6 Environmental Sustainability

Key Results and Strategies

Strategic Guidelines	Commitment	KPI	2024 Goals and Performance
Climate Change Response Strategies	• TCFD Report Formulation	• TCFD Report Formulation	• Adopting the Task Force on Climate-related Financial Disclosures (TCFD) framework to identify the Company's climate risks and opportunities, and to formulate corresponding response strategies and action plans.
Carbon Management and Net-Zero Commitment	• SBTi Target Setting	• SBTi Target Setting	• SBTi Target Setting Approval • GHG Protocol Greenhouse Gas Inventory Statement
Environmental Management	• Annual Carbon Reduction of 4.2% • Annual Water Reduction of 1% • Annual Energy Reduction of 1% • Annual Green Electricity of 7.7%	• Annual Carbon Reduction of 4.2% (Scope 2) • Annual Water Reduction of 1% • Annual Energy Reduction of 1% • Annual Green Electricity of 7.7%	• Annual Carbon Reduction of 5.59% (Scope 2) • The annual total water consumption was 17,235 cubic meters, which remained the same as last year, indicating stable water management. • Two energy-saving measures with an investment of 4.09 million dollars, resulting in electricity savings of 181,458 kWh from two projects, reducing approximately 89.64 tons of carbon dioxide. • Green electricity transmission of 2,251,000 kWh, accounting for 39% of the headquarters' total electricity consumption.
Environmental Regulations	• Compliance with Regulations • Waste Compliance with Regulations	• Compliance with regulations, no regulatory violations.	• Compliance with regulations, no regulatory violations. • The 2024 environmental protection expense is approximately NT$4.98 million.

6.1 Climate Change Governance Structure

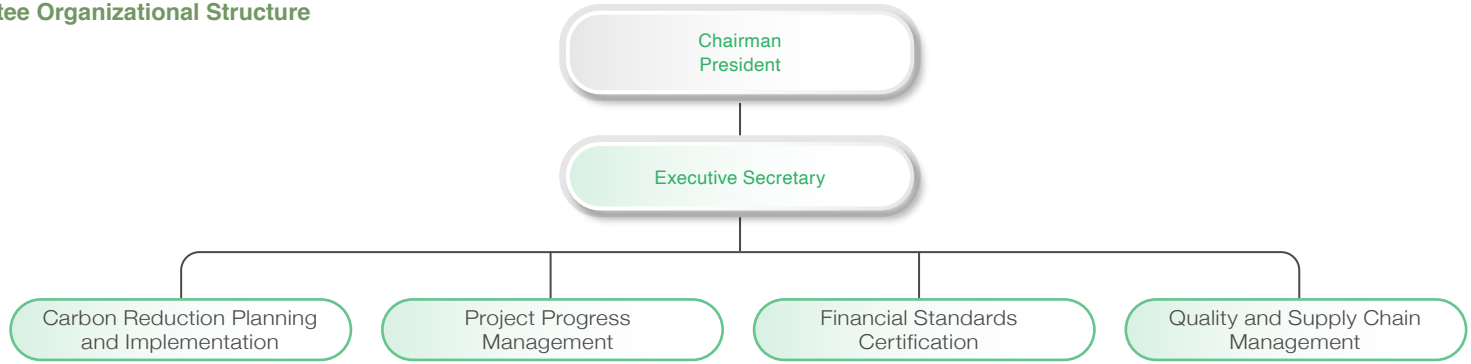
Climate change and environmental risk management responses have been incorporated into the Risk Management Policy. Additionally, an ESG Committee (see Chapter 1.2 of this report) and a Net-Zero Committee, led by the President, also a Board member, have been established to drive corporate sustainability and climate change-related initiatives. An Executive Secretary has been appointed to provide annual updates to the Board of Directors on the progress or outcomes of annual climate change risk improvement.

Net-Zero Committee

Established in 2022, the Net-Zero Committee is chaired by the President and is responsible for coordinating all net-zero-related initiatives. The Committee' s primary responsibilities are as follows:

1. Formulate detailed implementation timelines for each project and regularly track and monitor progress. Key focus areas include:
   - Energy Management: Promote electricity conservation, renewable energy generation, and green energy procurement.
   - Supply Chain Management: Collaborate with key suppliers to reduce carbon emissions across the entire supply chain.
   - Certification and Reporting: Align with international standards, implement carbon reduction initiatives in accordance with the Science Based Targets initiative (SBTi), and publish Task Force on Climate-related Financial Disclosures (TCFD) reports.
2. Coordinate capacity building and strategic alignment, including talent training, setting strategic goals, implementing control mechanisms, conducting internal reviews and external verifications, and managing GHG inventories and report content.
3. Support the Board of Directors in overseeing and managing net-zero goals.

Net-Zero Committee Organizational Structure



In 2024, the GUC Net-Zero Committee convened two meetings, both chaired by the President.

Key resolutions and progress made include:

1. Completed the goal setting for 2050 Net-Zero emissions and corresponding goals.
2. In May, the Company's near-term and long-term carbon reduction targets were validated by the SBTi.
3. In July, the Company issued its TCFD report to further strengthen corporate transparency.

Both near-term and long-term carbon reductions were approved by SBTi on May 10, 2024.

6.1.1 Climate-Related Financial Disclosures

To effectively address climate change risks and uphold corporate social responsibility, GUC adheres to the Task Force on Climate-Related Financial Disclosures (TCFD) framework. The Company actively evaluates the potential impacts of its products and services on society, the environment, and the economy, incorporating climate change-related opportunities and risk scenarios into assessments. These details are elaborated in the 2024 Climate-Related Financial Disclosure Report (available for download on our official website under "Download TCFD Report"). Additionally, GUC's management team has completed climate risk assessment and developed specific plans for net-zero carbon reduction, while regularly reporting the progress and status of carbon reduction plans to the Board of Directors.

6.1.2 Response to Climate Change

The Board of Directors of GUC reviewed the 2023 ESG implementation progress and formulated ESG execution targets for 2024 on January 31, 2024. In addition to advancing its climate goals, the Company actively participates in ESG evaluations and publishes TCFD reports, allowing investors to fully understand GUC's strategies for addressing climate-related risks and opportunities. Regarding carbon reduction targets, GUC engages in the Science Based Targets initiative (SBTi), using 2022 as the baseline year. The Company has set targets to limit the global average temperature increase to no more than 1.5° C. By 2030, GUC aims to reduce Scope 2 greenhouse gas emission by 42% and Scope 3 emissions by 25%. Additionally, the Company aims to cut total greenhouse gas emissions by 90% by 2050. These targets will be regularly reviewed by the Board of Directors to assess progress.

TCFD Four Core Elements

Governance	Risk Management	Strategy	Indicators and Targets
The Risk Management Policy was approved by the Board of Directors in 2010 to serve as the highest guidance for risk management within the Company. Each management unit regularly evaluates and reviews risk items and reports the assessment results to the Operational Risk Management Committee. The President then consolidates major risk items and regularly reports to the Board of Directors. Climate change and environmental risk management response have been incorporated into the Risk Management Policy. An ESG Committee and Net-Zero Committee have been established under the President who also serves as a Board member to help promote corporate sustainability and climate change-related management measures and has appointed an Executive Secretary to regularly report to the Board of Directors on annual ESG goals and the progress or results of improvements in response to climate change risks.	To reduce the impact of climate change, the Net-Zero Committee has facilitated the creation of a cross-departmental TCFD project team, bring together senior executives from various units for interdepartmental communication. Based on climate change issues, company characteristics, supply chain relationships, and with reference to transition risks, physical risks, and opportunities under the TCFD framework to identify significant risks and opportunities. After identifying potentially significant risks and opportunities, the team conducted various scenario analyses and developed response strategies aimed at reducing potential financial losses from these risks. Moreover, these strategies aim to transform potential crises into opportunities, generating greater benefits for the Company. In addition, climate change risk management has been incorporated into the Company's risk management policy framework, and the process adopted for identifying risks and opportunity issues is as follows: Establish TCFD project team → Risk and opportunity identification → Scenario analysis → Strategy formulation → Indicators and targets setting → Issue TCFD report	Through consideration of company characteristics and supply chain relationships by the cross-departmental TCFD project team and external experts, two significant transition risks have been identified: renewable energy regulations and carbon fees, and changes in customer behavior, as well as two significant climate opportunities: the use of low-carbon energy and the use of energy-efficient equipment. The transition risk scenario adopts the SSP5 baseline scenario. The physical risk scenario simulates changes in flooding disasters, extreme high temperatures, and maximum consecutive non-rainfall days under greenhouse gas emissions in RCP8.5. Details on financial assessments of climate risk, opportunity, and strategy can be found in Chapter 3 of the 2024 TCFD Report.	The Company is committed to environmental and ecological sustainability and has voluntarily conducted organizational greenhouse gas inventory and management since 2019. In 2021, we introduced ISO14064-1:2018 external verification. In 2022, we made concrete commitments to achieving carbon neutrality/net-zero emissions by 2050 and began disclosing future carbon footprint. In the second half of 2023, we joined the Science Based Targets initiative (SBTi) and, for the first time, adopted the GHG Protocol framework to conduct a greenhouse gas inventory for the year 2023. 2022 is the baseline year for GUC's greenhouse gas inventory and management. The greenhouse gas inventories for both 2022 and 2023 have been verified. The 2024 group greenhouse gas inventory results can be found in section 6.2.2, Greenhouse Gas Inventory chapter, of this report.

6.2 Moving Towards 2050 Net-Zero Emissions

The Science Based Targets (SBT) is an initiative promoted by global environmental organizations, aimed at helping companies establish carbon reduction targets based on climate science to achieve the goal of limiting global warming to within 1.5° C as outlined in the Paris Agreement. The SBTi was jointly launched by the following four organizations: World Resources Institute (WRI), United Nations Global Compact (UNGC), World Wide Fund for Nature (WWF), and Carbon Disclosure Project (CDP).

In the global trend towards net-zero emissions, the semiconductor industry bears significant environmental responsibilities due to its highly energy-intensive nature. At the same time, semiconductors, as the cornerstone of digital technology and green innovation, are crucial for promoting sustainable development. Through the guidance of the Science-Based Targets initiative (SBTi), semiconductor companies are demonstrating their commitment to reducing carbon footprints with practical initiatives, gradually achieving net-zero emission goals. In this transformation, where challenges and opportunities coexist, the semiconductor industry is not only a practitioner of carbon reduction but also a key driving force in promoting the global green economic transition.

GUC actively responds to the global trend of net-zero emissions by joining the Science-Based Targets initiative (SBTi) to demonstrate its commitment towards climate action, advancing through clear target phases, and working together with supply chain partners to strive for a sustainable future. GUC's Commitment and Action Path for SBTi:

1. 2022: GUC began establishing the SBTi base year, laying the foundation for setting future carbon reduction targets.
2. 2023: Submitted the SBTi target application, clearly stating the Company's long-term commitment to reducing greenhouse gas emissions.
3. 2024: SBTi target approval, officially entering the carbon reduction target implementation phase.
4. 2030: Achieve SBTi near-term targets, including a 42% reduction in Scope 2 (indirect energy emissions) and a 25% reduction in Scope 3 (supply chain-related emissions), laying an important foundation for ultimate net-zero emissions.
5. 2050: Achieve SBTi long-term targets, reducing total emissions from Scope 1 (direct emissions), Scope 2, and Scope 3 by 90%, achieving net-zero emissions.

SBTi Targets for Carbon Reduction Progress

Annual Highlight

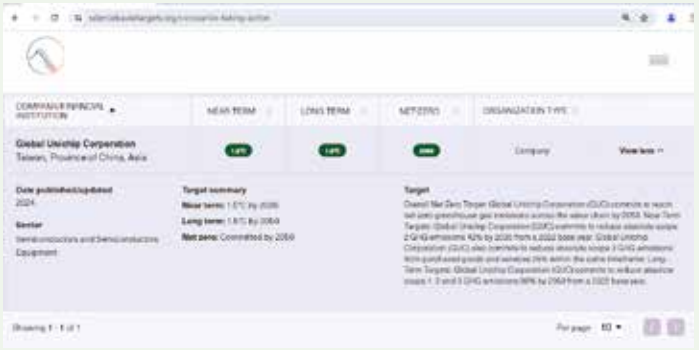
SBTi Target Approval

In May 2024, the Science Based Targets initiative (SBTi) approved GUC' s submitted science-based carbon reduction targets, representing a significant milestone in the Company' s sustainability journey.

SBTi is the world's first carbon reduction framework that establishes net-zero emission standards for businesses, helping companies adopt scientific methods to set both near-term and long-term carbon reduction targets. By providing clear emission reduction pathways, it helps prevent climate change and address the negative impacts under business growth.

In alignment with SBTi's stringent 1.5 ° C scenario, we have established carbon reduction targets for all domestic and overseas locations and our own operations (Scope 1 and Scope 2). With 2022 as the baseline year, we plan to reduce carbon emissions by 42% by 2030 through self-initiated energy conservation, replacement of energy-consuming equipment, expansion of solar power facilities, and increasing the proportion of renewable energy usage. In the future, we will continue to promote energy conservation and carbon reduction in collaboration with our suppliers and disclose the progress of our carbon reduction targets in the annual Sustainability Report. Through concrete actions, we will contribute to global carbon reduction efforts and demonstrate our determination to achieve net-zero carbon emissions in our own operations by 2050.

SBTi Official Website Public Information on June 13, 2024



6.2.1 Greenhouse Gas Inventory

GUC places great importance on environmental and ecological sustainable development. Since 2019, we have voluntarily carried out greenhouse gas inventory and management. Starting in 2021, we adopted the ISO14064-1:2018 standard for our inventory process and have undergone external verification to ensure our inventory process meets the highest standards. In 2022, GUC made a concrete commitment to achieve net-zero by 2050 and to disclose future carbon footprints. 2022 is the baseline year for our greenhouse gas inventory and management. The 2024 greenhouse gas inventory will follow the Greenhouse Gas Protocol (GHG Protocol) to comply with SBTi's Scope 3 classification inventory and verification standards, with verification to be completed in the second quarter of 2025.

GUC's greenhouse gas emissions in 2024 totaled 116,607.041tCO2e. The main source of greenhouse gas emissions in 2024 was Scope 3, accounting for 92.2% of total emissions. The remaining emissions were from energy consumption (Scope 2), as well as fixed sources (diesel for emergency generators), mobile sources (gasoline for company vehicles), and fugitive sources (refrigerants, fire extinguishers) under Scope 1. As GUC operates as an office without any manufacturing production lines, there are no process-related greenhouse gas process emissions.

In 2024, GUC's direct emissions (Scope 1) were 172.5808tCO2e, accounting for 0.15% of total emissions. These were all from energy consumption for employee daily activities (company vehicles, refrigerators, water dispensers and air conditioning). While we are committed to reducing this type of energy consumption and greenhouse gas emissions, suitable alternatives remain limited sue to current technical constraints. We will continue to monitor emerging technologies to pursue greenhouse gas reduction.

Greenhouse Gas Emissions and Emission Intensity for the Past Three Years

(Unit: tCO_2e)

		2022	2023	2024
Scope 1	Category Subtotal	174.8613	933.0934	172.5808
Scope 2	Category Subtotal	8,708.6177	9,417.9627	8,926.3159
Scope 3	Category Subtotal	1,598.0109	195,464.2331	107,508.1447
Total Greenhouse Gas Emissions		10,481.4900	205,815.2892	116,607.041
Annual Revenue (NT$ million)		24,040	26,241	25,044
Greenhouse Gas Emission Intensity (Including Scope 3)		0.000044%	0.000784%	0.000466%

Note 1: The conversion factor source is the Greenhouse Gas Emission Factor Management Table Version 6.0.4 announced by the Ministry of Environment. (Basis for Direct Greenhouse Gas Emission Calculation)
Note 2: The method for compiling greenhouse gas amounts is the operational control approach, which is consistent with the consolidated financial report boundary.
Note 3: The Global Warming Potential (GWP) for various types of greenhouse gases is based on the values from the IPCC's 6th Assessment Report. (The latest version or AR5 as required by the Ministry of Environment) (Basis for converting greenhouse gases to carbon dioxide equivalents)
Note 4: The 2024 electricity carbon emission factor has not yet been announced, so calculations use the 2023 electricity emission factor of 0.494 kg CO_2e/kWh.
Note 5: Carbon emission intensity calculation formula: Total greenhouse gas emissions (tCO_2e) / Revenue.
Note 6: Scope 3 inventory items include:

Verification year	2022	2023	2024
Verification criteria	ISO 14064-1:2018	GHG Protocol	GHG Protocol
Scope 3 Verification Items	B.4.2(b) Downstream transportation	C1 Purchased goods	C1 Purchased goods
	B.4.2(e) Employee Travel and Business Trips	C2 Capital Goods	C2 Capital Goods
	B.4.2(e) Employee Travel and Business Trips	C3 Upstream Fuel and Energy	C3 Upstream Fuel and Energy
	B.5.1 Purchase of Electricity	C4 Upstream Transportation	C4 Upstream Transportation
	B.5.2(a) Purchase of Goods	C5 Waste	C5 Waste
	B.5.4(a) Waste Disposal	C6 Business Travel	C6 Business Travel
		C7 Commute	C7 Commute

Note: After discussion and approval with the authorities SBTi, since GUC does not have its own products, activities in categories C8~C15 may be excluded from Scope 3 greenhouse gas emissions.

2024 Statistical Table of Scope 1 Emissions for the 7 Major Greenhouse Gases

	2023		2024	
	Emission Equivalent (tCO_2e/year)	Gas Type percentage (%)	Emission Equivalent (tCO_2e/year)	Gas Type Percentage (%)
CO_2	7.3665	0.7895	8.8741	5.1420
CH_4	2.732	0.2929	3.4852	2.0195
N_2O	0.2127	0.0228	0.2356	0.1365
HFCs	922.7781	98.8945	159.9825	92.7001
PFCs	0.0000	0.00	0.0000	0.0000
SF_6	0.0035	0.0004	0.0024	0.0000139
NF_3	0.0000	0.00	0.0000	0.0000
Total	933.0934	100.0000	172.5808	100.0000

Note: The Global Warming Potential (GWP) values are cited from the IPCC 2021 Sixth Assessment Report, and the emission factor data source is the Greenhouse Gas Emission Factor Management Table Version 6.0.4 from the Environmental Protection Administration, Executive Yuan.

Award Received for the Second Time

CommonWealth Magazine's Corporate Carbon Reduction Thermometer - 1.5℃ Temperature Control Label Excellence Certification

In June 2024, GUC once again received the Corporate Carbon Reduction Thermometer - 1.5℃ Temperature Control Label Certification from CommonWealth Magazine, being listed as an Excellence in Performance enterprise for two consecutive years, highlighting its efforts to achieve net-zero commitments and environmental sustainability.

This certification is based on the Temperature Rising Index for Pathways, TRIPs platform jointly developed by CommonWealth Magazine and Tunghai University, which evaluates companies' carbon reduction performance and future goals according to the model from the United Nations IPCC's Sixth Assessment Report (AR6). Currently, nearly a thousand companies participate in the platform, with only 20% qualified as "Excellence in Performance" companies that meet the 1.5 ℃ temperature control target.

GUC is committed to achieving net-zero emissions by 2050 and is aligning its strategies with international standards, working alongside the global community to limit the Earth's temperature rise to within the 1.5° C threshold.

6.2.2 Greenhouse Gas Emission Reduction Actions

GUC consistently implements various energy-saving measures to effectively reduce greenhouse gas emissions, integrating them from daily practices to equipment management. In the office environment, we foster an energy-saving culture by encouraging employees to use stairs, turn off lights when not in use, and shut down idle computers, monitors, and other equipment. In addition, we maximize the use of natural lighting, install skylights in some public areas, and display energy-saving slogans in restrooms and near power switches to raise energy conservation awareness.

In terms of equipment management, we use electronic timers and a central monitoring system to precisely control the operating time of water dispensers, air conditioning, and ventilation equipment to avoid energy waste. Additionally, we select high-efficiency, energy-saving appliances and lighting equipment, and regularly maintain air conditioning systems to ensure equipment operates efficiently. Furthermore, we optimize the setup of air conditioning and cooling systems, such as adjusting to appropriate temperatures and adopting control valve technologies, to further reduce energy consumption. These measures fully demonstrate our dedication to energy conservation and emission reduction, as we strive to reduce energy consumption and contribute to environmental sustainability.

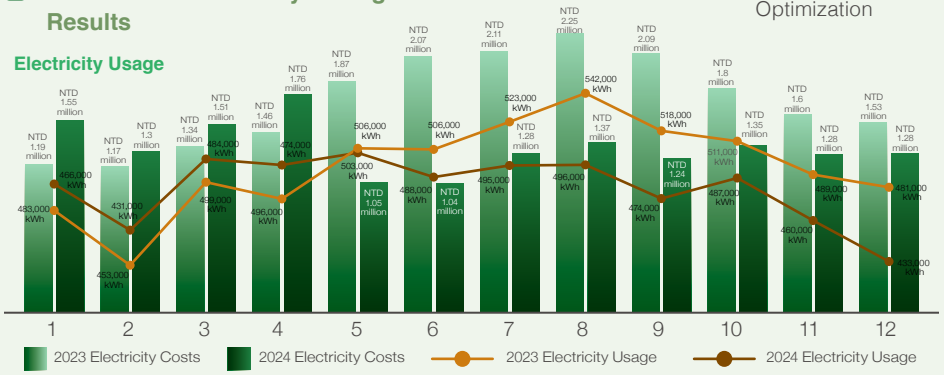
Annual Energy Saving and Carbon Reduction Highlight Programs

One major environmental consideration for 2024 (with an assessment score of 16 or above), totaling 1 item: Electricity conservation of more than 1% at the Hsinchu Headquarters, implementing two engineering improvements, effectively achieving 2% electricity savings and 4% carbon reduction results.

Headquarters VFD on Chillers Installation

Chilled Water Circulation Pump System Energy-Saving Optimization

2024 Annual Electricity Saving and Carbon Reduction Results



Energy Conservation and Carbon Reduction Effectiveness

In 2024, GUC's energy-saving investment projects totaled two items, with a combined investment amount of NT$4.09 million. These projects collectively saved 181,458 kWh of electricity per year, reducing carbon dioxide by approximately 89.64 tonnes. The following are the primary electricity-saving initiatives that have been implemented. In 2025, GUC will continue to advance towards energy conservation, with an estimated total investment exceeding NT$5 million.

Initiatives	Performance	Scope
Variable Frequency Drives (VFD) on Chillers Installation	Annual energy savings of 145,405kWh (equivalent to 523.46GJ); installation completed in December, resulting in 2024 carbon dioxide emission reduction of 5.98tCO/year.	Scope 2
Chilled Water Circulation Pump System Optimization	Annual energy savings of 36,053kWh (equivalent to 129.79GJ); replacement completed in December, resulting in 2024 carbon dioxide emission reduction of 1.48tCO/year.	Scope 2

Note 1: 1kWh=3,600,000Joule.
Note 2: GUC participated in the Industrial Technology Research Institute's High-Efficiency Motor Application Promotion Project, implementing chiller variable frequency drive energy saving and chilled water circulation pump system optimization.
Note 3: This table uses the 2023 electricity carbon emission factor standard, where each kWh of electricity produces 0.494 kg of carbon dioxide equivalent.

6.3 Environmental Management

GUC complies with relevant government environmental regulations by establishing an integrated management system that incorporates environmental management into the organization according to the PDCA management process. This enhances environmental protection and energy efficiency. We formulate, implement, and maintain environmental management systems and action plans, review overall operational processes, conduct greenhouse gas inventories and reduction efforts, water resource inventory management, and implement waste reduction/recycling and other improvement measures, managing greenhouse gas emission reduction from the source.

6.3.1 ISO14001 Environmental Management System

GUC has established an ISO 14001 Implementation Committee, which identifies significant environmental aspects and proposes management plans annually. The committee is chaired by the President, who reviews and approves resolution items. Representatives from each unit serve as committee members responsible for establishing, implementing, and periodically reviewing the environmental management system. They also plan and execute internal audit programs in compliance with ISO 14001:2015 Environmental Management System international standards (including updates to new standards), and promote organization-wide participation and awareness. In 2023, GUC implemented an environmental management system and obtained ISO 14001:2015 certification. This management system supports the Company in reducing environmental impacts, enhancing management control, and minimizing fines related to environmental responsibilities.

ISO 14001 Certificate

6.3.2 Environmental Policy

As a professional SoC design service provider offering design and one-stop foundry services, GUC recognizes that environmental protection, safety, and health issues are fundamental to its operations. GUC continuously improves the quality of its services and products, striving to achieve zero safety incidents and promote sustainable environmental development, with the goal of becoming a world-class benchmark in environmental protection, safety, and health.

To achieve the above environmental protection, safety, and health goals, GUC actively implements and continues to pursue the following environmental policies:

1. Ensure that operations and services comply with or exceed relevant environmental protection, safety, and health regulations and standards
2. Business operations uphold an attitude of environmental improvement, implementing green design and providing green products and services.
3. Construct a safe working environment, prevent occupational injuries and illnesses, and maintain employees' physical and mental well-being.
4. Pay attention to global environmental protection, safety, and health issues, assess their risks, and adopt effective management measures.
5. Enhance all employees' awareness and sense of responsibility for environmental protection, safety, and health, and foster a culture that promotes, safety, healthy, and environmentally friendly workplace.
6. Build a green supply chain and continuously improve the safety and health management system by sharing experiences and collaborative efforts, thereby enhancing overall environmental protection, safety, and health performance.
7. Strengthen communication and participation with all stakeholders, proactively disclose and share relevant information and experiences, and promote a positive cycle for industry and society.

Biodiversity Declaration

Biodiversity and forest conservation, along with the preservation of natural ecosystems, play a vital role i n supporting climate change mitigation and adaptation. They also form a foundation for global agricultural development, food security, public health, and economic development. GUC's global operations are primarily situated in science parks or general office buildings and do not involve activities in important biodiversity locations.

GUC actively responds to initiatives for maintaining biodiversity, such as the United Nations' Convention on Biological Diversity (CBD), through its actions. GUC aims to implement the United Nations Sustainable Development Goals (SDGs): SDG7 "Affordable and Clean Energy," SDG9 "Industry, Innovation and Infrastructure," SDG13 "Climate Action", SDG14 "Life Below Water," SDG15 "Life on Land," SDG17 "Partnerships for the Goals," to achieve the protection of biodiversity, sustainable use of biodiversity, promote biodiversity concepts, enhance public environmental awareness, and promote ecological conservation actions.

GUC's Biodiversity Commitment

1. Ensure that operational activities comply with international, national, and local laws related to biodiversity and zero deforestation.
2. Avoid conducting operational activities near globally or nationally important critical biodiversity areas.
3. Avoid actions that may harm endangered and protected species, actively implement environmental education and ecological restoration.
4. Support and promote natural and biodiversity education, enhance environmental friendliness and ecological protection awareness.
5. Commit to biodiversity conservation, comply with international and local forest-related laws or specific regulations to prevent forest overexploitation.
6. Work with supply chain partners to identify opportunities to reduce biodiversity damage, achieve mutual prosperity between business and environment, avoid and minimize environmental impact, respond to challenges that climate change brings to environmental ecosystems, and jointly protect the natural environment and ecology.

Environmental Related Training

GUC has launched environmental related courses starting from 2024 to enhance employees' environmental awareness, encouraging active participation to gain a deeper understanding of the importance of environmental protection.

Training Categories	Training Courses	Number of Participants	Training Hours	People*Hours	Date
Environmental Protection Training	GHG Greenhouse Gas Inventory (GHGProtocol) Internal Audit	16	3	48	2024/3/27
	2023 Greenhouse Gas Inventory Report Review Meeting	27	3	81	2024/7/5
	2024 GHG Greenhouse Gas Inventory Course (1)	25	3	75	2024/9/18
	2024 GHG Greenhouse Gas Inventory Course (2)	25	3	75	2024/9/24
	Soil and Groundwater Reporting and Remediation Briefing	2	3	6	2024/4/7、12/6
	Briefing on International Standards and Regulatory Requirements for Greenhouse Gases	2	3	6	2024/3/16
	Environmental Permit Integration Briefing	1	3	3	2024/6/4
Total		98	21	294	-

6.4 Energy Management

In response to climate change, reducing energy consumption and greenhouse gas emissions have become critical priority for businesses committed to sustainable operations. GUC's energy consumption primarily comes from facility operations and office equipment, with energy mainly sourced from purchased electricity (supplied by Taiwan Power Company grid; Scope 2), accounting for 100% of total energy consumption. In 2024, the Hsinchu Headquarters used 5,333,900 kWh. To reduce greenhouse gas emissions, the Company has established energy conservation and carbon reduction goals, taking more actions to mitigate climate change. We focus on green innovation in design and promotion of sustainable office practices, continuously raising employees' awareness of environmental consciousness and implementing practical initiatives. In addition to reducing energy consumption by upgrading and optimizing facility equipment and, replacing old equipment, we also promote energy conservation and carbon reduction measures in our facilities and offices. Through education and clear policy guidelines, we encourage employees to actively participate in energy-saving actions, collectively contributing to global environmental protection.

Hsinchu Headquarters Electricity Consumption (Scope 2) and Greenhouse Gas Emissions Statistics for the Past Three Years

	2022	2023	2024
Electricity Usage (kWh)	6,129,100	5,930,900	5,767,000
GJ	22,065	21,351	20,761
tCO_2e	3,120	2,977	2,849

Note 1: The 2024 electricity carbon emission factor has not yet been announced, so calculations use the 2023 electricity carbon emission factor of 0.494 kg CO_2e/kWh.
Note 2: 1kWh = 0.0036 Gigajoules.
Note 3: Electricity carbon emissions = (Electricity usage in kWh * Current year's electricity emission factor) / 1,000.
Note 4: According to GRI Standards, carbon dioxide equivalent (tCO_2e) is used as the unit of measurement.
Note 5: Greenhouse gas inventory follows the operational control approach.

6.4.1 Energy Intensity

GUC's energy intensity in 2024 was 230.74, with a reduction of 163,900 kWh compared to the previous year.

Energy Intensity Statistics for GUC's Hsinchu Headquarters over the Past Three Years

	2022	2023	2024
Annual Revenue (NT$ million)	24,040	26,241	25,044
Annual Electricity Usage (kWh)	6,129,100	5,930,900	5,767,000
Energy Intensity	254.95	226.02	230.74

Note 1: Energy intensity calculation formula: Annual electricity usage / Annual revenue (NT$ million).
Note 2: The energy intensity unit has been revised, and the three-year information has been recompiled.

6.4.2 Renewable Energy

1.Solar Power Generation

As a global citizen, GUC is actively fulfilling its commitment to carbon reduction and the use of sustainable energy. In 2023, GUC integrated a self-generated and self-used solar photovoltaic system into its power supply. In 2024, this system generated a total of 13,486 kWh of electricity. Through the planning and installation of green energy equipment, GUC is contributing to the reduction of global warming and environmental pollution. To further minimize carbon emissions, GUC will continue to evaluate the size, location, legality, and safety of each office space for the installation of self-generated and self-used solar photovoltaic systems, aiming to increase clean energy usage and further reduce carbon emissions, ultimately lowering carbon footprint.

Solar Power Generation in the Past Two Years

	2023	2024
Solar Photovoltaic System Power Generation	13,499 kWh	13,486 kWh

2.Purchase of Green Electricity

GUC start utilizing externally purchased green electricity in December 2023, and in 2024, the Company consumed 2,251,000 kWh of green electricity, accounting for 39% of the total usage. The Company commits to increasing the proportion of externally purchased green electricity each year, with the goal of achieving RE20 by 2030, continuously promoting the application of renewable energy to realize more environmentally friendly energy use.

Externally Purchased Green Electricity Volume in Recent Two Years

	2023	2024
Externally Purchased Green Electricity Volume	1,469 kWh	2,251,000 kWh
Proportion of Total Electricity Usage	0.02%	39%

6.5 Water Resource Management

6.5.1 Assessment of Water Resource Risks

In response to growing challenges surrounding water resources and the demands of sustainable development, GUC demonstrates a strong commitment to strategic and effective water resource management. The Company will continue to optimize water resource management based on a sense of responsibility, and actively explore more water-related innovation and collaboration opportunities to achieve a more efficient and resilient management system, contributing to the sustainable development of the environment and society.

Practices and Achievements in Water Resource Risk Management:

Water Resource Management Plan and Implementation	The Company has established a dedicated ESG Committee at the corporate level, responsible for setting annual water conservation goals and related management plans. The committee regularly reports the implementation and results to the Strategy and Sustainable Development Committee and the Board of Directors, ensuring transparency and effectiveness of the execution. The Company commits to achieving a 1% water conservation goal annually and formulates specific water-saving measures to enhance water resource utilization efficiency.
Water Stress Areas and Wastewater Management	GUC's facilities are not located in high water stress areas. Wastewater treatment primarily focuses on domestic sewage, which is discharged into natural water bodies after being processed by local wastewater treatment plants, ensuring no impact or disruption to the local environment. The Company actively engages with relevant stakeholders to promote sustainable management of local water resources.
Regulatory Compliance and Transparency	GUC sources 100% of its water from Taiwan Water Corporation, relying on groundwater, surface water, rainwater, or other sources. Thus, its operations do not negatively impact the surrounding environment and water quality. The Company's water usage is primarily for air conditioning and employees' daily needs (including drinking, washing, environmental cleaning, and other purposes). In terms of regulatory compliance in water resource management, the company has no violations, demonstrating its high regard for water quality and quantity regulatory requirements, and actively maintains relevant standards.
Risks and R&D Investment	The Company's assessment results show that there are no significant water resource risks in its operations and therefore has not invested in specific research and development (R&D) for water-related risk mitigation. However, the Company continues to explore more effective water resource usage strategies and promotes a water conservation culture internally to reduce potential future risks.
Third-Party Verification and Collaborative Initiatives	Currently, the Company has not conducted third-party verification related to water resource management nor adopted international assurance standards. Nevertheless, we promote water conservation measures across the Company and continuously improve internal water resource management performance. While we have not yet participated in global or local water resource initiatives or collaborating with other companies to develop industrial ecology models, these areas may represent potential directions for enhancing our sustainable water resource management in the future.

6.5.2 Water Intensity

GUC maintains long-term records of water resource consumption, showing our data on local water resource usage, and calculating carbon dioxide equivalents based on these records. All wastewater from GUC headquarters consists of domestic sewage, which is legally discharged through the sewage systems in compliance with the regulatory standards of Hsinchu Science Park. In 2024, the discharge volume was 17.24 million liters (17,235 cubic meters), with no pollution incidents occurring and no significant impact on environmental water sources.

Statistics of Water Withdrawal and Greenhouse Gas Emissions at GUC Hsinchu Headquarters for the Past Three Years

	2022	2023	2024
Water Withdrawal (cubic meters)	16,550	16,585	17,235
tCO_2e	2.582	2.521	2.689
$kgCO_2e$ ／employee	5.04	4.88	5.20

Note 1: Taiwan Water Corporation published the water emission factor for 2023, which states that each cubic meter of water produces 0.156 kilograms of carbon dioxide equivalent.

Note 2: According to GRI Standards, carbon dioxide equivalent (tCO_2e) is used as the unit of measurement.

Water Intensity Statistics of GUC Hsinchu Headquarters for the Past Three Years

	2022	2023	2024
Annual Water Usage (cubic meters)	16,550	16,585	17,235
Number of Employees (Hsinchu Headquarters)	512	517	516
Water Intensity	32.32	32.07	33.40

Note 1: Water intensity = Annual water usage (cubic meters) / Number of employees

Water Conservation Effectiveness and Utilization of Recycled Water

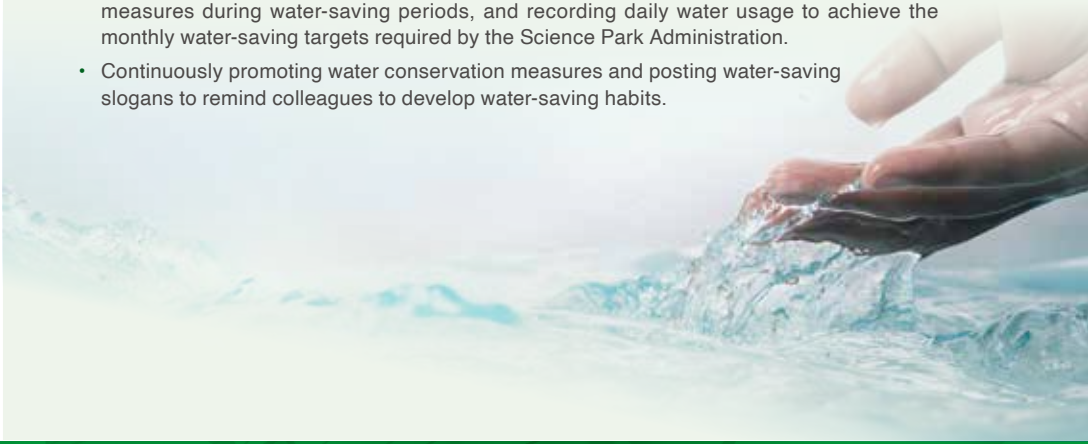
In order to truly save precious water resources on Earth, GUC has established and implemented the following measures to continuously conserve water.

Water Reduction Measures:

- Reducing drainage from air-conditioning cooling towers to lower water consumption by air-conditioning systems.
- Reducing water flow from faucets to lower domestic water consumption.

Continuous Water Conservation Measures:

- Installing rainwater collection systems for irrigating landscape plants and trees.
- Ensuring proper functionality of automatic sensor faucets in restrooms, controlling water flow volume, saving water while maintaining hygiene.
- Maintaining proper functionality of dual-flush water-saving toilets, controlling water sources to prevent leakage.
- Strengthening regular inspection of water equipment, improving facility functionality, and repairing damages promptly.
- Cooperating with Science Park Administration policies, enhancing water conservation measures during water-saving periods, and recording daily water usage to achieve the monthly water-saving targets required by the Science Park Administration.
- Continuously promoting water conservation measures and posting water-saving slogans to remind colleagues to develop water-saving habits.



6.6 Waste Management

GUC strictly follows sustainable environmental business principles, continuously reducing environmental impacts during operations, including: transportation of products, other goods, materials, and employee commuting. In 2024, GUC had no violations of any environmental regulations, and did not receive any formal environmental impact complaints filed by stakeholders. GUC will continue to prioritize the examination of material supply processes and the strengthening of internal material control mechanisms as long-term goals, preventing conflict metals from entering the production process, in order to protect stakeholder interests and be environmentally responsible during production. GUC's electronic material supply and waste control systems all comply with international environmental regulations and customer requirements. We have signed and advocated for the following environmental policies and regulations established by external organizations.

- Declaration of Non-Use of Conflict Minerals
- EU Restriction of Hazardous Substances Directive (EU RoHS Compliance)
- EU Perfluorooctane Sulfonate Restriction Directive (EU PFOS Directive)
- EU New Chemical Policy (Registration, Evaluation, Authorization & Restriction of Chemicals, REACH)
- Administrative Measures for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products (China RoHS Compliance)

6.6.1 Waste Recycling and Reduction Results

GUC recognizes the concepts of green production and responsible manufacturing by adopting a product lifecycle management approach. From the initial product design stage, we examine the environmental impact factors at each stage, from manufacturing to final disposal. We invest in substantial R&D resources and utilize innovative energy-saving technologies. Through the 3R green design concept of Reduce, Reuse, and Recycle, we incorporate environmental considerations into the initial product design. Ensure that our products have minimal environmental impact throughout their entire lifecycle.

We provide services including non-end-use physical products and intangible design/IP intellectual property services, with the physical products sold being non-end-use products. Packaging materials include cardboard boxes, cushioning foam, wafer carriers, and chip trays. In addition, all products are manufactured by outside vendors, and we also require suppliers to fully use qualified recycled packaging materials to further reduce environmental impact.

6.6.2 Waste Treatment Status for the Past Three Years

GUC specializes in customized IC design and sales, and is responsible for chip design and sales, with no involvement in manufacturing, packaging, or testing-related operations. The hazardous waste disclosed in this report does not originate from manufacturing processes but primarily consists of defective IC chip samples provided by vendors for testing. All defective ICs are sent for shredding and disposal according to the scrapping procedure to waste treatment vendors who have obtained Grade A evaluation from the Ministry of Environment and have been certified with international environmental management systems such as ISO14001 and ISO9001.

Hsinchu Headquarters' Waste Treatment Status for the Past Three Years

Year \ Category	Hazardous Industrial Waste (Unit: Tonnes)	General Industrial Waste (Unit: Tonnes)			
	Waste IC	Paper	Iron	Plastics	Waste PC
2022	1.036	1.532	1.008	0	0
2023	0.932	0.94	0	0	0
2024	0.255	0.874	0	0	0
Total	2.223	3.346	1.008	0	0
Disposal Method	Commissioned Removal (Recycled by recycling vendors)				

Note 1: The commissioned removal vendors are all public or private waste disposal institutions that are authorized by the competent authority to remove and process such waste, and there were no violations of legal regulations from 2022 to 2024.
Note 2: GUC's hazardous industrial waste is entirely recycled and processed by removal vendors authorized by competent authority.
Note 3: In 2024, due to the high gold content in the waste, no industrial waste disposal fees were incurred.

Product and Activity Reduction and Recycling

We provide eco-friendly chopstick sets to new employees when they report for duty, reducing the use of disposable bamboo chopsticks and thereby decreasing waste generation; at the same time, we use reusable tableware in the employee cafeteria to reduce waste generation.