employers and employees can take advantage of the platform of the negotiation and communication meeting to strengthen mutual trust and understanding, and serve as an important source of reference for administrative management.
Labor-management meetings	- Labor-management meetings are held quarterly. - To coordinate labor relations, improve working efficiency, and promote cooperation and communication between employers and employees. - To report labor dynamics, production plans, and business and production profiles. - To discuss labor conditions, labor welfare planning, work rules revision, work environment, etc.
Occupational Safety and Health Committee	- To conduct quarterly occupational safety and health committees. - To review, coordinate and recommend safety and health related issues. - To review various safety and health proposals.
New Employee Interviews	- Interviews for new employees to respond to work or environmental adaptation. - To build a platform for communication, further listen and feedback to colleagues, and conduct two-way communication to facilitate the integration of new employees into the Company. - To provide employee care and general life care.

(II) Proper Employee Care System

GCE is committed to enhancing the labor rights of employees. Only by establishing a proper employee care system and designing diversified employee care and welfare measures and activities, such as employee leave and welfare bonus subsidies, can we achieve the highest guiding principle of implementing human rights policies and labor rights.

Type	Purpose	Employee care and welfare measures and activities
Employee leaves	To allow our employees to rest, to take care of their families and lives, and to relax and build up their leisure life and interests after work.	- Indirect employees take two days off per week; direct employees take a schedule of four days on and two days off. - Other leave regulations are in accordance with local labor laws and regulations.
Employee Travel		Subsidies for domestic and international travel for employees.
Subsidies		- Subsidies for activities or clubs. - Employees are free to form clubs. Currently, there are 12 different clubs, such as Bicycle Club, Baseball Club, Basketball Club, Badminton Club, Mountain Hiking Club, Swimming Club, etc., and various activities are held regularly.
Health checkups	Continuous care and tracking of employees' health	Health checkups are arranged at the end of the year.
Welfare and bonus subsidies	All-around support and assistance for employees, so that they can put their minds and hearts at ease to work.	- Subsidies for wedding, funeral, hospitalization, maternity, etc. - Employee birthday bonus, three festivals bonus and Labor Day gift or premium. - Negotiation of various special contractors, welfare agencies, and in-plant sales activities.
Employee Emergency Relief Fund		- In accordance with the "Employee Emergency Relief Fund Application Regulations". - Employees or family members who have financial difficulties due to injury, illness or other major accidents may apply. - Application amount: NT\$60,000, to be repaid in 12 installments of NT\$5,000 each without interest.
Employee Counseling Service		The Company provides assistance with legal or psychological issues.
Employee Insurance	For employees to carry out their duties and to protect their rights.	- Group medical insurance. - Travel insurance for domestic and overseas business trips.
Scholarships	To encourage self-enrichment and positive growth for employees and families.	Scholarships for employees and their children are offered annually according to the announcement period.



(III) Parental Leave for Raising Children

GCE complies with labor laws and regulations, such as the Labor Standards Act and the Act of Gender Equality in Employment. In order to protect the rights and interests of employees and help them properly take care of their lives and families, and to be able to work without worries, there is no difference in the treatment of parental leave for raising child with regard to gender, and those who meet the qualifications can apply, and their reinstatement will be handled in accordance with the provisions of the laws.

Year	Gender	2022	2021	2020
Number of people eligible to parental leave for raising child in the current year	Male	12	16	16
	Female	15	29	29
	Total	0275	45	45
Number of people applying for parental leave for raising child in the current year	Male	3	5	6
	Female	13	16	24
	Total	16	21	30
Number of people who should be reinstated in the current year (A)	Male	4	4	8
	Female	22	14	20
	Total	26	18	28
Number of people reinstated in the current year (B)	Male	3	3	4
	Female	14	10	11
	Total	17	13	15
Reinstatement rate (B/A)	Male	75%	75%	50.00%
	Female	63.64%	71.43%	55.00%
	Total	65.38%	72.22%	53.57%
Number of people who should be reinstated and reinstated from parental leave for raising child in the previous year (C)	Male	3	4	4
	Female	10	11	29
	Total	13	15	33
Number of people who reinstated after the parental leave for raising child for more than 12 months (D)	Male	2	3	4
	Female	8	9	29
	Total	10	12	33
Retention rate (D/C)	Male	66.67%	75.00%	100%
	Female	80%	81.82%	100%
	Total	76.92%	80.00%	100%

Note: Only the Taiwan plant is listed; there is no legal parental leave for raising child in the China plant.

Note 2: Modifications were made to the data in 2021 and 2022.

(IV) Retirement System

Employees who meet the legal requirements for voluntary retirement or mandatory retirement may apply for retirement at any time, and the criteria for payment of pensions are in accordance with the relevant provisions of the Taiwan Labor Standards Act and the Labor Pension Act. The Company has established a Labor Pension Fund Supervisory Committee in accordance with the Labor Standards Act to manage the provision and payment of pension funds, and to appropriate monthly pensions to employees in accordance with the Labor Pension Act.

1. Retirement System under the Labor Standards Act:

The Company contributes the full amount of the monthly retirement reserve based on the total salary of employees, which is deposited in the “Company Retirement Fund” account opened by the Bank of Taiwan.

2. Labor Pension Act:

The Company contributes 6% of the monthly salary of employees to the individual pension account set up by the Bureau of Labor Insurance; for employees who voluntarily contribute to the pension fund, the amount based upon the voluntary contribution rate will be deducted from the monthly salary of employees to the individual pension account of the Bureau of Labor Insurance.



IV. Perfect Employee Cultivation

(I) Staff Structure of GCE

With the strategy of employing only the most talented people regardless of their backgrounds, GCE has made its employees the foundation of the Company’s sustainable development. We are looking forward to working together towards our goals with a common philosophy. Therefore, GCE will not transport, harbor, recruit, transfer, or accept, involuntarily, slavery, or trafficking of labor for the purpose of exploitation by threat, coercion, collateral (e.g., against debt), contractual bondage, suppression, abduction, or fraud. Regardless of the source, GCE will confirm to applicants that their employment is voluntary and free from any of the aforementioned illegalities. In addition, all work of GCE shall be based on the voluntary nature of the employees, providing them with reasonable rest time, and will not restrict the personal freedom of employees without proper reasons, and if there is a need for overtime work, the consent of the employees shall be obtained and the employees shall not be forced to work. Employees have the right to leave or terminate their employment contracts at any time upon reasonable notice, and the Company will protect its employees from any form of retaliation. GCE’s personnel structure is shown as follows.

Employees Gender Analysis Table						
Year	2020		2021		2022	
	Male	Female	Male	Female	Male	Female
Full-time employees	3,592	2,483	3,415	2,381	3,415	2,369
Dispatched employees	299	173	1,009	562	1,141	706
Total	3,891	2,656	4,424	2,943	4,556	3,075

Note: There was no significant change in the total number of employees during the reporting period.

Employees Region/Country Analysis Table						
Year	2020		2021		2022	
	Taiwan	China	Taiwan	China	Taiwan	China
Full-time employees	2,284	3,791	2,189	3,607	2,191	3,593
Dispatched employees	59	413	51	1,520	26	1,821
Total	2,343	4,204	2,240	5,127	2,217	5,414

Note 1: There was no significant change in the total number of employees during the reporting period.

Note 2: In 2022, the China plant will adjust its manpower policy to adopt full-time employment as the principle of employee recruitment and reduce the use of dispatched manpower to ensure the integrity of the labor rights of employees and to respond to the human rights policy.



Non-regular Employees Gender Analysis Table					
Item \ Region	Taiwan		China		Total
	Male	Female	Male	Female	
Dispatched employees	39	173	20	153	472
Contractors	1,503	39	2,263	18	3,823
Part-time workers	0	0	0	0	0
Cafeteria Staff/Cleaner/Security	28	26	82	74	210
Consultants	4	1	1	0	6

Note 1: The number of employees is calculated as of December 31, 2022, the end date of the reporting period.

Note 2: There was no significant change in the total number of employees during the reporting period.

GCE has a respectful attitude towards its employees through a reasonable compensation system, a comprehensive employee care mechanism, and a prudent and thorough talent cultivation mechanism. Therefore, in 2022, although some of our employees left the team due to personal development, we continued to attract new talents to join the GCE team and work together towards the same vision.

Age structure of new and departed employees in 2022						
Item		Age	Taiwan		China	
			Number of people	Ratio	Number of people	Ratio
New employees	Male	Under 30 years old	224	72.5%	1,266	94.5%
		31-50 years old (inclusive)	217	28.7%	579	45.5%
		Over 51 years old	13	8.1%	4	7.5%
		Subtotal	454	37%	1,849	69.4%
	Female	Under 30 years old	186	66.9%	620	86%
		31-50 years old (inclusive)	175	28.5%	334	40.8%
		Over 51 years old	15	6.7%	0	0%
		Subtotal	376	33.7%	954	62%
Departed employees	Male	Under 30 years old	155	50.2%	1,174	87.7%
		31-50 years old (inclusive)	218	28.8%	546	42.9%
		Over 51 years old	22	13.8%	2	3.8%
		Subtotal	395	32.2%	1,722	64.6%
	Female	Under 30 years old	127	45.7%	554	76.8%
		31-50 years old (inclusive)	171	27.9%	328	40.1%
		Over 51 years old	27	12%	1	100%
		Subtotal	325	29.1%	883	57.4%

Note 1: The number of employees as of December 31, 2022, the end date of the reporting period, is used.

Note 2: The subtotal is based on the number of employees in each category as the denominator, e.g., the denominator of the male departure rate is the total number of male employees, and the denominator of the new employees rate under 30 years old is the number of employees under 30 years old.

Note 3: The total is the number of all employees as the denominator.

Note 4: There is no significant change in the total number of employees during the reporting period.

GCE does not discriminate in hiring or treatment on the basis of race, class, language, religion, politics, nationality, gender, age, marriage or union status...etc. The diversity distribution of employees in 2022 is as follows. The male to female ratio of supervisors in Taiwan is 3:1, while the male to female ratio in China is 4.5:1; the male to female ratio of non-supervisors in Taiwan is about 50:50, while the male to female ratio in China is 1.6:1. In terms of education in general, the percentages of those below junior high school, high school (vocational) and university or above are about 1/3 each; finally, in terms of employee age, the highest percentage is 31-50 years old (inclusive), which has reached 52.88%, while the age group of under 30 years old is the second highest at 40.43%.

Employees Diversity Distribution Table															
Employee Category		2021				Total	Ratio	2020				2019			
		Taiwan		China				Taiwan		China		Taiwan		China	
		Male	Female	Male	Female			Male	Female	Male	Female	Male	Female	Male	Female
Age	Under 30 years old	309	278	1,339	721	2,647	40.43%	288	269	2,067	1,140	314	304	2,321	1,306
	31-50 years old (inclusive)	757	614	1,273	818	3,462	52.88%	740	590	1,140	733	709	599	1,056	689
	Over 51 years old	160	225	53	0	438	6.69%	142	211	47	0	116	175	40	2
Total		1,226	1,117	2,665	1,539	6,547	100%	1,170	1,070	3,254	1,873	1,139	1,078	3,417	1,997
Education	Below junior high school	99	168	1,289	750	2,306	35.22%	119	170	1,515	833	105	169	660	437
	High school (vocational)	441	538	804	429	2,212	33.79%	402	522	1,122	657	390	537	2,128	1,189
	University	626	391	569	360	1,946	29.72%	590	353	614	382	583	357	627	370
	Master	59	20	3	0	82	1.25%	58	25	3	1	60	15	2	1
	PhD	1	0	0	0	1	0.02%	1	0	0	0	1	0	0	0
Total		1,226	1,117	2,665	1,539	6,547	100%	1,170	1,070	3,254	1,873	1,139	1,078	3,417	1,997
Other	Physical and mental impairment	11	10	0	0	-	-	13	8	0	0	12	5	0	0
	Minority	0	0	102	62	-	-	0	0	155	127	0	0	107	68
	Foreign nationality	365	285	0	0	-	-	330	283	0	0	339	309	0	0
小計		376	295	102	62	-	-	343	291	155	127	351	314	107	68
Position	Supervisory position	114	38	332	73	557	8.50%	112	39	314	73	109	39	209	59
	Non-supervisory positions	1,112	1,079	2,333	1,466	5,990	91.5%	1,058	1,031	2,940	1,800	1,030	1,039	3,208	1,938
Total		1,226	1,117	2,665	1,539	6,547	100%	1,170	1,070	3,254	1,873	1,139	1,078	3,417	1,997

Note 1: The number of employees as of December 31, 2022, the end date of the reporting period, is used.

Note 2: There was no significant change in the total number of employees during the reporting period.



(II) Improving Cultivation Mechanism

In order to establish an improving cultivation mechanism, GCE has invested considerable resources, and has an active and open attitude in discussing and planning career development paths with employees to enhance professional abilities and accumulate work experience, and to continuously refine employees’ own values. The company attaches great importance to employee cultivation mechanism and focuses on improving the cultivation mechanism, including new employee training, general training, professional training, on-the-job training, off-the-job training and personal training, in order to enhance the professional ability and core competitiveness of employees. At the same time, we have introduced My Class of GCE, an e-learning program, to increase the flexibility and efficiency of learning time and to increase employees’ willingness to learn on their own. In addition, we have launched the Study Session of GCE to improve the corporate culture and enhance the employees’ cohesion within the Company.

1. Training for new employees

One week of training is arranged. The course content includes company introduction, newcomers’ instructions, personnel management system, general knowledge courses, professional courses, safety and health courses, environmental protection courses (ROHS halogen-free regulation, ISO45001 system), 5S courses, SOP internal management regulations and practical courses to ensure that newcomers know the Company's policies and government regulations, as well as to let employees understand their own rights and work compliance.

2. General Knowledge Course

In accordance with the Company’s objectives and customer requirements, we offer mandatory general knowledge courses (RBA promotion, corporate ethics, environmental safety policy, labor safety and health, QC080000, fire drills, etc.) every year to ensure that all factory employees and GCE partners reach a consensus.

3. Professional Categories

For different positions, levels and years of experience, we provide appropriate professional training.

- (1) Unit-specific certification courses: In order to maintain quality yields and achieve customer satisfaction, we arrange unit-specific employees to receive certification courses to strengthen quality awareness.
- (2) Engineering Technology Courses.
 - A. Basic courses: to strengthen the basic ability of engineers and cultivate engineering professionals down to the roots.
 - B. Advanced courses: to refine the professional ability of engineers and enhance the core technical level.

4. Total Quality Management Course:

In addition to the basic quality-related courses, we promote quality control circle (QCC)-related activities to implement quality management concepts.

5. Management training courses:

To improve management leadership ability and increase team cohesion; to hold external training sharing and open unit courses.

In 2022, GCE will continue to promote training programs such as Accountability Management, Total Productive Maintenance (TPM), PCB Smart Manufacturing Training, TPCA Classes, etc., and promote communication leadership and team leader training series, etc., together with TPS, safety, and maintenance Dojo practice simulations to establish a unique training mechanism.

In particular, GCE regularly holds study sessions, movie sharing sessions, and other experiential activities to enable employees to communicate and exchange ideas, work together as a team, and demonstrate team achievements, so that “collective accountability and win-win” can be continuously integrated into daily operation attitudes and business promotion. The Company expects to establish the value of “accountability” as one of the important corporate culture.

In general, GCE expects employees to accumulate work experience through a systematic model to continuously improve their professional ability, which not only contributes to the work content but also reflects on the Company’s performance. Therefore, the Company is actively promoting subsidized measures and designing various channels for employees to receive training corresponding to their duties. The types of training courses, target groups, regions and total hours of training implemented in 2022 are listed below:

Number of Employees and Hours of Training in 2022

Item		Taiwan		China	
		Male	Female	Male	Female
Number of training employees	Direct personnel	1,045	1,078	5,042	2,261
	Indirect personnel	350	245	417	327
	Supervisory personnel	232	87	425	93
	Subtotal employees	1,627	1,410	5,884	2,681
Number of training hours	Direct personnel	21,329	23,272	185,966	81,977
	Indirect personnel	13,160	7,254	21,413	10,566
	Supervisory personnel	5,219	2,563	25,808	6,738
	Subtotal employees	40,158	33,089	233,187	99,281
Average training hours	Direct personnel	20.41	21.59	36.88	36.26
	Indirect personnel	38.89	29.61	51.35	32.31
	Supervisory personnel	22.50	29.46	60.72	72.45
	Subtotal employees	24.68	23.47	39.63	37.03

Total Hours of Course Types in 2022

Course Type	Course Target	Region	Total Course Hours	Remark
New employee Course	New employees	Taiwan	9169.7	-
		China	70705	-
General knowledge Course	All employees	Taiwan	45,935	-
		China	65,232	-
Professional Technical Course	Assigned employees	Taiwan	28,527	-
		China	124,437	-
Management and Leadership Course	Supervisory level	Taiwan	4,638	-
		China	8,762	-
Common Skills Course	Assigned employees	Taiwan	940	-
		China	15,875	-
Human rights policy related courses (RBA training)	All employees	Taiwan	3,047	Training rate 100%
		China	7,514	Training rate 100%
Anti-Corruption Policy Course (RBA training and ethics training)	All employees	Taiwan	5,786	Training rate 100%
		China	9,926	Training rate 100%
Safety and health related course	All employees	Taiwan	28,475	Training rate 100%
		China	48,271	Training rate 100%

(III) Performance Evaluation

Performance evaluation is not only the Company's assessment of employees' performance, but also a platform and point of time for mutual communication of duties or contents. Therefore, every employee of GCE should undergo regular performance evaluations, and the frequency of employee evaluations is once a quarter. In terms of job content, general and professional functions, the items and weight of employee performance evaluations are set separately, and no distinction is made between employee categories (gender, supervisory or non-supervisory positions) or even employment types (full-time or dispatched, etc.).

Thus, through the performance evaluation mechanism, employees and supervisors can communicate with each other so that employees can know the contents, reasons and results of the quarterly performance evaluation in a timely manner, and plan their career plans accordingly for the Company's future business strategies, goals and management measures, while supervisors can understand employees' ideas, concepts, obstacles and needs, and provide resources and advice in an appropriate and reasonable manner.

Of course, the results of performance evaluation are still linked to promotion, salary adjustment and bonus payment. Therefore, GCE is committed to a fair, reasonable and effective performance evaluation mechanism for departmental and company operation performance, and to make rolling adjustments in order to achieve the departmental and company operation performance goals.

In 2022, the performance evaluation rate of GCE is 100%, regardless of gender, employment type, or supervisory/non-supervisory positions.

V. Healthy and friendly workplace

GCE has established various management measures for occupational safety and health of employees to provide them with comprehensive protection and care.

(I) COVID-19 Epidemic Prevention Strategy

Since COVID-19 cases are still occurring in 2022, GCE has established epidemic prevention strategies and measures in accordance with the government's policies. On January 13, 2022, to be in line with the government's policies, GCE immediately adjusted the plant's control system, and e-mailed to employees to inform them of the changes. Meanwhile, several measures were taken in the hope of controlling the Company's epidemic situation through a proactive epidemic prevention attitude and appropriate measures to maintain operational continuity.

GCE's epidemic prevention policies are as follows:

1. For employees requiring quarantine, the Company offers paid leave for epidemic prevention, better than the requirements of laws and regulations of Taiwan. To be in line with the government's policies, the Company also provides relevant types of leave, such as care taking leave for epidemic and COVID-19 vaccination leave.
2. A new GCE epidemic reporting system has been established, allowing every department to promptly report personnel who required quarantine. This facilitates the control of the number of employees in quarantine by the GCE's Epidemic Response Command Center for effective production line scheduling.
3. Implement measures such as zone-based, split, group-based working, and working from home.
4. On January 26, 2022, rapid screening tests of COVID-19 were conducted for foreign migrant workers to ensure that they are in good health. All rapid screening test results were negative.
5. Encourage employee to be vaccinated (including foreign employees). The vaccination rate is high, as shown in the following table.
6. For foreign migrant workers under quarantine, the Company provides assistance with daily necessities, such as purchasing items and meal delivery services.
7. The GCE Epidemic Response Command Center and related drills were established from the beginning of the epidemic. During the outbreak, owing to the emergency response handling by various teams, GCE were slightly impacted by the epidemic.



Vaccination status in Taiwan plants							
Category	First dose		Second dose		Third dose		Total
	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	
Taiwanese employees	1,602	94.9%	1,538	91.9%	1,102	65.3%	1,688
Foreign employees	503	100%	503	100%	266	52.9%	512
Total	2,105	95.7%	2,041	92.8%	1,368	62.2%	2,200

Note: The statistics are from the survey conducted on April 6, 2022.



(II) Occupational Safety and Health System

In accordance with local laws and regulations, international standards, and the Code of Conduct of Responsible Business Alliance (RBA), GCE has actively implemented and passed the ISO 45001 management system certification, which covers the safety and health management of all employees and all personnel entering the plants at each plant site in order to build a comprehensive occupational safety and health management system. At the same time, we are promoting four aspects: avoidance of abnormal work load, prevention of human factor engineering hazards, avoidance of unlawful infringement, and maternal protection, continuously implementing the spirit of PDCA continuous improvement.

GCE has set up occupational safety and health management units and full-time, dedicated personnel at each plant. In addition, an "Occupational Safety and Health Committee" is set up and convenes quarterly to respond to local occupational safety and health related laws and regulations, and its job is to implement, supervise and direct safety and health management matters according to its authority, and coordinate and guide employees to implement them. Therefore, the quarterly meeting covers: occupational safety and health policy, occupational safety and health management plan, safety and health education and training, operating environment monitoring plan, monitoring results, health promotion, safety and health proposal, automatic inspection and safety and health audit, preventive measures for hazards in operating areas, machinery and equipment, occupational disaster investigation report, on-site safety and health management performance, contracted business safety and health management, and occupational safety and health management regulation check for all personnel entering the plants, etc.

At the same time, the Occupational Safety and Health Committee has labor representatives to convey to the management and safety and health managers of the relevant units to prevent or reduce the occurrence of occupational safety incidents and protect the health and safety of employees through various improvement and prevention measures.

GCE also follows the “Safety and Health Hazard Risk Identification, Assessment, and Control Management Procedures” and performs hazard identification and risk assessment on a regular or irregular basis (such as changes in operating activities or abnormal occurrences). If the risk assessment result exceeds the acceptable risk level of the Company, the Company should carry out risk management measures such as transferring, offsetting or strengthening the management of the negative impact, and continuously seek the best improvement plan to protect the work environment and health and safety of employees.

Furthermore, in 2022, GCE revised the “Respiratory Protection Plan Operating Guidelines” and the “Occupational Work Safety and Health Management During Night Time Guidelines” to prevent health injuries to employees working in hazardous environments. In addition to complying with regulatory definitions of hazardous substances, providing protective equipment, and offering employee education and training, special high-risk operations are allocated with rescue personnel and monitors, and emergency response procedures and operational guidelines are also established to ensure the physical and mental well-being of employees, reduce various workplace risks, and prioritize employee safety as the primary concern.



GCE takes the following measures to implement the work environment and health and safety of employees.

Measure	Content
Work environment control	■ Provide a bright and clean work environment. ■ Conduct semi-annual environmental tests, such as temperature/humidity, lighting, noise, and toxic and harmful substances, to comply with local laws and standards. ■ Work safety guards visit the site from time to time to conduct inspections, including all firefighting equipment and measures. ■ Improve or promote workplace health based on information recommended by professional physicians. ■ Deployment of occupational health nurses.
Promotion and education training	■ Regularly hold safety and health-related courses. ■ Various hazardous operations and preventive measures refresher training mechanism. ■ Promote and provide employee health knowledge as recommended by professional physicians. ■ The medical office provides employees with health care information from time to time, so that employees can obtain correct and effective health and safety information.
Protective gears	■ Continuously provide employees with necessary protective gears. ■ Regularly replace protective equipment with new ones. ■ Seek new equipment or better protective gear in a timely manner.
Health Checks	■ Annual health checks and special health checks are conducted for employees. ■ Professional physician recommendations to provide employee health knowledge. ■ Tier 2 health management employees are included in a personal health coaching program for employees to provide more robust health and safety management. ■ Six times a month on-site service of general physicians and occupational physicians to provide professional consultation channels for employee health care.
Maternity protection	■ In accordance with maternity protection laws and regulations. ■ There are many breastfeeding rooms in the factory. ■ Provide a safe, private environment and facilities that allow our employees to express milk with confidence, peace of mind and proper storage. ■ Protect the safety of mothers and fetuses, pregnant and breastfeeding women are prohibited from working in dangerous or harmful jobs, and are not allowed to work at night. ■ Active care by occupational health nurses. ■ The physicians provide on-site services to confirm pregnancy and post-pregnancy employees status and the safety of all operations and work environments. ■ Maternity protection assessment is conducted jointly by employees, unit supervisors, physicians, nurses and occupational safety personnel to ensure that maternal employees are well taken care of.
Continuous Review Mechanism	■ Each site is ISO 45001:2018 compliant and certified, and is continuously and regularly verified by third-party certification organizations. ■ According to the results of environmental inspection reports and historical records, we will review and improve according to the spirit of PDCA continuous improvement

(III) Employee Health and Safety

In order to take care of the health and safety of employees in the workplace, GCE's senior executives regularly hold monthly occupational safety meetings, and from time to time collect information or practical cases from domestic and international, industrial, and competent authorities, and analyze and review them internally to avoid the occurrence of similar situations; at the same time, the environmental engineering department conducts regular checks and risk assessment every year, and sets higher-risk occupational safety items as improvement targets and continues to track and improve.

GCE provides a bright and clean work environment. Every six months, the Company conducts tests on the work environment, including temperature/humidity, lighting, noise, toxic and harmful substances, etc., in order to comply with national standards and within the permitted concentrations, and continues to analyze and improve according to the records kept.

In addition to providing protective equipment, occupational safety guards also visit the site from time to time to inspect various equipment and management measures to prevent employees from encountering dangerous labor conditions or workplaces. At the same time, we continue to educate and train our employees on various hazardous operations and preventive measures, such as strengthening their awareness of high-risk chemical handling, and actively conducting chemical spill and evacuation drills for emergency response plans...etc. Through continuous education and training, we aim to make our employees more proficient, avoid panic and reduce the error rate and the occurrence of personal injury or death, and to control the hazards at the first time so that the scope of damage can be effectively limited.

Number of People of Emergency Response Drills in 2022		
Region	Number of employees	Coverage Rate
Taiwan	2,259	100%
China	5,030	100%
Total number of employees	7,298	100%

Note: The calculation date is December 31, 2022.

In addition, in order to integrate safety awareness into the organizational culture, GCE promotes the “Safety Dojo” activity and establishes experiential occupational safety activities. Through interactive games and real props linked to factory safety, the Company enhances the authenticity of the employee experience, so that the slogan of safety first is not just a formality, but also close to employees’ factory operations and allows employees to actually operate, and indeed improve their proficiency.

If employees are injured on duty, the Company will grant sick leave for work-related injuries in accordance with the law and the actual situation, and assist in applying for occupational accident compensation under Labor Insurance Act. No serious occupational injuries occurred in 2022. The following table summarizes the recognized occupational injuries in 2022. There’s no case of any occupational disease. As for all personnel entering the plants (non-employee), there have been no incidents of occupational injuries or occupational diseases arising from performing tasks assigned by GCE.

Regular employees							
Region	Gender	Total working hours	Total Lost Days	Disability Injuries Frequency Rate (FR)	Disability Injuries Severity Rate (SR)	Occupational disease rate	Mortality rate
Taiwan	Male	2,406,080	20	3.32	8	0	0
	Female	2,148,768	40	6.52	19	0	0
China	Male	5,720,157	659	4.55	115.29	0	0
	Female	4,100,147	486	5.61	118.53	0	0
Non-regular employees (including: dispatched employees, contractors, cafeteria staff, cleaners, securities, and consultants)							
Region	Gender	Total working hours	Total Lost Days	Disability Injuries Frequency Rate (FR)	Disability Injuries Severity Rate (SR)	Occupational disease rate	Mortality rate
Taiwan	Male	73,704	0	0	0	0	0
	Female	61,752	0	0	0	0	0
China	Male	1,363,896	227	24.7	925.33	0	0
	Female	317,672	0	9	0	0	0

Note 1: Disability Injuries Frequency Rate (FR) = number of Disability injuries * million working hours/total working hours experienced.
(Rounded to the second decimal place)

Note 2: Disability injury severity rate (SR) = Total number of days lost * million working hours / total working hours experienced.
(Rounded to the second decimal place)

Note 3: Number of days lost: The number of days the worker cannot return to work after the occurrence of occupational injury is more than one day (inclusive), and the total number of days lost does not include the calendar days on the date of injury and the date of return to work.

(IV) Sound Medical System

GCE has a sound medical office, which provides simple trauma treatment, medical services, health care consultation, employee return to work assessment, etc. The medical examination form for new employees will also be provided to the factory physician for reference and suitability assessment to ensure that the employees are working in suitable positions. At the same time, the medical office will provide employees with health care information from time to time so that they can obtain correct and effective health and safety information, and provide personalized consultation and counseling services or self-funded vaccination and cancer screening activities according to their personal physical and mental conditions.

Every year, we invite medical institutions to conduct on-site employee health checks and special health checks (listed below), and the Company subsidizes the cost of employee health checks according to job title and rank, and provides general physician and occupational physician services on site six times a month, so that employees have professional consultation channels for health care. The items include occupational medicine, family medicine, labor health services, health policy and management, maternal health protection, health screening and workplace health promotion.

The Company conducts on-site improvements and evaluations as recommended by physicians. In 2018, GCE obtained the “Healthy Workplace Certification,” which includes criteria such as workplace tobacco prevention and control promotion that exceeds legal requirements, comprehensive health promotion procedures, and active support for health promotion activities.

In addition, we conduct annual surveys such as overload questionnaires and psychological stress questionnaires to proactively care for the physical and mental conditions of our employees and prevent overwork, and no injuries caused by overwork occurred in 2022.

2022 Check for Special Operation					
Check Item for Special Operation	Number of people	Tier One	Tier Two	Tier Three	Results
Noise	436	154	294	33	Normal
Ionizing radiation	74	20	54	-	Normal
Lead	31	23	8	-	Normal
Manganese	80	68	12	-	Normal
Dust	224	178	46	-	Normal
Chronic acid	14	14	-	-	Normal
Nickel	46	26	20	-	Normal
Mercury	14	9	5	-	Normal
Formaldehyde	117	62	55	-	Normal

(V) Behavior affirmation

“Healthy Workplace Certification - Health Activation Badge” by the Health Promotion Administration, Ministry of Health and Welfare, Executive Yuan: GCE encourages and promotes a smoke-free work environment and actively supports workplace health promotion, obtaining the Healthy Workplace Certification - Health Activation Badge.



VI. Social Welfare Activities

Based on the characteristics of the industry, the wide factory area, and the large number of employees, GCE naturally has a close relationship with the local community. At the same time, the Company aims to give back to the society by exerting its influence, and to achieve the spirit of “taking from the society and using for the society”. Therefore, in 2022, GCE continued to inspire its employees to be socially responsible and contributed to social welfare through community care, park adoption, and public welfare sponsorship, and then expanded to the general public through various activities to spread the concept of selfless care to a farther and wider area.

Project	Description	Target	Promotional method	Execution Results
Communication and visits	Occasional visits	1. Each local village office 2. Residents of the local community	Occasional visits and communication activities, such as questionnaires, on-site visits, etc.	1. Collect questionnaire information from the factory and local village offices. 2. No major complaints in 2022.
Community Care	Lunar New Year Home Care	Local residents	Actively participate in activities organized by the district office, neighborhood/village office, and community development association to maintain good interaction.	Participate in Lunar New Year home care activities in 2022.
Park adoption	Park adoption	1. Environmental Protection Administration, Executive Yuan 2. Local parks	1. Actively participate in the Air Quality Cleanup Area Adoption activities organized by the Environmental Protection Administration, Executive Yuan. 2. Adopt a park to promote the maintenance of environmental greenery through regular maintenance work.	GCE has dedicated its efforts to maintain the Zhongli Art Eco Park.
Public Benefit Sponsorship	Charity Donation	Elementary school nearby	By making donations to Jhong Fu Elementary School, we provide care for the families of children in need.	Jhong Fu Elementary School Donation Ceremony.
		Wu Cyuan Elementary School	By making donations to Wu Cyuan Elementary School, we provide care for the families of children in need.	Wu Cyuan Elementary School Donation Ceremony.
		Ruth Society for Disability Services	By making donations to Ruth Society for Disability Services, we provide care for the families of children in need.	Ruth Society for Disability Services Donation Ceremony.
		Community care for residents nearby	Through donations, show care for the local community and provide essential supplies to disadvantaged residents.	Participate in annual year-end warmth-giving activities, with the assistance of community leaders or charitable organizations, GCE distributes essential supplies to disadvantaged residents.
		Kaohsiung Private Christian Mountain Children's Home	By making donations to Kaohsiung Private Christian Mountain Children's Home, we provide care for the children of the Home.	A certificate of appreciation was presented by Kaohsiung Private Christian Mountain Children's Home.
		Police Association	Through donations, we participate in the activities held by Friends of the Police Association.	As the Director of Friends of the Police Association.
		National Taiwan University Hospital	Through donations, we participate in the operations and activities held by National Taiwan University Hospital.	National Taiwan University Hospital Donation Ceremony.
		Epidemic prevention supplies for Taoyuan City Government	Through donations, assist the Taoyuan City Government in obtaining epidemic prevention supplies, contributing our efforts to epidemic prevention.	Acer Foundation and GCE jointly donate Acer Ozone Antibacterial Sanitizer to safeguard the health of children.



VII. Service Quality and Customer Satisfaction

Through investing resource and manpower annually, we consistently promote optimization projects, employing measures such as intelligence and AI to steadily pursue service quality and enhance customer satisfaction for identifying and responding to impacts.

No.	Item	2022 Goal	2022 Performance
1	Conduct service quality and satisfaction surveys with customers.	1 time	1 time
2	Review and improve based on customers' feedback.	100%	100%

(I) Service Quality

GCE is committed to improving both product and service quality. To achieve this, GCE allocates resources and manpower annually to execute various projects, including process optimization, workflow adjustments, and research and development. These efforts continuously enhance service quality, contributing to increased customer satisfaction and also aligns with benefits related to energy efficiency, energy conservation, and greenhouse gas reduction.

The execution status of 2022 is as follows:

1. Raw materials project

(1) Adjustment of raw material usage

GCE focuses on enhancing the precision of raw material application in the manufacturing process. For instance, chemicals used in the process (such as sulfuric acid, hydrochloric acid, nitric acid, sodium hydroxide, and sodium carbonate) are precisely calculated and applied to align with product requirements. This improves manufacturing efficiency while maintaining product quality.

(2) Replacement of raw materials

GCE replaces raw materials used in the process. For example, in the previous process that utilized coarse etching chemicals with hydrochloric acid washing, automated chemical addition was required based on the product quantity. However, considering the volatile nature and corrosiveness of hydrochloric acid, which could lead to equipment corrosion and environmental hazards, the chemical was replaced with sulfuric acid. The process was adjusted to utilize medium-coarse etching chemicals with sulfuric acid washing. In addition to the reduction of chemical use, it also reduces waste generation.

In 2022, an assessment of the potential impacts on health and safety for major products was conducted. Rigorous internal management of raw materials and processes ensured 100% health and safety compliance. The evaluation metric of “Compliance and Satisfaction with Harmful Substance Management” even received a highly satisfactory rating from customers.

2. Equipment adjustment project

(1) Replacement of the material for cooling plate

Due to the number of high-temperature days (exceeding 38 degrees Celsius) has increased 15 days in 2022 compared to the previous year, the usage of PVC cooling pipes in the pre-copper plating process resulted in an elevated rate of copper oxide formation under high-temperature conditions. This increased the defect rate of product filling quality. Thus, GCE replaced the cooling pipes with metallic material, reducing the impact of pre-copper plating on production board copperization. This adjustment improved the heat exchange efficiency within the tank, ensuring a temperature not exceeding 25 degrees Celsius, thereby reducing the defect rate in product filling.

(2) Utilization of automated equipment

GCE employed automated equipment to replace manual operations. For instance, mechanical arms were used for inner and outer layer alignment tasks, and automated equipment for adding stripping chemical was adopted. This reduced time of manual operation, minimizing the potential possibility for occupational injuries, and enhanced process efficiency.

(3) Introduction of other new equipment

GCE introduced new equipment to enhance product quality and process efficiency. For example, a Direct Imaging (DI) exposure machine was adopted to replace conventional exposure machines. This machine eliminates the need for illumination by directly forming images, facilitating accurate alignment for etching. Simultaneously, it reduces the usage of films, saves space, and lowers power consumption.

3. Process adjustment and optimization project

(1) Quality and efficiency enhancement

GCE conducted multiple process adjustments, such as implementing an additional “blockage inspection” step after the first copper plating to check for any blockages in the holes, preventing abnormal substances from blocking the holes. This early detection facilitates timely intervention and reduces scrap rates and product defect rates. Optimization of drill bit length and drilling parameters for specific materials increased the stacking quantity of drilled holes, enhancing production efficiency.

(2) Utilization optimization

GCE optimized layout and material utilization to maximize the benefits of both materials and layouts, thereby reducing the consumption of raw materials.

(3) Customized adjustments

In response to customers’ demands for sustainability, GCE made customized adjustments based on their requirements. This involved enhancing the complexity of production process steps, adding extra designs, and increasing the quantity of pressing and copper plating processes. These adjustments aimed to enhance customer’s satisfaction, and respond to customers’ expectations.

4. System planning and implementation project

GCE has developed the Panel Traceability system, utilizing laser engraving and mechanical drilling to create a unique code on the surface of each circuit board. Subsequently, various code-reading machines or hand-held devices are employed in each process for automated production, measurement, and inspection recording.

By introducing this system, GCE aims to leverage the collected data and parameters to identify improvement opportunities through big data analysis. This approach seeks to enhance product quality and service, ultimately leading to an enhancement in customer satisfaction.

5. AI and intelligentization talent training project

By introducing and applying AI, it is expected to become the spark that ignites GCE's "First Fire of Transformation," to enhance and fortify our resilience and corporate structure.

In February 2022, Chairman, Yang Cheng-Tse, along with President Tsai Chin-Sung, Senior Vice President Lung Chung-Chih, and Assistant Manager Yang Ta-Kun, participated in the "AI Strategy Governance and Case Analysis Executive Class" at Taiwan AI Academy. Recognizing the profound impact of AI on GCE's future organizational development, they actively encourage employees to cultivate digital-generation capabilities.

The external training is divided into three groups, totaling 45 seeded personnel. Not only did they receive high recognition from the training institution during the training period, but the Company also launched the "GCE AI Innovation Activity" in September 2022 and established reward programs internally. These initiatives encourage trained employees to practically apply the AI skills they learned in their work, assisting various departments in improving work efficiency, process capabilities, and product quality.

(1) Programs for Directors and Presidents: 48 hours.

(2) Programs for Managers 128 hours.

(3) Programs for Technology Leads: 1176 hours.

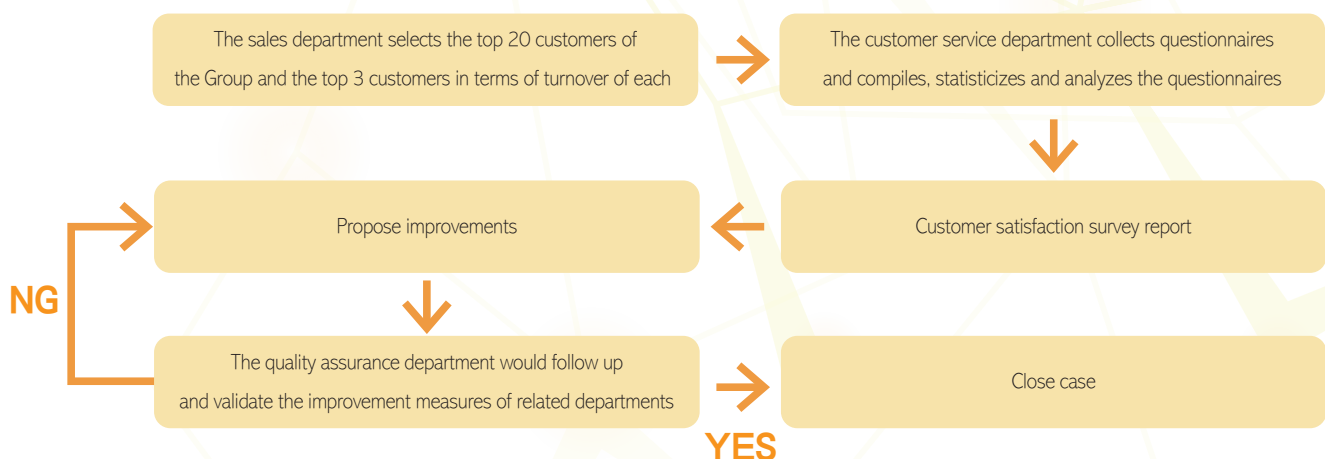
(4) Programs for the Industry: 4873 hours.



(II) Customer Satisfaction

GCE upholds the spirit of "financial integrity, proactive attitude, steadfast manner, and sustainable operation," and shoulders the responsibility towards employees and society. We stride steadily towards sustainable development. Moreover, we adopt an attitude of "integrity, accountability, professionalism, and innovation" towards customers, providing best and innovative electronic products. To achieve this, we continuously elevate our standard, rigorously adhere to quality control, and are committed to enhancing service quality by delivering high-quality products that meet customers' requirements.

In 2022, GCE conducted customer satisfaction survey analysis for certain products, the process is illustrated in the diagram below:



In 2022, a total of 31 questionnaires were sent, and after collection, a total of 22 questionnaires with complete responses were analyzed. The results of the analysis reflected significant recognition and trust from customers, ensuring continued collaboration opportunities and further development:

1. GCE received the top ranking from 9 and the second ranking from 6 customers. Overall, GCE’s rankings among customers were above average, receiving customers’ recognition for our engineering capability and service quality.
2. For the content of the survey questionnaires, where the lower scores among the effectively collected responses and customer suggestions have all been reviewed for making improvement plans by GCE.

Evaluation Aspect	Evaluation Indicator
Product quality	Quality performance
	Quality improvement capability
	Compliance with hazardous substance management and satisfaction
Technology capability	Engineering capability and support
	Mass production / sample material number to flexibly support customers
Service quality	On-time delivery (OTD)
	Customer service quality
	Price
New product promotion	Product sampling service
	Process design service

Note: Each item is scored on a scale of 1 to 10. Scores above 7 are considered as receiving satisfaction from customers, and items with scores lower than/equal to 7 require review.

From 2020 to 2022, GCE has consistently achieved the highest ranking in the category of product quality. Other items have varied based on market conditions and customers’ demands for each respective year. This highlights the Company’s steadfast commitment to product quality as a benchmark in the market, along with continuous innovation and breakthroughs to meet customer needs. As a result, customer satisfaction has been consistently maintained at a score of 85 or above.

Year	2022	2021	2020
Highest ranking item	Product quality	Product quality	Product quality
Average score of satisfaction	86.8	85.6	85.8





Chapter 6.

Corporate Governance

Towards Corporate Sustainable Operation:

1. Committed to achieving the goal of sustainable operation, GCE addresses the challenges thereof to corporate governance by adopting the strategies in adhering to the requirements of laws and regulations, actively promoting the concept of integrity, and implementing relevant measures for safeguarding the Company's information security.
2. By establishing a sound governance structure to identify and control individual risks, and proactively cope with various impacts, GCE ensures its sustainable operation, steadily pursues operational performance and growth, and ultimately fulfills the expectations of all its stakeholders with an attitude of gratitude and reward.

No.	Item	Annual Goals in 2022	Annual Performance in 2022
1	To continue enjoying positive operating profit	Positive profitability	Positive profitability
2	Number of cases fined over NT\$1 million by the local government for violating laws and regulations	0	0
3	RBA audit Priority deficiency	0 case	0 case
4	Number of cases of appeal for violating corporate ethical management that become final and binding	0	0
5	Completion rate of corporate ethics education and training	90%	100%
6	Employee participation in email social engineering attack drills	1 time	1 time
7	Information security disaster recovery drill	12 times	12 times

Note: No. 2 NT\$1 million, adopting the assessment of financial materiality as the basis.

I. Legal Compliance

In order to achieve operational control and implementation of laws and regulations, GCE not only requires the relevant cases within its business of scope involving legal compliance to be autonomously audited by its individual business units, but also utilizes the resources of its department of legal affairs to conduct legal compliance audits internally.

Components	Laws and regulations to be followed	Audit units
Business operation and marketing	Criminal Code, Fair Trade Act, Patent Act, Trademark Act, Copyright Act and Antitrust Laws	Business, finance, R&D and legal affairs units
Financial and organizational planning	Company Act, Securities and Exchange Act (Note), Money Laundering Control Act and related laws and regulations, as well as the Company's "Procedure for the Prevention of Insider Trading"	Financial ethics and legal affairs units
Protection of the Company's internal and customer information	Trade Secrets Act and Personal Data Protection Act	Information, human resources and legal affairs units
Personnel policy and administration	Labor Standards Act, as well as related laws and regulations	Legal affairs and human resources units

II. Risk Control

(I) Risk Management

In addition to the risks of climate related issues being handled in accordance with the implementation of TCFD, GCE still has sufficient risk control capabilities for the risks arising from other internal and external factors to respond to global and local trends and risks that reduce the profitability and viability of enterprises, so as to be fully prepared to face various risks that may occur and grasp business opportunities.

(II) Risk Management Policy

In pursuit of corporate governance and risk management capabilities, GCE continuously optimizes its risk management policy and procedures by making decisions on major risk items in a top-down approach by its Board of Directors, and using resources to effectively practice key management. In response to the various internal and external risks that may be faced in the course of operations, GCE adopts a systematic methodology in conjunction with annual planning operations to ensure effective implementation of risk management operations. As for the significant contingencies, in order to reduce disasters and resume normal operations immediately, GCE will deal with them by following its “Continuous Operation Management Procedure.”

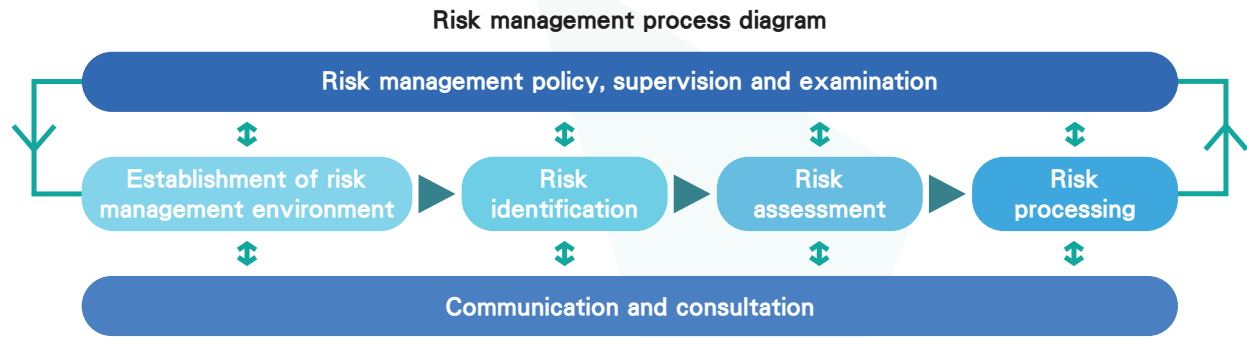
(III) Risk Management Organization

GCE’s risk management unit, risk execution unit and risk audit unit, whose respective roles and responsibilities are listed in the table and diagram below:

Hierarchy levels	Description of authorities and responsibilities
Board of Directors	- As the highest risk control unit within the Company, the Board of Directors will examine the annual risk management report, risk implementation report and audit report to ensure the effective implementation of the Company’s risk management system. - Through regular / irregular performance meetings, the top management level will report and review the impacts of ESG issues, strategic objectives, performance achievements, and CAPA measures to the Board of Directors.
Management level	Through regular/irregular meetings, top management level would discuss with business units on ESG from the perspectives of the impact degrees brought, strategies and goals instructed by the Board of Directors, as well as the target performance implementation schemes.
Business units	- To identify risk issues and discuss planning schemes across units. - To propose risk management objectives and action schemes.
Auditing Office	- To assess the effectiveness of the Company’s risk management system and its operation mechanism - To perform audits and submit risk management results to the Audit Committee and the Board of Directors on a regular basis.
Human Resources Department	Based on the risk assessment results from the previous year (risk score = frequency of occurrence * severity), and according to the determined risk control levels, regularly monitor the improvement outcomes and revise operational procedures accordingly.

(IV) Risk Management Process

Constructing a proactive risk management mechanism, GCE allows its business units to be capable of properly responding to internal and external risks through risk management procedures, mitigating or avoiding impacts, and ensuring sustainable operation. The methodology thereof lies in establishing the processes of risk management environment, risk identification, risk assessment, risk processing, supervision and examination, communication and consultation, and the like, as well as formulating strategies and proposing action schemes.



(V) Risk Identification and Countermeasures

When identifying annual material topics, externally, GCE employs observation, monitoring, and analysis of market trends and industry dynamics. Internally, identification is conducted through the analysis of operational data, interviews with department managers, and questionnaires.

For operational-related risks, specific countermeasures have been established for assessing financial risks, environmental and occupational health and safety hazards, and labor and ethical risks. Based on the risk levels: high, moderate, low, or minor, the risks are then reported, controlled and presented during the annual management review meetings, where discussions revolve around setting improvement objectives for the year and establishing corresponding risk targets.

1. Effect on the Company's losses due to interest and exchange rate fluctuations and inflation, as well as countermeasures to be taken in the future

The major risks associated with GCE's operating activities are the risk of changes in foreign currency exchange rates and the risk of changes in interest rates:

(1) Exchange rate risk

Several of GCE's subsidiaries engage in foreign currency-denominated sales and import transactions, which cause the Consolidated Company's exposure of changes in foreign exchange rates. Approximately 97.59% of the Consolidated Company's sales were not denominated in the functional currency of the trading group entities and approximately 37.07% of the cost amount was not denominated in the functional currency of the trading group entities. The Consolidated Company manages the exchange rate exposure within the scope of the policy and utilizes forward exchange contracts to manage the risk.

The carrying amounts of the Consolidated Company's monetary assets and monetary liabilities that are not denominated in a functional currency at the balance sheet date (including monetary items denominated in a non-functional currency that have been eliminated in the consolidated financial statements).

(2) Interest rate risk

Interest rate risk arises because entities within the Consolidated Company borrow funds at both fixed and floating interest rates. The Consolidated Company manages interest rate risk by maintaining an appropriate mix of fixed and floating interest rates.

2. Operation-related credit risk

The outstanding accounts receivable of GCE are mainly from a global customer base and most of the receivables are not secured by collateral or credit guarantees. Although the Company has procedures in place to supervise, manage and reduce the credit risk of accounts receivable, there can be no assurance that such procedures will completely avoid losses arising from credit risk. Such credit risk would increase in a deteriorating economic situation. As of December 31, 2021 and 2022, all of the top ten customers accounted for 74% and 72% of the Company's accounts receivable balance, respectively, and the concentration of credit risk on the remaining accounts receivable was relatively insignificant.

3. Effects on the Company's financial operations due to the technological changes in recent years (including cyber security risks) and countermeasures:

To keep abreast of changes in the market in response to changes in technology, GCE has been obtaining industry information through exhibitions, the Internet, industry, trade, relevant conferences held by trade unions and the like, in conjunction with the improvements of its R&D technologies and excellent competitive advantages, to expand its business and precisely grasp the pulse of industry information, thereby creating better results for the future. The Company's information security management rules and provisions must comply with relevant government laws and regulations (such as the Criminal Code, Fair Trade Act, Patent Act, Trademark Act, Copyright Act, Personal Data Protection Act and Trade Secrets Act.) The "Information Security Promotion Organization", responsible for the establishment and promotion of the Company's information security system, shall regularly implement information security education and training, and advocate information security policy and relevant implementation provisions.

4. Information security risks, potential risks and countermeasures:

In addition to the external cyber attacks that cause information security risks with the Company and the Group, inadequate awareness and knowledge of internal information security, malware, viruses, spyware and other cyber threats that cause abnormal or interrupted operation of information core systems, data theft and malicious destruction are all risk factors that affect the Company's normal operations. Therefore, in addition to establishing the information security policy as the highest guideline, the Company has established the relevant information security management framework and operating procedures, as well as requires its leadership level to regularly hold information security meetings every year to review the Company's existing information security practices and formulate improvement plans.

In view of the risks that the Company may encounter in its operation, the following explanations and countermeasures are proposed hereby:

(1) Reinforcement of employee awareness of information security

Since the data, information and systems handled by internal employees are directly related to the Company's operation, even the slightest mistake may affect the Company's internal information security due to downloading or infection with malware. As a result, in addition to enhance various host capabilities and protections, the Company issues internal information security announcements and information security drills from time to time to reinforce employees' security awareness by focusing on the current high-risk information security attack schemes and security protections.

(2) Virus and malware threats

Since the sources of computer virus may come from the website visited, e-mails or mobile storage medias containing malware, malware downloads and so on, the Company has established multi-level defense and detection mechanisms by installing anti-virus system on every internal computer, controlling mobile storage devices, and monitoring and protecting them through a central control scheme, all of which are devised to reduce the risk of malware infection and attack.

(3) Cyber attack

Considering that hacking attacks will have the most direct impact on business operations, the Company not only set up the necessary protection measures including critical network segment cutting and access authorization control, firewall, intrusion detection and the like, but also conducts regular/irregular vulnerability detection and penetration testing on critical hosts, and regularly reviews the information security vulnerability notification and remediation work to minimize the vulnerability and the chance of being attacked.

(4) Interruption of operations

For critical operational services and data, the Company has off-site server rooms to place important hosts, conducts daily local/remote backups, and performs regular system restore drills. In the event of a significant operational system or database failure or interruption, operations can be resumed within the time limits prescribed by different services.

III. Ethical Corporate Management

(I) Ethical Corporate Management Policy

In order to implement the Company's ethical management and to facilitate its sustainable development, GCE has established the "GCE Ethical Corporate Management Best Practice Principles," which expressly stipulate that Directors, managerial officers and employees shall not offer, promise, request or accept any improper benefits, directly or indirectly, in the course of their business activities. Both the Board of Directors and the management level have been implementing the commitments of this ethical management policy.

In order to perfect the Company's administration in ethical management, GCE has assigned the "Chairman's Office" under the jurisdiction of the Board of Directors to be responsible for promoting the formulation, supervision and implementation of the Company's corporate ethics, corporate ethical management policy and preventive schemes. The Chairman's Office's job description covers mainly the following matters as well as reporting to the Board of Directors regularly every year:

1. To assist in incorporating integrity and ethical values into GCE's management strategies, and establishing relevant fraud prevention measures in accordance with laws and regulations to ensure ethical corporate management.
2. To regularly analyze and assess the risk of unethical conducts that could occur within the scope of business, formulate schemes to prevent unethical conducts, as well as formulate standard operating procedures and conduct guidelines related to work and business in each of the aforesaid schemes.
3. To plan the internal organization, staffing and job duties, as well as devise a mutual supervisory check and balance mechanism for business activities with high risk of unethical conducts within the scope of business.
4. To promote and coordinate the publicity and training of ethical corporate management policy.
5. To plan a reporting system to ensure the effectiveness of implementation.
6. To assist the Board of Directors and management level to check and assess whether the preventive measures established to implement ethical corporate management are operating effectively, and regularly make reports on the assessment of compliance of relevant business processes.
7. To prepare and properly maintain documented information on the Company's ethical corporate management policy, compliance statement, implementation of commitments, enforcement status and the like.

(II) Rules and Regulations Related to Ethical Corporate Management

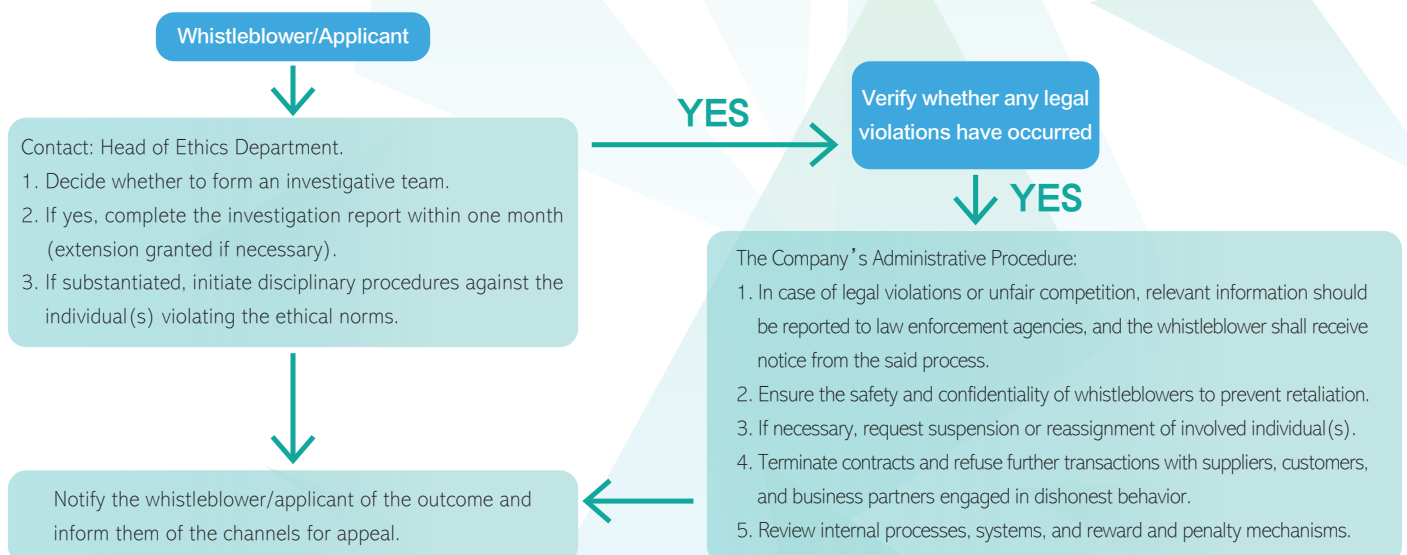
1. To comply with the aforesaid ethical corporate management policy and business concept, GCE has not just established the "GCE Ethical Corporate Management Best Practice Principles," it has also established its "Moral Hazard Assessment and Handling Procedure" and "Corporate Code of Ethics" to expressly specify the operating procedures, conduct guidelines, as well as disciplinary and complaint systems for violations to strengthen relevant preventive measures. The "Moral Hazard Assessment and Handling Procedure" is of particular concern to the management level, where it grades moral hazards according to their risk levels: high/moderate/low/slight, and reports and control them in accordance with the operating procedures; at the annual management review meeting, the annual improvement goals of moral hazards are discussed and the annual risk goals are set.
2. GCE also regulate its reporting system and reward system, which details the list of reporting channels for receiving reports of suspected bribery/bribery and other violations of corporate code of ethics, and provides convenient reporting channels for employees. Beside, both the Company's "Moral Hazard Assessment and Handling Procedure" and "How to Report Violations and Protective Measures for Those Who Report Violations" also define the protection measures for whistle-blowers to ensure that their identities are not disclosed, and that there will be not any detriment arising thereof as a result.

(III) Implementation of Ethical Corporate Management

1. The corporate code of ethics, procurement policies and working rules of employees formulated by GCE all contain the provision of ethical conducts.
2. On November 10, 2022, the Chairman's Office gave a consolidated report to the Board of Directors in accordance with the Company's ethical corporate management policy, preventive schemes and supervision implementation.
3. The implementation results achieved in 2022 are as follows:
 - (1) Risk assessment of labor and corporate ethics was conducted in 2021 and the assessment result indicated low risk.
 - (2) The number of reports received through internal and external complaint channels in 2022 was zero.
 - (3) The number of reports related to violations of corporate ethics and ethical corporate management in 2022 was 0.
4. The Human Resources Department submits an implementation scheme and reports it to the management level every year in accordance with the Company's corporate ethics policy to implement continuous improvement. Meanwhile, it regularly holds internal or external training courses of, such as the Corporate Code of Ethics and the RBA Code of Conduct for the Company's top 20 suppliers.

Date of educational training	Course title	Trainees	Training hours/attendance
2022	Responsible Business Alliance (RBA(EICC)) Code of Conduct (Including labor, corporate ethics, health and safety, environmental issues)	All employees	2,151 hrs / 2,151 people
2022	GCE Employee Corporate Ethics and Moral Awareness Promotion	All employees	2,187 hrs / 2,187 people
July 15, 2022	What's New in the Law - Corporate Ethics (Including personal data protection and information security, online and digital courses)	Supervisors, administrator and engineers (Grade 4 or above).	649 hrs / 649 people
July 14, 2022	Greenhouse Gas Inventory and RBA (EICC) Promotion and Trade Secret Protection Policy	Top 20 suppliers, resident service providers and dispatch work/human resource agencies	70 hrs / 35 people

■ Flowchart for investigation of ethical violations (including alleged cases):



IV. Audit Mechanism

(I) Internal Control System

Following the Company's relevant internal control requirements, GCE requires its individual units to establish their own operational processes and set up respective internal control items in accordance with the industrial characteristics and operational process requirements, which are approved by the individual unit management supervisors, so as to control the risks that may arise from the relevant operations and promote the Company's sound operation; meanwhile, the Company regularly performs internal control self-assessments every year, implements an autonomous supervision mechanism, reviews and corrects relevant deficiencies timely to ensure the continued effectiveness of the Company's internal control system.

GCE has currently established the following related cycles for its internal control system to manage and control risks certainly: sales and collection cycle, purchase and payment cycle, payroll cycle, investment cycle, capital acquisition and repayment cycle, equipment cycle, as well as management and control operations.

(II) Internal Audit System

Making use of the Company's internal audit system, operating rules and resources, GCE prepares an annual audit plan, and implements supervision and management according to the plan; if the audit finds internal control deficiencies and abnormalities, a corrective and preventive mechanism is activated, improvement measures are prepared, and the deficiencies and abnormalities are listed as Key Performance Indicators of each department, regularly tracked and managed by the auditors.

(III) Internal Audit Implementation Results

Through the Company's internal audit system, GCE has instructed relevant units to set improvement deadlines for the deficiencies discovered in 2022 and to complete the CAPA measures with a proactive attitude.

V. Operational Continuity

GCE is committed to ensuring that the Company could maintain its critical operations in the event of suffering from the factors, such as natural disasters, capital deployment, international environment, manpower shortages, infectious diseases, information systems incidents or man-made accidents, and to resuming its normal operations as soon as possible, from which to reduce the duration of operational interruptions, mitigate the impact of risks, and protect the interests of stakeholders. In particular, the issue of climate change in recent years may lead to temperature rise and flooding due to short-term heavy rainfall. Moreover, with the advent of the post-epidemic era, how to establish relevant countermeasures even further manifests that the Company should urgently and completely maintain an operational continuity mechanism.

(I) Planning and Exercises of Operational Continuity

Each plant of GCE has established its own operational continuity related rules according to individual different plant operations, and also its own "Operational Continuity Plan" and "Contingency Control Procedure" to assess various events that may affect operations.

The scope of the assessment includes:

1. Interruption of product shipment and supply caused by fires
2. Interruption of the supply of raw materials, outsourced parts and purchased parts
3. Key and major equipment failures, utility failures (e.g., power and gas outages)
4. Insufficient human resources
5. Transportation failures
6. Bulk returns from customers

- 7. Production halt caused by quality abnormalities
- 8. In-plant testing or experimental equipment abnormalities
- 9. Information system deficiencies
- 10. Occurrence of environmental or emergency events

The aforesaid assessment was to ensure that the contingency planning system is generally appropriate, adequate and effective, and has a general capacity for continuous improvement, which is in line with the Company’s existing system operation.

Considering the more likely risks to operations in 2022, the Company’s plant in Taiwan conducted a recovery drill from disrupting event and hold a review meeting after the drill during the same year to minimize the harms that may be caused by emergency incidents suddenly encountered by the Company, thereby ensuring the safety of personnel, legal compliance, customer equity, the Company’s goodwill, as well as the preservation of the Company's assets. Moreover, top priority on resuming the provision of services to the Company’s core business within the shortest possible time is placed to maintain operational continuity and provision of services to our customers.

VI. Information Security

(I) Cyber Security Risk Management Framework

1. Information Security Management System Framework

The implementation of the ISO 27001 (Information Security Management System, ISMS) is mainly divided into five steps:

1. Define a security policy;
2. Define the objectives and scope of the ISMS;
3. Conduct a risk assessment;
4. Implement information security controls;
- and 5. Enforce audits in conjunction with ongoing control assessment.

2. Information Security Goals

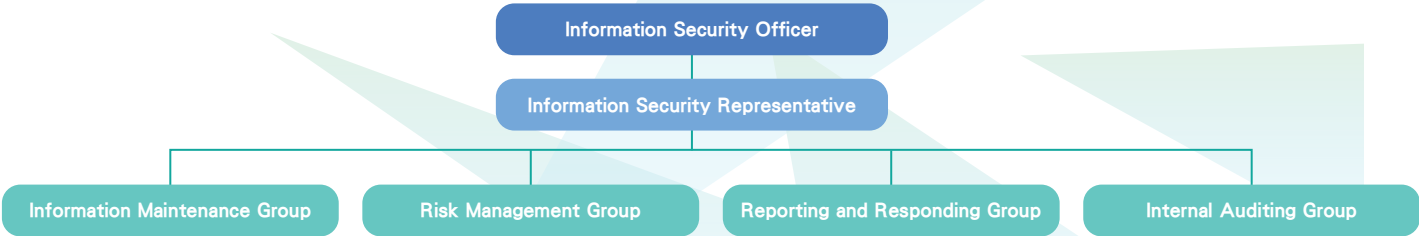
In accordance with the Information Security Policies, define the goals of the Information Security Management System. Each year, statistical reports are compiled for each goal to confirm the status of achievement. The goals are described as follows:

- (1) Ensure the protection and preservation of company and customer data, preventing intentional or unlawful acts.
- (2) Comply with legal requirements, regulatory decrees from competent authorities, customer contracts, and responsibilities and duties of the professional.
- (3) Ensure the accuracy and completeness of information provided.
- (4) Respond appropriately and manage information security incidents that lead to harm to stakeholders’ interests.
- (5) Ensure the continuity and timeliness of service provided.

3. Risk Assessment and Management

Scientific methods are used to conduct risk assessment and plan risk protection plans against the implementation scope of information security management system. It is through the management reviews of the “Information Security Committee” to confirm whether risk management is effective, and examine whether the risk prevention measures effectively reduce the relevant risks and achieve the expected objectives.

4. Information Security Committee



(II) Information Security Policies

To ensure the security of information data, systems, equipment and network communications, to effectively reduce the risk of theft, misuse, leakage, tampering or destruction of information assets due to human negligence, intentional or natural disasters and the like, and to establish an information security management system, and GCE has established the Information Security Policies with the following objectives:

1. Ensure the confidentiality, integrity, availability, and legality of all collected, processed, and utilized information and assets.
2. Maintain uninterrupted operation of information technology processes for core business functions and the effectiveness of the information security management system to improve the quality of information services both internally and externally.

Specific Information Security Management Schemes

Cyber Security	A. Provision of real-time trend analysis of important host alarm systems and abnormal behaviors B. Reinforcement of network firewalls and network controls to prevent the spread of computer viruses across machines and factories C. Augmentation of authentication to enhance information security D. Annual information security exposure survey and analysis, and continuously strengthen management of possible attacks
Device Security	A. Establishment of endpoint anti-virus measures according to computer types to strengthen malware behavior detection B. Installation of a virus-scanning mechanism for machines entering the factory to prevent machines containing malicious software from entering the Company
Application Security	A. Version controls of developing applications and quality analysis of web page codes B. Regular monthly vulnerability sweeping and annual outsourced penetration testing C. Persistent enhancement of the Company's application security control mechanism by integrating development processes and platforms
Data Security Protection Technology Enhancements	A. Implementation of promotion and inventory of trade secrets and confidential information B. Enforcement of document classification and data encryption controls and effective tracking C. Carrying out mail outbound controls, a mail audit mechanism, mail backups and advanced mail defenses D. Enhancement of the remote back-up mechanism
Education, Training and Promotion	A. Strengthening employees' awareness of email social engineering attacks, and implementing phishing email defense detection B. Regularly holding courses related to trade secrets and information security awareness promotion, at least two hours per year C. Ad hoc dissemination of information security risk warning notices and information security awareness mailings

Resources Having Been Invested in Cyber Security Management

Certification	■ The Company passed ISO/IEC 27001: 2013 Information Security Certification in December 2022.
Policy	■ The Company formulated 25 ISMS information security management measures, adding 1 measure in 2022; revised 13 measures. ■ The Company established the Information Security Committee and the Chief Information Security Officer in September 2022. ■ The Company formulated 10 trade secrets management measures, and they are expected to change to Regulations of Intellectual Property Rights Management in 2023.
Education, Training and Promotion	■ Courses related to trade secrets and information security awareness promotions were given 2 times in 2022. ■ Employees' drills on email social engineering attacks were performed 2 times in 2022. ■ Information security risk warning notices and information security awareness mailings were disseminated 10 times in 2022. ■ Contingency drill on infringement of trade secrets was performed 1 time in 2022. ■ Information security disaster recovery drills were performed 20 times in 2022. ■ Advanced courses of ISMS for Information Personnel were given 5 times in 2022.

VII. Trade Secrets

In order to maintain market competitiveness, GCE not only dedicates efforts to the development and enhancement of products and services but also places significant emphasis on safeguarding trade secrets. GCE has established a trade secrets management system and formulated regulations such as the “Trade Secrets Management Operating Procedures,” ensuring the continued operation of relevant systems to verify their appropriateness and effectiveness.

(I) Trade Secrets Management

1. Trade Secrets Management Goals

GCE implements a trade secrets management system in compliance with the Trade Secrets Act and internal regulatory requirements to ensure the proper protection of customers’ trade secrets and achieve the following goals:

- (1) Define the scope of trade secrets to protect the Company's intellectual property and respect employees’ personal rights;
- (2) Provide appropriate security measures for trade secrets to fulfill the Company's duty of good management;
- (3) Formulate a culture of actively safeguarding Company's trade secrets through system establishment, effective communication, and training;
- (4) Legally and reasonably establish an electronic record retention and management mechanism for trade secrets use to monitor data usage;
- (5) In the event of trade secrets infringement incidents leading to damage to stakeholders’ interests, respond and handle appropriately.

2. Trade Secrets Management Organization

To effectively protect and manage trade secrets, GCE has defined the division of responsibilities for relevant employees in the “Trade Secrets Management Operating Procedures.” The Chairman serves as the Chief Convener of Trade Secrets Management, overseeing representatives of project management and the project management team. For other activities, other relevant teams, including the Audit Team and the Response Team for Infringement Incidents shall be established. By clarifying responsibilities, the Company ensures the proper implementation and supervision of the trade secrets protection mechanism.

3. Implementation Approach

GCE employs the “Plan-Do-Check-Act (PDCA)” cyclic operational model for our trade secrets management system, and the following are the execution approach:

(1) Plan

Based on GCE’s overall strategy and goals, the Trade Secrets Management Organization is established to control potential threats and vulnerabilities, plan risk assessment and security control mechanisms to establish the trade secrets management system.

(2) Do

According to results of the assessment and planning, necessary trade secrets control mechanisms shall be established or measures in the existing mechanisms shall be revised.

(3) Check

The implementation of various trade secrets management system operations is thoroughly supervised and audited to ensure effectiveness. The trade secrets management policy is conducted in parallel with GCE’s existing audit system, with regular internal audits of trade secrets to ensure proper implementation.

(4) Act

Based on the results and recommendations of the aforementioned supervision and audit, corrective and preventive measures are taken by each unit to enhance and implement the necessary control mechanisms for ensuring the continuous operation of the trade secrets management system.

(II) Trade Secrets Regulations and Implementation

1. Internal Regulations

GCE has established the “Trade Secrets Management Operating Procedures” and, concurrently, developed operational regulations and forms specific to the requirements outlined in the procedures. These include regulations for the inventory of trade secrets and confidential information, personnel trade secrets and confidentiality operations, trade secret risk assessment operations, etc.

2. Implementation of Specific Requirements

(1) Trade Secret File Requirements

GCE conducts inventories of all trade secrets and confidential information. These files contained trade secrets are classified based on importance and marked with corresponding levels of confidentiality. During file transmission, appropriate security controls are exercised. Throughout the period of possession, certain control measures are executed in line with the “Trade Secrets File Management Operating Procedures.”

(2) Employees Confidentiality Requirements

All GCE’s employees are obliged to adhere to confidentiality requirements pertaining to trade secrets, including those related to technical and business-related secrets, as well as items that require third-party confidentiality due to contractual obligations. Unauthorized disclosure to third parties is strictly prohibited without proper authorization. These requirements are executed according to the “Employees Trade Secrets and Confidentiality Operations Regulations” established by GCE.

(3) Employees Awareness Requirements

GCE incorporates trade secrets protection as a mandatory course in the annual education and training programs, aiming to enhance employees’ awareness of trade secrets and confidential information protection.

(4) Information, System, Equipment, and Network Security Requirements

In the post-pandemic era, with increased demand for remote work and virtual meetings, GCE highly emphasizes on information security and data protection. Specific requirements concerning information security, network security, and endpoint device security are detailed in the aforementioned “Information Security” section.

(5) Environmental Requirements

GCE advocates for clutter-free workspaces and desktops on computers, and encourages employees to securely store sensitive data to prevent the risk of leaking confidential information.

(6) Email Operations Management Requirements

GCE requires all employees to diligently safeguard their email account credentials and promotes information security awareness to prevent clicking on unknown emails.

(7) Requirements for Third-Party Personnel

To mitigate the risks of unauthorized use of trade secrets and human errors, GCE stipulates requirements for third-party personnel involved in visits, technical exchanges, plant inquiries and quotations, customer complaint handling, etc. These requirements are outlined in the “Third-Party Confidentiality and Security Management Operating Procedures” and “Customer Complaint Handling Operating Procedures.”

Moreover, suppliers collaborating with GCE and other third parties directly or indirectly engaged in customer production and service provision are required to sign the “GCE Supplier Confidentiality and Integrity Commitment” and the “GCE Confidentiality Commitment (Individual)” prior to providing their services.

In cases where business involving trade secrets is outsourced, the project lead must communicate and consult with the highest-ranking information department executive before initiating the project. This ensures that the confidentiality of trade secrets information is maintained throughout outsourced operations.



Chapter 7.

Supply Chains

Joint Sustainable Development:

Considering that suppliers are indispensable partners, the Company is expecting to achieve a strategic goal by formulating a common ESG vision to jointly move forward with them towards sustainable development. On top of that, the Company is also actively engaged in supplier assessment and assistance with environmental, social and corporate governance related issues.

No.	Item	2022 Goal	2022 Performance
1	Training completion rate of supplier education and training	100%	100%

GCE has established its own “Supplier Management Procedure” that gradually incorporates environmental, social and corporate governance-related issues in the selection and management of suppliers, where for example, in the environmental aspect, there are green procurement and raw material use management; in the social aspect, there are service quality, occupational safety and health; and in the governance aspect, there are operational continuity, audit mechanism, risk management, corporate ethics and the like.

I. Supplier Selection and Sourcing Strategy

(I) Supplier Selection Measures

GCE has chosen to work with suppliers that have embraced sustainability awareness and commitment, and that have a genuine commitment to sustainability as a business goal. Therefore, whether a supplier is in the “Qualified Supplier List” of GCE will depend on its qualifications in environmental, social and corporate governance-related issues gradually assessed at specific review stages or by certain assessment forms, such as the assessments given at meetings of the supplier qualification assessment team, and the assessments done through the “Supplier Assessment Form.” To this end, the Company has successively incorporated the following aspects for conducting the supplier assessments.

Additionally, GCE’s “Qualified Supplier List” is made available for internal inspection and supervision by the Company.

- The supplier’s goods or services have international / national green or environmental protection standard certifications.
- The supplier possesses an energy management and greenhouse gas response mechanism.
- The supplier is willing to commit to and promote the Company's human rights policy.
- The supplier has an occupational safety and health management system, and there have been no major occupational safety incidents ever in the past.
- The supplier operates a corporate ethical management mechanism, and there have been no cases of corruption or bribery ever in the past.
- The supplier operates an operational continuity mechanism to cope with risks.
- The supplier operates a risk control mechanism.
- The supplier operates an adequate audit mechanism.

(II) Sourcing Strategy

■ Green Procurement

The company has been practicing green thinking through its procurement activities, starting with source management of raw materials, banning harmful substances, expanding the procurement of environmental protection products, and banning the use of products from conflict mining areas to reduce the environmental impact of raw materials.

Upholding the spirit of green procurement, GCE has been giving priority to goods or services certified by international/national green or environmental standards during the procurement stage. Meanwhile, in addition to signing contracts with suppliers at the procurement stage, GCE has also reached agreements with suppliers to sign the “RBA Code of Conduct Statement and Commitment” and “Supplier Confidentiality and Integrity Commitment,” and to incorporate requirements of environmental protection, social responsibility and corporate governance into the terms of the agreements and they must be signed before the completion of the procurement process to ensure that the suppliers recognize the concept of sustainable development and move together towards the common goals.

In 2022, all new suppliers have signed the above commitments on environmental protection (e.g., conflict minerals, greenhouse gases, energy conservation) and social responsibility (e.g., child labor, anti-corruption, anti-discrimination, etc.).

To this end, the Company will even continue to incorporate the following components to ensure that the goods or services provided comply with the GCE requirements in order to meet the spirit of environmental, social and corporate governance and to facilitate compliance by suppliers. In the event of any breach or deficiency by a supplier, GCE will work together with the supplier to improve or refine the problem with respect to the provisions, but if the supplier has no intention to act in concert with GCE, it may be subject to the warning measures of liquidated damages or even termination/release of the contract. In doing so, it is to expect that the supply chain can jointly work with GCE to pursue the goal of sustainable development.

- The supplier’s goods or services shall persistently keep their international / national green or environmental protection standard certifications.
- The supplier shall persistently maintain its energy management and greenhouse gas response mechanism.
- The supplier shall persistently promote the Company’s human rights policy.
- The supplier shall persistently maintain its occupational safety and health management system.
- The supplier shall persistently maintain its corporate ethical management mechanism.
- The supplier shall thoroughly operate its operational continuity mechanism to cope with risks.
- The supplier shall thoroughly operate its risk control mechanism.
- The supplier shall comply with laws and regulations to be followed.
- The supplier shall thoroughly operate its audit mechanism.
- The supplier shall comply with GCE’s policies on environmental protection and human rights, social responsibility, and code of corporate governance.
- The supplier shall receive GCE’s publicity, education, training and audits, as well as follow-up corrective and preventive measures.
- The supplier shall be subject to the effect of liquidated damages, termination or release of the contract if it fails to perform or improve the breach or deficiency found.

II. Supplier Management

Basically, GCE formulates its supplier management procedures and principles for managing the supply chains by referring the provisions defined in the RBA Code of Conduct. Due to the large number of cooperative suppliers, suppliers are divided into raw material suppliers, equipment suppliers, construction suppliers, resident suppliers, waste suppliers and general suppliers according to the type of procurement. Even though there have been already preventive management measures of qualifications or abilities in the selection and sourcing stages, implementation and supervision of those measures are even more important. Therefore, GCE adopts a sound assessment mechanism during the contract period. For example, professional colleagues from relevant departments are designated within the Company to form a professional, impartial and independent assessment team. Supplier assessments of components in labor, human rights, health and safety, environmental standards, business ethics, management systems and like are regularly launched every year, where the “Supplier Assessment Form” and supporting information are retained as implementation records and evidence to ensure the suppliers’ safe working environment, human rights protection, protection and respect of labor rights and interests, legal compliance, integrity and ethics, and environmental protection. In doing so, the possible occurrence of associated risks is effectively managed, and a relationship of coexistence and co-prosperity with suppliers is then built.

On top of that, GCE also holds supplier meetings and training activities from time to time every year to actively explain the Company’s business philosophy, management measures and mechanisms, future strategies and action schemes to suppliers. Recently, more emphasis has been placed on the management approach of sustainable development in all aspects of environment, society and corporate governance. It is expected that in addition to the regular audit activities conducted against the suppliers, their performance will be further confirmed through publicity and training activities to meet the requirements of GCE’s policy, management mechanisms and measures. In doing so, GCE will continue to work hand in hand with its suppliers to achieve the Company’s expected goals and create good operational performance.

If any deficiencies by a supplier are found in the future, GCE and the supplier will immediately initiate a correction and prevention mechanism and follow-up improvement supervision measures to ensure the rights and interests of both parties and the achievement of sustainable development goals. Through the audit mechanism in 2022, although deficiencies in the suppliers’ practices were found, they all actively act in concert with the correction and prevention activities within the time limit. After another review and assessment, no termination of the contract occurred.

Suppliers Audited in 2022	
Region	Numbers of Suppliers
Taiwan plants	10
China plants	37
Total	47

In the future planning of GCE, it will focus more on the green management of suppliers by not only handling it according to customer requirements, but also gradually requiring suppliers to incorporate measures such as power saving, water saving, emission reduction, and regular environmental assessment of risks. Even though there have been already preventive management measures of qualifications or abilities in the selection and sourcing stages, implementation and supervision of those measures are even more important. This is because the issues, such as the changes in time and space in response to the mainstream trend of climate change and environmental protection, frequent changes in legal requirements, diversified customer requirements, increasingly stringent human rights policies and social responsibilities, and the expansion of corporate governance and evaluation are increasingly concerned by general public. It is expected that GCE and suppliers can learn from each other, jointly communicate and work together on issues related to environment, society and corporate governance.



Appendix

GRI Content Index

GCE has reported the information of 2022 (from January 1 to December 31, 2022) cited in the GRI Content Index with reference to the GRI standards.

The following indicators have been externally verified, and the results of the verification are detailed in the independent assurance opinion statement.

■ GRI 1: Foundation 2021 [GRI 1 does not include any disclosures]

■ GRI 2: General Disclosure 2021

GRI Standards	Disclosure item	Chapter, page number or content overview
Organizational profile and reporting practice		
2-1	General Disclosure 2021	About the Report Chapter 2. Company Profile
2-2	Entities included in the organization's sustainability reporting	About the Report Chapter 2. Company Profile
2-3	Reporting period, frequency and contact point	About the Report Chapter 1. Sustainability Strategy
2-4	Restatements of information	None restatements of information for the current year.
2-5	External assurance	Appendix Verification Statement/Certificate
Activities and workers		
2-6	Activities, value chain and other business relationships	Chapter 1. Sustainability Strategy Chapter 2. Company Profile, I. Brand Image and Operations Strategy Chapter 7. Supply Chains
2-7	Employees	Chapter 5. Social
2-8	Workers who are not employees	Chapter 5. Social
Governance		
2-9	Governance structure and composition	Chapter 1. Sustainability Strategy Chapter 2. Company Profile, II. Corporate Governance Structure Chapter 2. Company Profile, III. Governance structure of the Board of Directors Chapter 2. Company Profile, IV. Functional Committees Chapter 2. Company Profile, V. Top Management Team
2-10	Nomination and selection of the highest governance body	Chapter 2. Company Profile, III. Governance structure of the Board of Directors
2-11	Chair of the highest governance body	Chapter 2. Company Profile, III. Governance structure of the Board of Directors
2-12	Role of the highest governance body in overseeing the management of impacts	Chapter 1. Sustainability Strategy Chapter 2. Company Profile, III. Governance structure of the Board of Directors Chapter 3. Climate Change Chapter 4. Environmental

GRI Standards	Disclosure item	Chapter, page number or content overview
2-13	Delegation of responsibility for managing impacts	Chapter 1. Sustainability Strategy Chapter 2. Company Profile, III. Governance structure of the Board of Directors Chapter 2. Company Profile, V. Top Management Team Chapter 3. Climate Change Chapter 6. Corporate Governance, II. Risk Control
2-14	Role of the highest governance body in sustainability reporting	Chapter 1. Sustainability Strategy Chapter 2. Company Profile, III. Governance structure of the Board of Directors Chapter 3. Climate Change
2-15	Conflicts of interest	Chapter 2. Company Profile, III. Governance structure of the Board of Directors Chapter 5. Social, I. Human Rights and Labor Relations Chapter 5. Social, III. Comprehensive Employee Care and Benefits Chapter 6. Corporate Governance, III. Ethical Corporate Management
2-16	Communication of critical concerns	Chapter 1. Sustainability Strategy Chapter 2. Company Profile Chapter 3. Climate Change Chapter 6. Corporate Governance, IV. Audit Mechanism
2-17	Collective knowledge of the highest governance body	Chapter 2. Company Profile, III. Governance structure of the Board of Directors
2-18	Evaluation of the performance of the highest governance body	Chapter 2. Company Profile, III. Governance structure of the Board of Directors
2-19	Remuneration policies	Chapter 2. Company Profile, III. Governance structure of the Board of Directors
2-20	Process to determine remuneration	Chapter 2. Company Profile, III. Governance structure of the Board of Directors
2-21	Annual total compensation ratio	Chapter 5. Social
Strategy, policies and practices		
2-22	Statement on sustainable development strategy	Message from the Chairman
2-23	Policy commitments	Chapter 1. Sustainability Strategy Chapter 2. Company Profile, I. Brand Image and Operations Strategy Chapter 3. Climate Change Chapter 4. Environmental Chapter 5. Social Chapter 6. Corporate Governance Chapter 7. Supply Chains
2-24	Embedding policy commitments	Chapter 1. Sustainability Strategy Chapter 2. Company Profile, III. Governance structure of the Board of Directors Chapter 3. Climate Change Chapter 4. Environmental Chapter 5. Social

GRI Standards	Disclosure item	Chapter, page number or content overview																											
2-25	Processes to remediate negative impacts	Chapter 1. Sustainability Strategy Chapter 3. Climate Change Chapter 4. Environmental Chapter 5. Social, I. Human Rights and Labor Relations Chapter 5. Social, III. Comprehensive Employee Care and Benefits Chapter 6. Corporate Governance, I. Legal Compliance Chapter 6. Corporate Governance, II. Risk Control Chapter 6. Corporate Governance, IV. Audit Mechanism Chapter 7. Supply Chains																											
2-26	Mechanisms for seeking advice and raising concerns	Chapter 1. Sustainability Strategy Chapter 3. Climate Change Chapter 4. Environmental Chapter 5. Social, I. Human Rights and Labor Relations Chapter 5. Social, III. Comprehensive Employee Care and Benefits Chapter 6. Corporate Governance, II. Risk Control Chapter 6. Corporate Governance, III. Ethical Corporate Management Chapter 7. Supply Chains																											
2-27	Compliance with laws and regulations	Chapter 6. Corporate Governance, I. Legal Compliance																											
2-28	Membership associations	<table> <tr> <th>No.</th><th>Name of association and organization</th><th>Country or region located</th></tr> <tr> <td>1</td><td>Taiwan Printed Circuit Association (TPCA)</td><td>Taiwan</td></tr> <tr> <td>2</td><td>Taoyuan City Nurses Association</td><td>Taiwan</td></tr> <tr> <td>3</td><td>Zhongli Industrial Park Development Association</td><td>Taiwan</td></tr> <tr> <td>4</td><td>Zhongli Industrial Park Joint Defense Organization</td><td>Taiwan</td></tr> <tr> <td>5</td><td>Friends of the Police in Taoyuan Community</td><td>Taiwan</td></tr> <tr> <td>6</td><td>Taoyuan Enterprise Chamber</td><td>Taiwan</td></tr> <tr> <td>7</td><td>The National Quality Control Circle</td><td>Taiwan</td></tr> <tr> <td>8</td><td>IPC-Association Connecting Electronics Industries</td><td>Taiwan</td></tr> </table>	No.	Name of association and organization	Country or region located	1	Taiwan Printed Circuit Association (TPCA)	Taiwan	2	Taoyuan City Nurses Association	Taiwan	3	Zhongli Industrial Park Development Association	Taiwan	4	Zhongli Industrial Park Joint Defense Organization	Taiwan	5	Friends of the Police in Taoyuan Community	Taiwan	6	Taoyuan Enterprise Chamber	Taiwan	7	The National Quality Control Circle	Taiwan	8	IPC-Association Connecting Electronics Industries	Taiwan
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8	IPC-Association Connecting Electronics Industries	Taiwan																											
Stakeholder engagement																													
2-29	Approach to stakeholder engagement	Chapter 1. Sustainability Strategy																											
2-30	Collective bargaining agreements	Although there's no labor union and group agreement in the Company, we hold regular labor-management meetings and have transparent communication channels.																											

Material Topics

GRI Standards	Disclosure item	Chapter, page number or content overview
GRI 3: Material Topics 2021		
3-1	Process to determine material topics	Chapter 1. Sustainability Strategy
3-2	List of material topics	Chapter 1. Sustainability Strategy
Economic Performance		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 2. Company Profile
GRI 201: Economic Performance 2016		
201-1	Direct economic value generated and distributed	Chapter 2. Company Profile
Energy		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 4. Environmental
GRI 302 : Energy 2016		
302-1	Energy consumption within the organization	Chapter 4. Environmental
302-3	Energy intensity	Chapter 4. Environmental
302-4	Reduction of energy consumption	Chapter 4. Environmental
Water and effluents		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 4. Environmental
GRI 303: Water and effluents 2018		
303-1	Interactions with water as a shared resource	Chapter 4. Environmental
303-2	Management of water discharge-related impacts	Chapter 4. Environmental
303-3	Water withdrawal	Chapter 4. Environmental
303-4	Water withdrawal	Chapter 4. Environmental
303-5	Water consumption	Chapter 4. Environmental

GRI Standards	Disclosure item	Chapter, page number or content overview
Emissions		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 4. Environmental
GRI 305: Emissions 2016		
305-1	Direct (Scope 1) GHG emissions	Chapter 4. Environmental
305-2	Energy indirect (Scope 2) GHG emissions	Chapter 4. Environmental
305-3	Other indirect (Scope 3) GHG emissions	Chapter 4. Environmental
305-4	GHG emissions intensity	Chapter 4. Environmental
305-5	Reduction of GHG emissions	Chapter 4. Environmental
Waste		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 4. Environmental
GRI 306: Waste 2020		
306-1	Waste generation and significant waste-related impacts	Chapter 4. Environmental
306-2	Management of significant waste-related impacts	Chapter 4. Environmental
306-3	Waste generated	Chapter 4. Environmental
306-4	Waste diverted from disposal (Inside the plant/ outside the plant)	Chapter 4. Environmental
306-5	Waste directed to disposal (Inside the plant/ outside the plant)	Chapter 4. Environmental
Supplier environmental assessment		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 7. Supply Chains
GRI 308: Supplier environmental assessment 2016		
308-1	New suppliers that were screened using environmental criteria	Chapter 7. Supply Chains
308-2	Negative environmental impacts in the supply chain and actions taken	Chapter 7. Supply Chains
Occupational health and safety		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 5. Social

GRI Standards	Disclosure item	Chapter, page number or content overview
GRI 403: Occupational health and safety 2018		
403-1	Occupational health and safety management system	Chapter 5. Social, V. Healthy and Friendly Workplace
403-2	Hazard identification, risk assessment, and incident investigation	Chapter 5. Social, V. Healthy and Friendly Workplace
403-3	Occupational health services	Chapter 5. Social, V. Healthy and Friendly Workplace
403-4	Worker participation, consultation, and communication on occupational health and safety	Chapter 5. Social, V. Healthy and Friendly Workplace
403-5	Worker training on occupational health and safety	Chapter 5. Social, IV. Perfect Employee Cultivation Chapter 5. Social, V. Healthy and Friendly Workplace
403-6	Promotion of worker health	Chapter 5. Social, V. Healthy and Friendly Workplace
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Chapter 5. Social, V. Healthy and Friendly Workplace
403-9	Work-related injuries	Chapter 5. Social, V. Healthy and Friendly Workplace
403-10	Work-related ill health	Chapter 5. Social, V. Healthy and Friendly Workplace
Non-discrimination		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 5. Social
GRI 406: Non-discrimination 2016		
406-1	Incidents of discrimination and corrective actions taken	No such matter in this year
Supplier social assessment		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 7. Supply Chains
GRI 414: Supplier social assessment 2016		
414-1	New suppliers that were screened using social criteria	Chapter 7. Supply Chains
414-2	Negative social impacts in the supply chain and actions taken	Chapter 7. Supply Chains
Customer health and safety		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 5. Social
GRI 416: Customer health and safety 2016		
416-1	Assessment of the health and safety impacts of product and service categories	Chapter 5. Social, VII. Service Quality and Customer Satisfaction

GRI Standards	Disclosure item	Chapter, page number or content overview
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	No such matter in this year

■ Self-defined material topic

GRI Standards	Disclosure item	Chapter, page number or content overview
Legal compliance		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 6. Corporate Governance
Legal compliance		
Legal compliance	Legal compliance	Chapter 6. Corporate Governance, I. Legal Compliance
Information Security		
GRI 3: Material Topics 2021		
3-3	Management of material topics	Chapter 1. Sustainability Strategy Chapter 6. Corporate Governance
Information Security		
Self-defined	Information Security	Chapter 6. Corporate Governance, VI. Information Security

Sustainability Disclosure Topics & Accounting Metrics

Note: The SASB Indicators used is the Hardware Standards for the Technology and Communication Sector (TCS), Version 2018-10.

SASB Code	SASB Accounting Metric	Disclosure in 2022
Product Security		
TC-HW-230a.1	Description of approach to identifying and addressing data security risks in products	The company is a manufacturer of printed circuit boards (PCBs) in the midstream of various electronic products, and downstream customers are suppliers of various electronic products. The products are not directly sold to general consumers, but external advertisements still need to be confirmed by legal affairs before publishing. Products will also be inspected in accordance with regulations and customer requirements. All employees receive education and training for information security policy awareness, and there are specific channels and procedures for customers complaints for quick handling.
Employee Diversity and Inclusion		
TC-HW-330a.1	Percentage of gender and racial/ethnic group representation for (1) management, (2) technical staff, and (3) all other employees	Chapter 5. Social, IV. Perfect Employee Cultivation

SASB Code	SASB Accounting Metric	Disclosure in 2022																									
Product Lifecycle Management																											
TC-HW-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	No such matter in this year.																									
TC-HW-410a.2	Percentage of eligible products, by revenue, meeting the requirements for EPEAT registration or equivalent	The products were not EPEAT registered.																									
TC-HW-410a.3	Percentage of eligible products, by revenue, meeting ENERGY STAR® criteria	This indicator is not applicable to non-end product manufacturers.																									
TC-HW-410a.4	Weight of end-of life products and e-waste recovered, percentage recycled	Chapter 4. Environmental, Other environmental protection measures, 4. Waste and hazardous substance management																									
Supply Chain Management																											
TC-HW-430a.1	Percentage of Tier 1 supplier facilities audited in the RBA Validated Audit Process (VAP) or equivalent, by (a) all facilities and (b) high-risk facilities	No such matter in this year.																									
TC-HW-430a.2	Tier 1 suppliers’ (1) non-conformance rate with the RBA Validated Audit Process (VAP) or equivalent, and (2) associatedcorrective action rate for (a) priority non-conformances and (b) other nonconformance	No such matter in this year.																									
Materials Sourcing & Efficiency																											
TC-HW-440a.1	Description of the management of risks associated with the use of critical materials	GCE complies with the RBA Code of Conduct and promises not to use metals from armed conflict, illegal mining and poor working conditions. At the same time, suppliers are required to fulfill their social responsibilities, and they are also required to communicate this requirement to their upstream suppliers, and use market mechanisms to prevent such behaviors. For other risk management, please refer to 6. Corporate governance.																									
Activity Metric																											
TC-HW-000.A	Number of units produced by product category	<table><tr><th rowspan="2">Business items</th><th colspan="2">2022 (Consolidated)</th></tr><tr><th>Turnover</th><th>Business percentage</th></tr><tr><td>Double-sided PCB</td><td>63,936</td><td>0.20%</td></tr><tr><td>Multilayer PCB</td><td>32,721,128</td><td>99.80%</td></tr><tr><td>Total</td><td>32,785,064</td><td>100.00%</td></tr></table> <table><tr><th>Year</th><th colspan="2">2022 (Consolidated)</th></tr><tr><th>Product category</th><th>Quantity (SQ-FT)</th><th>Amount</th></tr><tr><td>PCB</td><td>21,499,835</td><td>25,468,406</td></tr></table>	Business items	2022 (Consolidated)		Turnover	Business percentage	Double-sided PCB	63,936	0.20%	Multilayer PCB	32,721,128	99.80%	Total	32,785,064	100.00%	Year	2022 (Consolidated)		Product category	Quantity (SQ-FT)	Amount	PCB	21,499,835	25,468,406		
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Product category	Quantity (SQ-FT)	Amount																									
PCB	21,499,835	25,468,406																									
TC-HW-000.B	Area of manufacturing facilities	<table><tr><th></th><th>Taiwan Plant</th><th>Suzhou Plant</th><th>Changsh 1st Plant</th><th>Changshu 2nd Plant</th></tr><tr><td>Land area (m2)</td><td>35,657</td><td>145,000</td><td>61,800</td><td>60,024</td></tr><tr><td>Production line floor area-A m²</td><td>79,425</td><td>80,239</td><td>42,218</td><td>30,300</td></tr><tr><td>Other floor area-B m²</td><td>13,710</td><td>31,664</td><td>33,338</td><td>18,109</td></tr><tr><td>GFA A+B m²</td><td>93,135</td><td>111,904</td><td>75,556</td><td>48,409</td></tr></table>		Taiwan Plant	Suzhou Plant	Changsh 1st Plant	Changshu 2nd Plant	Land area (m2)	35,657	145,000	61,800	60,024	Production line floor area-A m²	79,425	80,239	42,218	30,300	Other floor area-B m²	13,710	31,664	33,338	18,109	GFA A+B m²	93,135	111,904	75,556	48,409
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TC-HW-000.C	Percentage of production from owned facilities	Production by own facility: 100%																									

Verification Statement/Certificate



INDEPENDENT ASSURANCE OPINION STATEMENT

2022 GCE SUSTAINABILITY REPORT

The British Standards Institution is independent to GOLD CIRCUIT ELECTRONICS LTD. (hereafter referred to as GCE in this statement) and has no financial interest in the operation of GCE other than for the assessment and verification of the sustainability statements contained in this report.

This independent assurance opinion statement has been prepared for the stakeholders of GCE only for the purpose of assuring its statements relating to its sustainability report, more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by GCE. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to GCE only.

Scope

The scope of engagement agreed upon with GCE includes the followings:

1. The assurance scope is consistent with the description of 2022 GCE SUSTAINABILITY REPORT.
2. The evaluation of the nature and extent of the GCE's adherence to AA1000 AccountAbility Principles (2018) in this report as conducted in accordance with type 1 of AA1000AS v3 sustainability assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

This statement was prepared in English and translated into Chinese for reference only.

Opinion Statement

We conclude that the 2022 GCE SUSTAINABILITY REPORT provides a fair view of the GCE sustainability programmes and performances during 2022. The sustainability report subject to assurance is free from material misstatement based upon testing within the limitations of the scope of the assurance, the information and data provided by the GCE and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are fairly represented. The sustainability performance information disclosed in the report demonstrate GCE's efforts recognized by its stakeholders.

Our work was carried out by a team of sustainability report assurers in accordance with the AA1000AS v3. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that GCE's description of their approach to AA1000AS v3 and their self-declaration in accordance with GRI Standards were fairly stated.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- a top level review of issues raised by external parties that could be relevant to GCE's policies to provide a check on the appropriateness of statements made in the report.
- discussion with managers on approach to stakeholder engagement. However, we had no direct contact with external stakeholders.
- 14 interviews with staffs involved in sustainability management, report preparation and provision of report information were carried out.
- review of key organizational developments.
- review of the findings of internal audits.
- review of supporting evidence for claims made in the reports.
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018).

Conclusions

A detailed review against the Inclusivity, Materiality, Responsiveness and Impact of AA1000AP (2018) and GRI Standards is set out below:

Inclusivity

This report has reflected a fact that GCE has sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for the information of Environment, Social and Governance (ESG) in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the GCE's inclusivity issues.

Materiality

GCE publishes material topics that will substantively influence and impact the assessments, decisions, actions and performance of GCE and its stakeholders. The sustainability information disclosed enables its stakeholders to make informed judgements about the GCE's management and performance. In our professional opinion the report covers the GCE's material issues.

Responsiveness

GCE has implemented the practice to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for GCE is developed and provides the opportunity to further enhance GCE's responsiveness to stakeholder concerns. Topics that stakeholder concern about have been responded timely. In our professional opinion the report covers the GCE's responsiveness issues.

Impact

GCE has identified and fairly represented impacts that were measured and disclosed in probably balanced and effective way. GCE has established processes to monitor, measure, evaluate and manage impacts that lead to more effective decision-making and results-based management within the organization. In our professional opinion the report covers the GCE's impact issues.

GRI Sustainability Reporting Standards (GRI Standards)

GCE provided us with their self-declaration of in accordance with GRI Standards 2021 (For each material topic covered in the applicable GRI Sector Standard and relevant GRI Topic Standard, comply with all reporting requirements for disclosures). Based on our review, we confirm that sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported or omitted. In our professional opinion the self-declaration covers the GCE's sustainability topics.

Assurance level

The moderate level assurance provided is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.

Responsibility

The sustainability report is the responsibility of the GCE's chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

Competence and Independence

The assurance team was composed of Lead auditors experienced in relevant sectors, and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO 14001, ISO 45001, ISO 14064 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.

For and on behalf of BSI:



Peter Pu, Managing Director BSI Taiwan



AA1000
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2023-07-18

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