

2024

Sustainability Report

Microcosm technology co. ltd



Table of Contents

About This Report	1
1.About Microcosm	6
2.Sustainable Operations	9
3.Corporate Governance	23
4.Environmental Sustainability	55
5.Social Co-prosperity	76
6.Appendix	102

About This Report

This report is the first Sustainability Report issued by Microcosm Technology Co., LTD. (stock code: 3354, hereinafter referred to as “Microcosm Technology”). It discloses the company’s 2024 performance in environmental, social, and governance (ESG) dimensions, the measures implemented, and future improvement plans, with the aim of providing stakeholders with transparent and comprehensive sustainability information, strengthening trust, and demonstrating the company’s determination and continuous efforts in sustainable management.

Reporting Scope

The disclosure scope of this report mainly covers the business performance of Microcosm Technology and does not include overseas subsidiaries. The reporting period covers from January 1st, 2024 to December 31st, 2024 and includes the company's business activities, financial performance, and significant sustainability issues. The financial performance data disclosed in this report primarily references the consolidated financial statements audited and certified by PricewaterhouseCoopers (PwC), and the currency unit used is New Taiwan Dollar (NTD). The financial data is consistent with the company's 2024 Annual Report. For more detailed financial analysis and operational overview, please refer to the 2024 Annual Report.

Preparation Principles

This report is prepared in accordance with the requirements of the "Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies." The content structure follows the Global Reporting Initiative (GRI) 2021 Universal Standards as the core framework. Additionally, the report references industry-specific guidance from the Sustainability Accounting Standards Board (SASB) to disclose key issues relevant to the industry. The report also incorporates the recommendations of the Task Force in Climate-related Financial Disclosures (TCFD), with a particular focus in the disclosure of climate-related risks and opportunities, ensuring transparency and reliability of information to meet stakeholders' expectations.

Publication Status

This report is published annually. The 2024 edition was officially released in August 2024, and the next edition is scheduled for August 2025. Microcosm Technology will continue to enhance its sustainability reporting processes and regularly update relevant performance data to demonstrate its long-term commitment to sustainable development.

Publication Access and Contact Information

This report is primarily distributed online. A digital version is available in the company's official website for stakeholders to view or download, in support of our environmental policy promoting paperless policy. In the event of any corrections or updates to the report content, please refer to the electronic file published on the official website. If you have any comments, suggestions, or inquiries regarding the report, please feel free to contact us using the information provided below:

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Restatement of Information

There were no information restatements in the 2024 Sustainability Report of Microcosm Technology.

External Assurance

This report has not been assured by an independent third-party verification agency.

Message from the Management

In 2024, for Microcosm Technology, it was an important year to deepen sustainable governance and implement ESG actions. Facing the challenges of accelerated transformation in the global industrial chain and net-zero carbon emissions, we uphold the core values of “steady development and innovation-driven,” continuously using technological R&D as a driving force to integrate environmental protection, social responsibility, and corporate governance into daily operations, creating long-term value for stakeholders.

This year, the company established the “Sustainability and Risk Management Committee,” building a sound governance framework and cross-departmental collaboration mechanism to incorporate climate change risk management, carbon emission tracking and control, product innovation, and employee well-being into overall business decision-making.

In terms of product innovation, Microcosm Technology actively develops electronic exchange membranes for advanced semiconductor climate-friendly flow batteries and high-temperature fuel cells, providing better solutions for the energy industry and renewable energy storage. This is not only a technological breakthrough but also our practice of contributing to society with professionalism and assisting in achieving global net-zero goals.

We firmly believe that employees are the foundation of corporate sustainability. The company continuously optimizes the working environment, promotes healthy workplace initiatives, and builds a diverse and inclusive culture, enabling every colleague to perform at their best in a safe, healthy, and growth-oriented environment. At the same time, through the Microcosm Technology Public Welfare Trust, we have long invested in local education and community care, fulfilling our corporate citizenship responsibilities.

In the future, Microcosm Technology will continue to drive corporate value through innovation, take action to respond to global sustainability challenges, and join hands with the industrial chain and all sectors of society to move toward a more solid and sustainable future.

01. About Microcosm

Since its establishment in 1996, Microcosm Technology Co., Ltd. has been committed to providing innovative material solutions for the global high-tech industry. With “steady development and innovation-driven growth” as its core business philosophy, the company focuses on the research, development, production of high-performance flexible printed circuit boards and functional polyimide materials. These products are widely used in the electronics industry, particularly in the fields of semiconductors, displays, and various types of printed circuit board manufacturing. Upholding the commitment of “Innovative Materials, Creating the Future,” we promote technological advancement through excellent products and services, creating value in collaboration with customers.

Company Name	Microcosm Technology Co., Ltd.
Year Established	1996
Industry Category	Electronic Components
Stock Listing Time	2004
Total Capital	NT\$701 million
Headquarters	No. 8, Nanke 9th Rd., Shanhua Dist., Tainan City, Taiwan (R.O.C.)
Number of Employees	66

Core Values

In the wave of global technological evolution, Microcosm Technology is guided by the following core principles to drive its corporate growth:

Innovation Drives the Future of the Industry:

We believe that innovation is the core engine of industrial development. We are committed to continuously optimizing existing technologies and exploring future possibilities to promote the ongoing advancement of the electronics industry.

Professionalism Builds Trust:

With deep expertise in materials science, we focus on delivering highly reliable and high-performance products, fostering long-term and stable partnerships with our clients.

Agility and Customization:

We respond swiftly to the rapidly changing market with flexible strategies and provide tailored solutions to address our customers' unique requirements, achieving win-win outcomes.

Sustainable Development and Global Responsibility:

While pursuing economic growth, we are equally committed to environmental protection and social responsibility. We strive to realize green technology and create a better future for the next generation.

Main Products and Services

Microcosm Technology focuses on the research, development, and application of high-performance materials. Our product offerings span across the electronics, semiconductors, display technology, and new energy sectors. We are committed to providing advanced and industry-driven material solutions. Our materials are widely applied in various areas, including flexible copper-clad laminates (FCCL), protective films, photosensitive polyimide (PSPI), and colorless polyimide (Colorless PI), serving as critical components in printed circuit boards, advanced packaging, flexible displays, and green energy technologies.

In response to rapidly evolving markets, we continue to strengthen our Research and Development capabilities and expand the applications of our material technologies. From enhancing the reliability of semiconductor processes to driving innovation in display technologies, we also actively engage in the new energy sector by developing high-selectivity proton exchange membranes to support green energy development. Guided by technological innovation and market orientation, we focus on material optimization and application expansion to ensure stable operations and drive future growth momentum.

Printed Circuit Board Materials

flexible copper-clad laminates (FCCL), adhesives, and protective films

Semiconductor Application Materials

High-precision photosensitive polyimide for advanced packaging processes

Display Materials

High-transparency polyimide materials for flexible display technologies

Operating Activities and Value Chain

Upstream	PI (Polyimide), PET (Polyester Film), Rolled Copper Foil, Electrolytic Copper Foil, Release Paper, Chemicals
Our Company	Flexible circuit board base materials and protective films, Photosensitive dielectric materials, Transparent polyimide
Downstream	PCB Printed Circuit Board Industry, Semiconductor Industry, Display Industry

02.Sustainable Management

Microcosm Technology upholds the core values of "steady development and innovation-driven growth," striving to find a balance between technological innovation and sustainable development. We believe that through ethical business operations and continuous innovation, we can drive the advancement of the high-tech industry while creating greater economic and social value. At the same time, we integrate environmental protection and social responsibility into our daily operations, adhering to principles of integrity. Through oversight by the Board of Directors and the operation of the Sustainability and Risk Management Committee, we ensure effective corporate governance and risk management, working with stakeholders to realize a sustainable future together.

2.01 Sustainability Development Policy

Microcosm adheres to the philosophy of “integrity in business, continuous innovation, and shared sustainability.” We are committed to leveraging our professional influence and fulfilling corporate social responsibility in the fast-evolving electronic materials industry. We firmly believe that a company's value is reflected not only in its economic achievements but also in its positive impact on environmental protection, social well-being, and corporate governance.

As part of the global value chain, Microcosm Technology aligns with the United Nations Sustainable Development Goals (SDGs), and references the "Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies" as well as the Responsible Business Alliance (RBA) Code of Conduct. We have established a systematic sustainability management framework and fully integrated ESG principles into corporate governance, business decision-making, and daily operations. Our sustainability policy is founded on four core commitments:

1. Strengthen Corporate Governance and Risk Management to Build a Culture of Sustainable Operations

- Continuously optimize corporate governance structure and enhance the governance effectiveness and decision-making transparency of the Board of Directors and senior management.
- Establish the Sustainability and Risk Management Committee to integrate cross-departmental resources to promote the execution of sustainability strategies and risk control.
- Build a compliance and integrity framework, strengthen internal controls and anti-corruption mechanisms, and deepen ethical governance culture.
- Engage actively with stakeholders to enhance transparency and timeliness of information disclosure, fostering trust and recognition.

2. Address Climate Change with Action and Promote Environmental Sustainability and Green Innovation

- Set medium- and long-term carbon reduction targets to gradually achieve net-zero emissions by 2050 and conduct climate risk and opportunity assessments.
- Improve energy efficiency in manufacturing processes, adopt renewable energy, and reduce waste and hazardous emissions to drive green manufacturing transformation.
- Continue to develop environmentally friendly materials and products, and promote circular economy principles in R&D and the supply chain.

3. Value Employee Rights and Social Responsibility to Build an Inclusive and Sustainable Workplace and Community

- Uphold international human rights conventions and local laws to ensure labor dignity and equal job opportunities.
- Foster a diverse and inclusive workplace culture to promote gender equality and career development opportunities.
- Provide a safe and healthy working environment and listen to employees' voices through communication mechanisms.
- Actively participate in social welfare, education outreach, and local community engagement to strengthen connections and trust with communities.

4. Promote Responsible Supply Chains and Create Sustainable Value Together

- Require suppliers to comply with environmental protection, human rights and ethical standards, and implement supplier evaluation and coaching mechanisms.
- Build long-term partnerships with upstream and downstream partners to jointly enhance sustainable resilience.

Looking ahead, Microcosm Technology will continue to drive growth through materials innovation and anchor its operations on a foundation of sustainability. By deepening governance and operational strategies, we aim to enhance corporate resilience and implement sustainability policies effectively. We will take a systematic approach to promote eco-friendly processes, responsible supply chain management, employee well-being, and community inclusion, actively responding to global sustainability trends and stakeholder expectations.

At the same time, we will strengthen our ability to respond to climate risks and cross-departmental collaboration to seize opportunities for industrial transformation. With a long-term perspective and concrete actions, Microcosm will integrate corporate value with social responsibility and work alongside industry partners to create a sustainable future.

2.02 Promote Sustainable Development Mechanism

Governance Structure for Promoting Sustainability

In its pursuit of sustainable development, Microcosm Technology has continuously refined its organizational structure and governance mechanisms to ensure the achievement of its sustainability goals. In the early stages, corporate social responsibility (CSR) tasks were handled part-time by the Administration Department. However, in response to evolving international sustainability trends and regulatory requirements, the company established a Corporate Social Responsibility Task Force in 2020. This cross-departmental group, composed of personnel from various units, was responsible for implementing CSR-related activities. In the same year, our company formulated and approved the “Corporate Social Responsibility Best Practice Principles” to serve as the foundational guideline for related tasks, addressing the expectations of shareholders and customers regarding corporate responsibility.

2020: Established the “Corporate Social Responsibility Task Force.” Formulated and approved the “Corporate Social Responsibility Best Practice Principles”.

2021: In response to international sustainability trends and corporate strategic needs, the “Corporate Social Responsibility Best Practice Principles” was officially renamed as the “Sustainability Development Best Practice Principles”.

2024: Formally established the “Sustainability and Risk Management Committee” under the Board of Directors, and enacted the “Organizational Regulations of the Sustainability Development and Risk Management Committee”.

In 2024, to strengthen sustainability governance and implement sustainability development goals, Microcosm, in accordance with the “Sustainability Best Practice Principles for TWSE/TPEX Listed Companies,” the “Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies,” and the “Risk Management Best Practice Principles for TWSE/TPEX Listed Companies,” formally established the “Sustainability and Risk Management Committee” under the Board of Directors. At the same time, the Organizational Regulations of the Sustainability Development and Risk Management Committee were enacted, clearly defining the number of members, terms of office, and responsibilities.

The committee is chaired by the Chairman of the Board and is composed of directors and governance executives. It is responsible for coordinating the company's sustainability direction and objectives, as well as supervising the execution and effectiveness of sustainability policies. Starting from March 2024, the committee reports sustainability progress to the Board on a quarterly basis.

Main Responsibilities of the Sustainability and Risk Management Committee:

- Formulate, promote, and strengthen the company's sustainability policies, annual plans, and strategies.
- Review, monitor, and revise the implementation status and effectiveness of sustainability development.
- Supervise sustainability information disclosure and review the sustainability report.
- Oversee matters related to the company's Sustainability Development Best Practice Principles and other sustainability tasks as resolved by the Board of Directors.

The committee has five functional working groups, including Corporate Governance, Environmental Sustainability, Employee and Social Care, Sustainability Information Disclosure, and Risk Management. Each group is led by the head of the relevant department, responsible for promoting specific initiatives, implementing action plans, and reporting progress. Each group regularly submits written progress reports to the committee. The main responsibilities of each group are as follows:

1. Corporate Governance Group

Responsible for compliance with corporate governance laws and stakeholder communication mechanisms, ensuring proper execution of corporate governance. At the same time, it establishes a sound board operation mechanism, arranges reasonable board meeting agendas, strengthens the board's supervisory function over business strategies, and continuously improves board self-discipline and effectiveness.

2. Environmental Sustainability Group

Formulates and implements environmental management systems to ensure compliance with environmental regulations and international standards, while promoting resource recycling and reuse to improve environmental performance.

3. Employee and Social Care Group

Safeguards employee rights, promotes welfare and career development, ensures employee safety and health, and enhances community engagement and social participation.

4. Sustainability Information Disclosure Group

Prepares sustainability reports based on international standards and stakeholder requirements, improves corporate transparency, and fully discloses information related to the company's sustainability development, thereby enhancing the transparency of sustainability information.

5. Risk Management Group

Responsible for establishing the company's risk management framework, assessing potential operational risks (according to operations and business characteristics), implementing comprehensive risk control, and establishing and enforcing related systems to reduce potential operational risks. It also conducts internal audits and strengthens internal control systems.

Each functional team collaborates across departments to carry out related tasks, regularly consolidates and reviews project outcomes, and reports to the Sustainability and Risk Management Committee to ensure the effective implementation of the company's sustainability strategies and the achievement of its goals.

Looking ahead, Microcosm Technology will continue to enhance its governance framework, deepen collaboration with stakeholders, and promote innovative technologies and risk management, thereby advancing comprehensive sustainable development across the economy, environment, and society.

2.03 Stakeholder Engagement and Major Topics

Stakeholder Engagement

Microcosm Technology is committed to establishing open, transparent, and ongoing communication channels with its stakeholders to ensure that the company's operations address their needs and expectations. We reference the five principles of the AA1000 Stakeholder Engagement Standards (SES) developed by the global non-profit organization Account Ability—responsibility, influence, interest, diverse perspectives, and the dependent interaction—to guide our engagement practices. In accordance with GRI Standards, we collaborate with internal department heads and external experts to assess key issues of ESG (Environmental, Social, and Governance) topics. This includes evaluating the potential positive impacts and risks these issues may pose to stakeholders, benchmarking against industry peers, analyzing the relevance of each stakeholder group to Microcosm Technology, and finally determine the scope of major stakeholders.

In 2024, through discussions and identification conducted during the Sustainability Development Meeting, Microcosm Technology confirmed six key stakeholder groups: shareholders and other investors, customers, suppliers/contractors, employees, government agencies, and society (including local communities, schools, and social welfare organizations). The company engages with these stakeholders through diverse communication channels to understand their concerns and incorporate them into the formulation of sustainability strategies and action plans.

To ensure the effectiveness of this engagement, Microcosm Technology regularly reports stakeholder communication outcomes to the Board of Directors. In 2024, the report was presented at the March board meeting, and the process of transparency and institutionalization of stakeholder participation is continuously promoted.

2024 Microcosm Technology Sustainability Report

Table of Stakeholder Communication Channels and Effectiveness in 2024

Stakeholder	Shareholders /Investors
Significance to Microcosm	Shareholders and investors provide long-term support to the company. Microcosm ensures the protection of shareholder rights through sound corporate governance, transparent information disclosure, and prudent operational strategies. The company also enhances its corporate value through innovation, R&D, and market expansion to meet investor expectations for sustainable operations.
Topics of Concern	<ul style="list-style-type: none"> ● Business Operations and Profitability ● Innovation Management ● Corporate Governance ● Sustainable Development Strategy
Communication Frequency and Channel	<ul style="list-style-type: none"> ● Corporate Governance Evaluation (Annually) ● Annual Financial Reports (Annually)/ Issuance of Financial Reports (Published as required) ● Shareholders' Meeting (Annually) ● Public Information Announcements via Market Observation Post System (Irregular) ● Instant Information on Microcosm Official Website ● Investor Relations Contact Email (Irregular)
2024 Communication Results	<ul style="list-style-type: none"> ● 1 Corporate Governance Evaluation per year ● 4 Financial Reports per year, 1 Annual Report per year ● 1 Annual General Shareholder Meeting per year, with continuous audio and video recording made public afterward ● 17 important news announcements in Chinese and 17 in English ● Invited to attend an investor conference on October 16 ● Financial and business-related information is released irregularly via announcements or press releases; files are also uploaded quarterly to the official company website ● Continually share updates on the company's ESG developments and future goals with investors, while relaying their feedback and expectations to management to foster effective two-way communication

2024 Microcosm Technology Sustainability Report

Stakeholder	Employee
Significance to Microcosm	Employees are the key driving force behind corporate growth and innovation. Microcosm Technology is committed to providing a safe, healthy, and inclusive work environment, while placing great emphasis on talent development and career advancement. Through training programs, benefits systems, and employee care initiatives, the company aims to enhance employee satisfaction and loyalty, fostering a competitive corporate culture.
Topics of Concern	<ul style="list-style-type: none">●Professional Ethics and Legal Compliance●Human Rights●Labor Relations●Talent Development
Communication Frequency and Channel	<ul style="list-style-type: none">●General Manager’s Mailbox for Direct Messages and Grievance Interaction (Instant)●Labor Meetings / Employee Welfare Committee(Occasional)●Physical check-up(Annually)●Training and Development(Occasional)●performance evaluation (Every six months)
2024 Communication Results	<ul style="list-style-type: none">●Employee Physical check-up were provided on March 12.●Welfare Committee members were re-elected for a one-year term.●Fire safety training/drills are conducted for the entire factor every six months.●Various departmental professional training sessions were held irregularly (a total of 1,666 training hours were completed for compliance education this year, with an average of 5.4 training hours per employee).

2024 Microcosm Technology Sustainability Report

Stakeholder	Customer
Significance to Microcosm	Customers are the core driving force behind Microcosm Technology's business development. The company is committed to delivering high-quality and innovative material solutions to meet customer needs and enhance market competitiveness. Through close communication and technical collaboration, Microcosm accurately captures market trends, continuously optimizes our products and services, and ensures customer satisfaction as well as the maintenance of long-term partnerships.
Topics of Concern	<ul style="list-style-type: none">●Customer Service●Product Quality●Hazardous Substance Management
Communication Frequency and Channel	<ul style="list-style-type: none">●Customer Satisfaction Survey (Annually)●Customer Audits (Annually)●Meetings, Phone Calls, Emails (Instant)●Communication via Phone or Email (Instant)●Sales Representatives' Client Visits (Quarterly)●Participation in Major International Industry Exhibitions (Annually)
2024 Communication Results	<ul style="list-style-type: none">●In 2024, instant feedback collection and complaint handling were conducted regarding customer service quality.●We pursued diversified product development and participated in major exhibitions — 2024 TPCA TAIPEI, 2024 Semicon Taiwan, CPCA Shanghai, and HKPCA Shenzhen — to promote product offerings, engage with industry peers, and explore the latest trends and innovations.●In 2024, customer audits (including online reviews) and hazardous substance-related investigations were managed without receiving any negative feedback.●The 2024 external audits for IECQ QC080000 and ISO 9001:2015 were completed with no major or minor nonconformities.

2024 Microcosm Technology Sustainability Report

Stakeholder	Suppliers/Contractors
Significance to Microcosm	Suppliers and contractors are key partners in ensuring a stable supply chain and enhancing product quality for Microcosm Technology. Our company emphasizes building fair and transparent partnerships with its supply chain stakeholders, jointly promoting green procurement, environmental sustainability, and social responsibility. This approach helps ensure supply chain stability and resilience while reducing operational risks.
Topics of Concern	<ul style="list-style-type: none">● Business Ethics and Legal Compliance● Sustainable Supply Chain Management● Environmental Management
Communication Frequency and Channel	<ul style="list-style-type: none">● Annual Supplier Audits (once a year)● Meetings and Discussions (instant)● Communication via Phone or Email (instant)● Whistleblower Hotline and Email for Violations of Business Ethics (instant)
2024 Communication Results	<ul style="list-style-type: none">● In 2024, a total of 11 Category A qualified suppliers underwent on-site (paper-based) audits.

2024 Microcosm Technology Sustainability Report

Stakeholder Government

Significance to Microcosm Government policies and regulations have a significant impact on business operations. Microcosm Technology actively complies with all relevant laws and regulations to ensure lawful operations. Through participation in industrial policy initiatives, government subsidy programs, and public affairs collaboration, the company promotes industry development and enhances our competitive advantage.

Topics of Concern

- Regulatory Compliance
- Occupational Health and Safety Management
- Environmental Management

Communication Frequency and Channel

- Official document exchanges and phone communications (instant)
- Participation in R&D meetings, advocacy events, and briefings (irregular)
- Disclosure of information on the company website (instant)
- Uploading information to the Market Observation Post System (MOPS) (instant)
- Filing, review, and on-site audits (annually)

2024 Communication Results

- Timely handling of official documents, emails, and questionnaires from the Taipei Exchange (TPEX)
- Prompt execution of regulatory-related operations
- Timely responses to administrative correspondences from various government agencies
- Participated in TPEX's Corporate Governance Evaluation System briefing on 2024/2/29 Attended TPEX's 2024 guidance session on reporting obligations for Emerging Stock companies on 2024/10/28
- Underwent on-site audits

2024 Microcosm Technology Sustainability Report

Stakeholder	Society (Including Local Communities, Schools, and Social Welfare Organizations)
Significance to Microcosm	Corporate development is closely related to society. Microcosm Technology actively engages in community service and social responsibility initiatives, focusing on environmental protection, education, and social care. Through long-term investment in charitable programs and sustainable development actions, the company aims to foster community prosperity, strengthen the connection between business and society, and collaboratively build a better future.
Topics of Concern	<ul style="list-style-type: none">● Environmental Management● Social Welfare● Talent cultivation and development
Communication Frequency and Channel	<ul style="list-style-type: none">● Public welfare activities (irregular)● Industry-academia collaboration programs and meetings at various stages (irregular)● Internship programs (irregular)
2024 Communication Results	<ul style="list-style-type: none">● Donated to local schools in Tainan, benefiting a total of 344 students● Planted 100 trees in Zuozhen District, Tainan● Carried out industry-academia collaboration with local schools

Major Themes Identification

Microcosm Technology has adopted the latest GRI 2021 Standards to identify major themes and assess impacts across environmental, economic, and social issues. This process incorporates both actual and potential impacts to develop appropriate management strategies. A systematic four-step approach was used to complete the major theme identification process:

First: Understanding the Organizational Context

(1) Stakeholder Identification

Based on the AA1000 SES Stakeholder Engagement Standard and GRI Guidelines, Microcosm Technology identified its key stakeholders in 2024, including six categories: customers, suppliers/contractors, shareholders and investors, employees, government authorities, neighboring communities and society (including local communities, schools and social welfare organizations).

(2) Sources for Major Theme List

In determining its list of major themes, we referred to global ESG trends and several international frameworks, including: GRI Sustainability Reporting Standards, SASB Standards, TCFD (Task Force on Climate-related Financial Disclosures), United Nations Sustainable Development Goals (SDGs), Requirements of international ESG rating agencies, and Taiwan Financial Supervisory Commission's corporate governance evaluation of listed companies. This resulted in a selection of 20 topics covering the three major sustainability dimensions: environment, society, and economy.

(3) Stakeholder Concern Survey

A questionnaire survey was conducted for the six key stakeholder groups. By analyzing the results, the company gained insights into stakeholder and internal concern levels for each topic. The findings were then quantified to support subsequent impact assessment.

Second: Identification of Actual and Potential Impacts

In managing the impacts of Major themes, the Board of Directors serves as the highest governance body, responsible for oversight and decision-making. Under the leadership of the Chairperson of the Sustainability and Risk Management Committee, Microcosm Technology convenes sustainability meetings to conduct a comprehensive assessment of 20 sustainability topics. We integrate the results of stakeholder surveys with internal discussions to focus on analyzing both the actual and potential impacts of each topic on the company's operations, including positive outcomes and negative risks.

During the assessment process, we consider the involvement across various stages of the value chain—such as the supply chain, internal operations, and product usage. We also refer to historical data and future projections to evaluate the likelihood and degree of impact for each theme. Impacts are categorized into three major dimensions: environmental, social, and economic. Each issue is then assigned a weighted score (0–5) based on its positive and negative impacts, serving as the basis for prioritizing and ranking the issues.

Based on the aforementioned review and identification process of the sustainability issue list, Wei Sheng Technology further evaluates each issue by considering the two axes of "current/potential" and "positive/negative," along with its impact on operations, the environment, and society. To ensure that the assessment results are actionable, the sustainability issues are converted into weighted scores and rankings, which serve as the basis for confirming key material topics, setting management strategies and KPIs, and establishing improvement and escalation mechanisms.

Third: Assessing Impact Materiality

Building on the initial impact analysis, we further assess the materiality of each issue to identify the core topics that have the greatest influence on the company value chain and stakeholders. Through in-depth discussions involving internal management and external ESG experts, we have finalized six key sustainability issues covering the economic, environmental, and social dimensions.

To ensure the international relevance of these issues, we align the selected key topics with the United Nations Sustainable Development Goals (SDGs), clearly demonstrating their connection to global sustainability trends and enhancing their management value.

These issues are recognized as the core concerns with the most significant impact on the company's value chain and stakeholders. At the same time, Microcosm Technology references global sustainability frameworks by mapping each key issue to the United Nations Sustainable Development Goals (SDGs), ensuring that the topics align with international trends and hold management value.

Forth: Identification of Major Themes

Through comprehensive discussions with internal and external experts—combined with survey results, impact materiality assessments, and alignment with the SDGs—Microcosm Technology has identified six key topics to be prioritized in this report. These topics are closely aligned with the company's sustainability strategy and serve as the foundation for future sustainability management and disclosure.

Based on the confirmed major themes, we have established specific management goals and indicators, which are transparently disclosed in this sustainability report to provide valuable reference for stakeholders. At the same time, the company will continue to refine its management mechanisms and regularly review implementation outcomes, laying a solid foundation for achieving its sustainability goals.

2024 Microcosm Technology Sustainability Report

List of Major Themes

Topic	Corresponding SDGs Goals	Corresponding to Multiple GRI Specific Topics	Significance to Microcosm Technology	Response Channel	Value Chain Impact Assessment		
					Upstream	Company Operations	Downstream
Product Quality and Safety	SDG 3 (Good Health and Well-Being) SDG 12 (Responsible Consumption and Production)	Customize Major Themes	Enhance customer trust, reduce legal risks, and strengthen brand reputation	Customer management and service	○	●	○
Customer Relationship Management	SDG 12 (Responsible Consumption and Production)	Customize Major Themes	Improve customer satisfaction, drive revenue growth, and support market competitiveness	Customer management and service	○	●	○

2024 Microcosm Technology Sustainability Report

Risk Management	SDG 12 (Responsible Consumption and Production) SDG 13 (Climate Action)	GRI 201-2 (Financial Implications of Climate Change) and other risk-related topics	Reduce financial and operational risks, improve risk control, and increase investment attractiveness	Internal Risk Control, TCFD on Climate Change	○ ● ○
Corporate Governance	SDG 12 (Responsible Consumption and Production) SDG 13 (Climate Action)	GRI 2 (General Disclosures) GRI 205 (Anti-corruption)	Enhance transparency and accountability, safeguard stakeholder interests	Integrity management	○ ● ○
Climate Change and Greenhouse Gas Management	SDG 7 (Affordable and Clean Energy) SDG 12 (Responsible Consumption and Production) SDG 13 (Climate Action)	GRI 305 (Emissions)	Reduce carbon emissions, comply with GHG regulations, and strengthen environmental management reputation	Greenhouse gas emissions management	○ ● ○

Green Products	SDG 9 (Industry, Innovation and Infrastructure) SDG 12 (Responsible Consumption and Production) SDG 13 (Climate Action)	GRI 302 (Energy) GRI 305 (GHG Emissions)	Promote sustainable innovation, improve market competitiveness of sustainable products, and strengthen innovation and brand reputation	Sustainable product innovation	○ ● ○
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Management of Major Themes

Communication of Key Events

Microcosm Technology has established an internal mechanism for reporting and communicating key incidents, which serves as an essential part of the company risk management and stakeholder engagement. Events that may have a significant impact on operations, reputation, finances, or stakeholders—such as information security breaches, major environmental, health, and safety (EHS) incidents, financial irregularities, legal violations, or workplace misconduct—are reported to senior management based on their risk level and, if necessary, submitted to the Board of Directors.

In addition, the company reports quarterly to the Board on the handling of major events, progress in greenhouse gas inventory, preparation of the sustainability report, and other significant sustainability topics, in order to strengthen the oversight function of governance.

As of the end of 2024, Microcosm Technology has documented major issues, information security incidents, significant workplace disputes, and other unexpected events. Going forward, the company will continue to optimize mechanisms for addressing key issues and regularly review crisis management as well as internal and external communication processes to enhance organizational responsiveness and stakeholder trust.

03. Corporate Governance

3.01 Governance Structure

The company's highest decision-making and governance body is the Board of Directors, which bears the important responsibilities of formulating the company's sustainability strategies, overseeing management, and safeguarding shareholders' rights. Through institutionalized operations, the Board ensures that all decisions comply with laws, the company's articles of association, and shareholders' resolutions, while carrying out its duties with transparency, fairness, and accountability. As a key foundation for the company's sustainable operations, the Board focuses on maintaining a sound corporate governance system and ensuring the continuous development of internal controls and regulatory compliance.

2024 Microcosm Technology Sustainability Report

Major Issues

Corporate Governance

Policy / Commitment

Adhering to the principles of integrity, transparency, and internationalized governance, we are committed to strengthening the functionality and decision-making efficiency of the Board of Directors to ensure the company's long-term, stable operations. The company pledges to implement cold-chain logistics, maintain information transparency, and enhance communication with stakeholders, continuously improving corporate governance performance.

Core Objective

Maintain a leading position in corporate governance evaluations, with more than 40% of companies having a market capitalization exceeding NT\$5 billion.

2024 Performance Results

- 2024 Corporate Governance Evaluation: Companies with a market capitalization exceeding NT\$5 billion accounted for 21%–40%.
- Complete the Board performance evaluation and disclose part of the results

2024 Microcosm Technology Sustainability Report

Action Plans	<ul style="list-style-type: none">● Strengthen the Board performance evaluation system and enhance information transparency.● Arrange annual participation of directors and senior executives in corporate governance and sustainability-related training programs.● Continue implementing internal control systems and anti-corruption policies to promote a culture of integrity in business operations.● Strengthen investor relations and stakeholder communication to ensure information is timely and transparent.● Regularly review regulatory compliance and continuously update the company's internal rules and regulations.
Evaluation Mechanism	<ul style="list-style-type: none">● Board Performance Evaluation● Internal and External Audit
Feedback Mechanism	<ul style="list-style-type: none">● Shareholders' Meeting● Stakeholder communication channels (official website section, customer service, annual meetings)
2025 Targets	<ul style="list-style-type: none">● Continuously maintain a position within the top 40⁰% in corporate governance evaluations.● Enhance the completeness of information disclosure: Disclose corporate governance structure, Board performance, sustainability strategy progress, and ESG indicator data in the annual report and on the dedicated section of the company's official website, prepared in accordance with international standards (GRI, SASB, TCFD).● Improve readability and comparability: Provide information in both Chinese and English versions.

Microcosm Technology Company Organization Chart

Board Operations

The selection of Board members is based on the “Rules for Election of Directors” and the “Articles of Incorporation,” adopting a candidate nomination system. Directors are elected by shareholders through voting with a term of three years. The current Board consists of seven members, including three directors and four independent directors, with independent directors accounting for 57.14%. All independent directors comply with the relevant regulations stipulated in the “Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies,” and the number of independent director positions held in other public companies does not exceed three. The Board convenes at least once per quarter and held five meetings in 2024, with a total of 35 expected attendances and 30 actual attendances, resulting in an attendance rate of 98%.

Board Diversity

The Board is composed with a commitment to diversity, considering basic qualifications and professional expertise aligned with operational needs. Board members are required to possess professional backgrounds in law, accounting, industry knowledge, finance, and technology, along with core competencies in management, international market perspective, leadership, and decision-making. The current Board members have extensive industry knowledge and management experience, including two female directors. The company's diversity management goals and implementation status for 2024 are as follows:

2024 Microcosm Technology Sustainability Report

Category	Management Goal	2024 Status
Seat Composition	Total of 7 seats, including 3 directors and 4 independent directors	✓
Gender	At least 2 seats held by female directors	✓
Tenure	More than half of the independent directors serve no more than three terms	✓
Concurrent Positions	Directors concurrently serving as managers $\leq 1/2$; Independent directors holding positions in ≤ 3 companies; Independent directors not serving as directors (including independent directors) or supervisors in more than 5 TWSE/TPEX-listed companies	✓
Professional Diversity	Includes business judgment, accounting and financial analysis, management capabilities, crisis management, industry knowledge, international perspective, leadership, and decision-making	✓

Board Composition

Evaluation Type	Method	Criteria	Result
Overall Board Performance	Conducted by the Board Secretariat based on actual operations	<ul style="list-style-type: none"> A. Level of participation in company operations B. Enhancing the quality of board decision-making C. Board composition and structure D. Director selection and ongoing training E. Internal control 	Overall average score: 97 points. This indicates that the board effectively guides the company's stable development and ensures corporate governance aligns with best practices.
Individual Director Performance	Self-assessment by each director	<ul style="list-style-type: none"> A. Understanding of company goals and mission B. Awareness of director responsibilities C. Level of participation in company operations D. Management of internal relationships and communication E. Professionalism and ongoing training of di 	Overall average score: 98 points. This shows that individual directors perform their duties professionally, fully exercising supervision and guidance to ensure company operations meet shareholder and stakeholder expectations.

2024 Microcosm Technology Sustainability Report

Name / Representative	Gender	Independent Director Tenure	Also an Employee of the Company	Unaffiliated	5 – 6	Management / Business Judgment	Accounting / Financial Analysis	Crisis Handling / Leadership	Industry Knowledge / International Market Insight	Decision-Making Ability
Huang, Tang-Chieh	Male			✓		✓	✓	✓	✓	✓
Tong Ying Investment Co., Ltd. Representative: Chuang, Chao-Chin	Male	✓		✓		✓	✓	✓	✓	✓
Tong Ying Investment Co., Ltd. Representative: Lee, Mei-Jung	Female	✓		✓		✓		✓	✓	✓

2024 Microcosm Technology Sustainability Report

Wu, Kuo- Shih	Male	Over 3 years	✓	✓	✓	✓	✓
Tsai, Ming- Tang	Male	Over 9 years	✓	✓	✓	✓	✓
Lin, Tsai- Chih	Male	3-9 years	✓	✓		✓	✓
Chen, Chiu- Yueh	Fema le	3-9 years	✓	✓	✓	✓	✓

Board Performance Evaluation

To enhance corporate governance and improve Board effectiveness, the company conducts annual Board performance evaluations based on the “Board Performance Evaluation Procedures.” Performance targets are set to ensure transparency and efficiency. The 2024 evaluation results (out of 100) are as follows:

Functional Committee Performance	Self-assessment by committee members	A. Level of participation in company operations B. Awareness of functional committee responsibilities C. Enhancing the quality of functional committee decision-making D. Functional committee composition and member selection E. Internal control	Overall average score: 99 points. This indicates that each functional committee effectively executes responsibilities such as review, supervision, and risk management, providing strong support for corporate governance.
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Ongoing Professional Development

To enhance governance effectiveness and ensure directors are equipped with up-to-date knowledge on regulations, risk management, and sustainability, the company regularly arranges training on governance practices, regulatory compliance, financial risks, ESG topics, and industry trends.

All directors completed the legally required training (6 hours), totaling 42 hours in 2024, averaging 6 hours per director.

2024 Microcosm Technology Sustainability Report

Title	Name	Date	Course	Hours
Independent Director	Lin, Tsai-Chih	2024/05/22	2024 SAP NOW Taiwan: Business AI	3
		2024/09/30	Corporate Governance: Cybersecurity Management	3
Independent Director	Chen, Chiu-Yueh	2024/08/15	Internal Control and Board Operation with Case Studies	6
Independent Director	Wu, Kuo-Shih	2024/07/11	ChatGPT Industry Trends	3
		2024/07/31	Valuation Standards No.16: Inventory	3
Independent Director	Tsai, Ming-Tang	2024/08/22	Internal Audit Positioning and Ethics	6
Corporate Director Representative	Chuang, Chao-Chin	2024/08/15	Internal Control and Board Operation	6
Corporate Director Representative	Lee, Mei-Jung	2024/09/03	Financial Statement Analysis	6
Director	Huang, Tang-Chieh	2024/12/26	Using RPA to Enhance Internal Controls	6

Mechanism to Avoid Conflicts of Interest

In accordance with the Corporate Governance Best Practice Principles, the Company has established the “Regulations Governing Financial and Business Transactions with Related Parties” to safeguard sound corporate governance and protect shareholders’ rights and interests. These regulations set forth clear rules and review procedures regarding non-routine transactions between board members and their related parties—such as purchases and sales, acquisition and disposal of assets, endorsements and guarantees, and loans of funds—to prevent improper transfer of benefits and to strengthen internal control.

To ensure fairness in decision-making and transparency of information, the Company has also included explicit conflict-of-interest provisions in the Rules of Procedure for Board of Directors’ Meetings. When a director, his/her spouse, relatives within the second degree of kinship, or enterprises with which the director has a controlling or subordinate relationship, have an interest in any matter under discussion at a board meeting, the director shall proactively explain the specific details of such interest. If the interest may potentially harm or give rise to doubts about the Company’s best interests, the director must recuse himself/herself from the relevant discussion and voting, and may not act as a proxy for other directors in exercising their voting rights, thereby preventing imbalance in the decision-making process.

Independent directors, by virtue of their professionalism and impartiality, provide objective and constructive opinions to assist the board in carefully evaluating the necessity and reasonableness of proposals involving potential conflicts of interest. All matters involving conflicts of interest—including the director’s name, the details of the interest involved, whether recusal was applied, and the actual implementation—must be accurately recorded in the meeting minutes and disclosed in the Company’s annual report and on the Market Observation Post System, in compliance with corporate governance and information disclosure requirements.

Information regarding cross-shareholdings with other stakeholders, as well as details related to controlling shareholders and their related parties, is disclosed in the Company’s annual report.

Through institutionalized management, strengthened internal controls, and transparent disclosure, Microcosm Technology is committed to fostering a culture of integrity, ensuring fairness in corporate decision-making and legitimacy in governance, thereby implementing the principle of “Conflict of Interest Prevention” and enhancing the overall quality of corporate governance.

Board Remuneration

The remuneration of the Company's directors consists of transportation allowances and directors' compensation. Transportation allowances are determined with reference to industry standards and are paid based on directors' attendance at board meetings. Directors' compensation is determined by the Board of Directors in accordance with their level of participation in the Company's operations and the value of their contributions, and is subject to review and approval by the Compensation Committee and the Board of Directors. Independent directors receive only fixed transportation and attendance fees and do not participate in the distribution of directors' compensation.

The Company's Articles of Incorporation stipulate that the total remuneration for directors and supervisors shall not exceed 5% of the Company's annual profits. However, accumulated losses, if any, must first be covered. For detailed information on the remuneration of directors and managerial officers, please refer to the Company's 2024 Annual Report.

Communication and Response to Major Events

The Company handles and discloses material internal information in accordance with applicable laws, regulations, and the rules of the Taiwan Stock Exchange and the Taipei Exchange, as well as the Company's internal procedures for handling material information.

When the Company makes a major decision or an important event occurs that meets the requirements of the Taipei Exchange's procedures for verification and public disclosure of material information by listed companies, the Company shall complete the "Material Information Disclosure Application Form" and the "Material Information Evaluation Checklist." These documents must be signed by the head of the Finance and Accounting Department and then reviewed by the Company's spokesperson. The material information shall be released after being approved and signed by the General Manager, and within the statutory time limit.

If a resolution or event is deemed material under the Taipei Exchange's regulations, or upon further assessment is determined to have a significant impact on the Company's financial condition, business operations, shareholders' rights, or securities prices, the Company shall promptly disclose such material information in accordance with the above procedures and within the statutory time frame. In 2024, the Company disclosed material information on the Market Observation Post System a total of 17 times.

Functional Committees

The Board of Directors has established three functional committees—the Audit Committee, the Compensation Committee, and the Sustainability and Risk Management Committee—to assist the Board in fulfilling its supervisory responsibilities, enhancing the quality of decision-making, and strengthening governance effectiveness. The operations of each committee are as follows:

(1) Audit Committee

Objective: To oversee the accuracy of financial statements, the effectiveness of internal controls, and compliance with laws, ensuring risk management implementation.

Responsibilities:

- Ensure the proper presentation of financial statements.
- Evaluate and appoint CPAs, and review their independence and performance.
- Review the implementation of internal control systems and risk management mechanisms.
- Supervise legal and regulatory compliance.

The Audit Committee, composed entirely of independent directors, convenes regularly to review financial reports, internal audit reports, and internal control assessments. Its recommendations are submitted to the Board of Directors for discussion and resolution, ensuring financial transparency and effective risk management.

(2) Remuneration Committee

Objective: To ensure reasonable remuneration aligned with business performance, guiding management toward long-term value creation within controllable risks.

Responsibilities:

- Establish and periodically review performance evaluation standards and remuneration policies for directors and managers.
- Assess the appropriateness and market competitiveness of remuneration levels.
- Prevent risk behaviors induced by remuneration policies while protecting company and shareholder interests.

The Compensation Committee consists of no fewer than three members, with a majority being independent directors. In this term, all members are independent directors. The committee holds regular meetings to review the remuneration structures of directors and senior executives, taking into account market benchmarks, the Company's performance, and individual contributions to ensure fairness and transparency in the remuneration system.

(3) Sustainability and Risk Management Committee

Objective: To strengthen corporate sustainability governance, formulate and oversee the execution of sustainability policies, and integrate ESG issues into business strategies.

Responsibilities:

- Review sustainability policies and targets, and periodically assess implementation results.
- Supervise the progress of major sustainability projects to ensure alignment with strategy and stakeholder expectations.
- Review sustainability reports and advise the Board on related disclosures.

3.02 Integrity Management

Integrity Management and Policy Commitment

Microcosm Technology adheres to the principles of fairness, transparency, honesty, and trustworthiness, positioning integrity management as a core value of its corporate culture. The Company is committed to operating with integrity, refraining from accepting or providing improper benefits, and has established relevant policies and systems to strengthen corporate governance and risk control mechanisms, thereby continuously enhancing integrity management performance.

The Company's "Code of Ethical Conduct", "Ethical Corporate Management Best Practice Principles", and "Procedures for Ethical Management and Guidelines for Conduct" have all been reviewed and approved by the Board of Directors and are publicly disclosed on the Company's website. These serve as compliance standards for all employees and stakeholders, fostering a clean, transparent, and responsible business environment that supports the achievement of sustainable development goals.

In 2024, the Company recorded no violations of laws or regulations in social or economic areas, and no incidents of anti-competitive, antitrust, or monopolistic behavior, nor any corruption cases.

The Board of Directors and management are committed to implementing integrity management policies and require all employees and suppliers to comply with relevant regulations. To ensure effective execution, the Company has adopted the following measures:

- All employees are required to sign the Statement of Compliance with Integrity Management Policy, achieving 100% coverage.
- Within supply chain management, business partners are required to sign the Integrity Commitment Letter, and integrity policy notices are sent out periodically to ensure the principles of integrity extend throughout the supply chain.
- Internal management regulations explicitly prohibit directors, managers, and employees from accepting or offering any improper benefits, thereby strengthening risk prevention and internal control.

Measures to Prevent Insider Trading and Conflicts of Interest

The company strictly prevents insider trading and conflicts of interest through internal regulations and training to protect shareholder rights and uphold governance principles.

For conflict of interest prevention, clear recusal requirements are stipulated in the “Board Meeting Rules,” “Ethical Corporate Management Best Practice Principles,” “Corporate Governance Regulations,” and “Audit Committee Charter.” Directors must disclose the nature of their interests in meeting proposals and recuse themselves from discussion and voting if the interests may harm the company, ensuring objective and fair decision-making.

To strengthen independence and oversight, the “Independent Directors’ Duties Regulations” require independent directors to provide constructive, independent opinions during significant decisions.

For insider trading prevention, the company, following “Corporate Governance Best Practice Principles” and OECD Principles of Corporate Governance, has established an “Insider Trading Prevention Control System.” Measures include:

- **Blackout Period Restrictions:** Directors are prohibited from trading company stock 30 days before annual financial report announcements and 15 days before quarterly announcements.
- **Internal Information Management:** When insiders become aware of undisclosed material information, they enter a “restricted period” during which trading is prohibited.
- **Training and Awareness:** Regular integrity management and insider trading prevention courses are provided to directors, management, and relevant personnel to strengthen compliance and ethical awareness.

Microcosm Technology will continue enhancing internal control and governance transparency, ensuring independent directors can effectively supervise and provide constructive opinions, aligning Board operations with company interests and shareholder rights.

Whistleblower System and Complaint Mechanism

To enforce the “Code of Ethical Conduct” and “Ethical Corporate Management Best Practice Principles,” the company has established a safe and effective whistleblower mechanism for employees and stakeholders to report legal or ethical violations while protecting whistleblower rights and fostering a culture of integrity.

The Company provides multiple reporting channels to ensure confidentiality and fairness of whistleblowing cases. Reports can be filed through the following methods:

- Written reports: Audit Office, No.8, Nanke 9th Rd., Shanhua Dist., Tainan City 741, Taiwan
- Email: integrity@microcosm.com.tw
- Hotline: +886-965-728-905 or +886-6-5050662 ext. 807
- Online system: “Ethical Violation Reporting System” on the company website

The Company strictly prohibits any form of retaliation or unfair treatment, ensuring the rights and interests of whistleblowers are fully protected.

In response to the Responsible Business Alliance (RBA) Code of Conduct and global corporate governance trends, the Company revised its “Whistleblowing System for Violations of Ethical Business Practices” in December 2024. The revision, approved by the Board of Directors, introduced an anonymous reporting function to enhance reporting safety and optimized case-handling procedures to ensure fairness and independence. As of 2024, the Company has not received any whistleblowing cases.

Whistleblowing Case Handling Process:

- **Independent Investigation:** Upon receipt of a report, the designated unit conducts an independent and impartial investigation.
- **Review and Improvement:** If a case is verified, the Company reviews the relevant internal control system and proposes corrective measures.
- **Regular Board Reporting:** The handling status and improvement progress of whistleblowing cases are reported regularly to the Board of Directors to strengthen governance transparency and accountability.

As of 2024, the Company has not received any whistleblowing cases.

Microcosm Technology will continue to review and update its whistleblowing mechanism to ensure effectiveness and compliance, further strengthening the culture of corporate integrity, enhancing governance transparency, and promoting sustainable development.

Anti-Corruption

Microcosm Technology is committed to complying with all applicable laws and strictly prohibits any form of corruption. In 2024, the company conducted a corruption risk assessment for its Taiwan headquarters, covering key areas such as supply chain management, procurement processes, and business operations. No significant corruption risks were identified during the assessment.

Anti-Corruption Measures are as follows:

- **Policy Communication:** The anti-corruption policy is incorporated into the company's code of conduct and communicated to all employees and Board members through the internal website, emails, and employee handbooks. Major suppliers are also informed of the company's commitment to integrity management.
- **Training Implementation:**
- New employees are required to complete legal training courses on integrity and anti-corruption.
- In 2024, integrity management training was conducted for all employees, achieving a 64% participation rate, with the remainder due to shift arrangements or leave.
- **Improvement Measures:**
- Launching online training courses to provide flexible learning opportunities.
- Establishing make-up training mechanisms to ensure comprehensive training, aiming for 100% coverage.

In 2024, Microcosm Technology did not identify any cases of corruption or violations of its ethical business policies. The Company will continue to strengthen oversight through audits, grievance mechanisms, and training to mitigate risks, while promoting sustainable operations and long-term value with transparency and accountability.

3.03 Economic Performance

Operational Performance

Microcosm Technology, a Taiwan-listed company, prepares its financial statements in accordance with International Financial Reporting Standards (IFRS), audited and certified by PwC Taiwan in compliance with accounting standards, approved by the Board, and disclosed in the annual report and Market Observation Post System to ensure accuracy and transparency.

For detailed 2024 information regarding revenue, operating costs, employee compensation, tax payments, and dividend distributions, please refer to the “Financial Statements” and “Operating Performance Analysis” sections in the company’s 2024 Annual Report.

Taxation

In response to the global emphasis on tax governance and sustainable taxation, Microcosm Technology adheres to principles of legality, integrity, and transparency, ensuring full compliance with tax obligations while effectively managing potential tax risks supporting sustainable operations.

A professional tax supervisor and team handle daily tax filings, risk assessments, and compliance management under the CFO, who assumes ultimate responsibility for tax management to ensure effective implementation.

With major operations in Taiwan and Mainland China, and amid evolving cross-strait and international tax regulations, the Company closely monitors tax developments in each jurisdiction, adjusts strategies as needed, and periodically reviews the appropriateness of tax policies. External professional tax advisors are engaged when necessary to enhance management effectiveness and tax compliance capabilities.

Key tax policies include:

- All business operations comply with the tax laws and regulations of the respective jurisdictions.
- Transactions with related parties follow the Arm's Length Principle to ensure fair and reasonable pricing.
- All tax disclosures comply with financial reporting and tax regulations, emphasizing transparency.
- The Company does not engage in tax evasion, use tax havens, or undertake improper tax planning.
- Profits are not shifted to low-tax jurisdictions for the purpose of reducing tax liabilities.
- The Company actively maintains a cooperative and trustworthy relationship with tax authorities, fulfilling all filing and audit obligations in accordance with the law.
- All major business decisions incorporate tax impact assessments to minimize potential risks.
- Operational changes are regularly analyzed, and tax management mechanisms are used to identify and control risks.

3.04 Risk Management and Internal Control

Microcosm Technology adheres to the principle of prudent management and has established a comprehensive risk management mechanism to ensure the Company can effectively identify, assess, monitor, and respond to various risks in its operations. The Company annually collects market information, evaluates potential risk events, and develops appropriate countermeasures to minimize potential impacts, ensuring stable business development.

To strengthen risk management, the Board of Directors approved the “Risk Management Policies and Procedures” in December 2020. This framework covers risk identification, risk assessment, risk response, risk monitoring, and risk reporting. Operational units identify risks within their scope of responsibility, analyze the likelihood and impact of potential events, and propose appropriate mitigation and improvement measures. All processes and results are documented, reviewed, and reported through proper mechanisms to ensure the effectiveness of risk management, enhancing the Company’s operational resilience and sustainable development capability.

Policy / Commitment

Establish a comprehensive Enterprise Risk Management (ERM) system based on international standards to ensure long-term operational resilience and crisis response capability.

2024 Microcosm Technology Sustainability Report

Major Issues	Risk Management
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Policy / Commitment	<p>Establish a comprehensive Enterprise Risk Management (ERM) system based on international standards to ensure long-term operational resilience and crisis response capability.</p> <p>The Company commits to continuously strengthening internal controls, supply chain risk management, and information security, while fostering a company-wide risk awareness culture that emphasizes prevention over remediation.</p>
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Core Objectives	<ul style="list-style-type: none">● Conduct a comprehensive annual risk inventory.● Maintain a near-zero occurrence of major risk events.
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2024 Performance Results	<ul style="list-style-type: none">● The 2024 risk inventory was documented in the “Organizational Environmental Issues and Risk Management Countermeasure Table”, covering operations, compliance, environmental, and information security aspects.● Number of major risk events in 2024: 0 cases.
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Action Plan	<ul style="list-style-type: none">● Update the “Organizational Environmental Issues and Risk Management Countermeasure Table” annually, adjusting for the latest operational environment.● Develop mitigation and contingency plans for high-risk issues.● Conduct risk management training and drills to enhance employees’ response capabilities.● Strengthen supply chain risk assessment and diversification strategies to reduce external impacts.
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2024 Microcosm Technology Sustainability Report

Assessment Mechanisms	<ul style="list-style-type: none">● Establish a risk assessment list and review/update regularly.● Hold periodic management review meetings to evaluate the effectiveness of risk response measures.● Implement internal and external audits
Feedback Mechanism	<ul style="list-style-type: none">● Management Review Reports.● Report findings and assessments to the Board and senior management.● Establish mechanisms for employees to report risks and anomalies, ensuring issues are promptly tracked and resolved.
2025 Goals	<ul style="list-style-type: none">● Maintain zero major risk events.● Enhance supply chain resilience by establishing a diversification mechanism for key suppliers.● Strengthen information security protection, completing at least one information security drill in 2025.

Risk Management Mechanism

Risk Management Process

In accordance with the “Risk Management Policies and Procedures”, the Company has established a comprehensive risk management mechanism to ensure sound corporate governance and reasonably safeguard the achievement of mid- to long-term strategic plans and objectives. The risk management process consists of five key steps:

2024 Microcosm Technology Sustainability Report

Risk Step	Implementation Description
Risk Identification	The Company conducts a comprehensive identification of risks, covering strategic, operational, financial, hazard-related, and regulatory compliance aspects, ensuring that risks at all levels are included in the management scope.
Risk Assessment	Risks are evaluated by analyzing their likelihood of occurrence and potential impact on operations. This assessment helps determine the priority of risk controls and the appropriate response measures.
Risk Monitoring	Each department is responsible for monitoring changes in risk and proposing response strategies. The Risk Management Team integrates monitoring information to ensure the ongoing operation of the risk management mechanism.
Risk Reporting	The Risk Management Team reports to the Audit Committee at least once a year to ensure the effectiveness of risk management and provide reference for management decision-making.
Risk Response	Appropriate risk management measures are implemented, including: <ul style="list-style-type: none">● Risk Avoidance: Avoid activities that may generate risks● Risk Reduction: Reduce the likelihood or impact of risks● Risk Sharing: Spread risks through insurance, partnerships, or other means● Risk Acceptance: Accept and manage risks within a controllable scope

Major Risk Identification

The Company uses a matrix approach to analyze the likelihood and impact of risks, classifying risk levels accordingly. Corresponding strategies are developed for different sources of risk, covering three key dimensions: Governance, Environment, and Social.

Below are the main risk categories for Microcosm Technology and the associated management measures:

Risk Dimension-Governance

2024 Microcosm Technology Sustainability Report

Risk Issues	Description	Policy & Strategy
Financial Risk	High-leverage investments, loans, or guarantees may result in financial losses due to market fluctuations or default risk. Interest rate and exchange rate volatility can also affect operating costs and financial performance, particularly in times of global economic uncertainty, potentially impacting profitability.	Microcosm adheres to prudent financial management, focusing on core business operations and avoiding high-risk investments or excessive leverage to ensure financial stability. Through cautious hedging strategies, the Company closely monitors interest rate and currency fluctuations, assesses market risks, and adjusts foreign exchange and fund allocation as needed to mitigate financial market volatility and ensure long-term operational stability and profitability.
Supply Chain Risk	Fluctuations in raw material prices, suppliers' financial stability, or delivery delays can affect production plans and cost structure. Increasing ESG compliance requirements among suppliers may impact corporate reputation and customer relationships if not met.	A supplier management system is established, including annual supplier risk assessments. Dual-supplier strategies and inventory management are implemented to enhance supply chain resilience, ensuring uninterrupted supply of critical materials.

2024 Microcosm Technology Sustainability Report

Information Security Risk	As operations become increasingly digital, the Company faces risks from cyberattacks, data breaches, hacking, malware, and internal data management lapses. Major security incidents could disrupt operations, compromise confidential information, and damage customer trust and corporate reputation.	A comprehensive cybersecurity framework is in place, including data encryption, access control, monitoring, and anomaly alert systems. Regular employee cybersecurity training is conducted to raise awareness, and data backup systems are established to ensure operational stability.
Product Development Risk	Rapid technological evolution and intense market competition require products with high added value and differentiation; delays in development or technological uncertainties could affect growth momentum.	The Company invests in R&D resources, conducts market research, and collaborates closely with customers and industry experts to stay ahead of technological trends. Regular product development meetings are held to set technical roadmaps, optimize development processes, and improve R&D efficiency, ensuring technological innovation and product competitiveness.

Risk Dimension-Environment

2024 Microcosm Technology Sustainability Report

Risk Issues	Description	Policy & Strategy
Climate Change Risk	Climate change may lead to water shortages and unstable energy supply, potentially affecting production stability and costs.	Continuously promote water-saving measures and evaluate improvements in water recycling efficiency; enhance energy use efficiency.
Environmental Regulation Compliance Risk	Global environmental regulations are becoming increasingly stringent. Failure to meet the latest environmental standards may result in fines, product bans, or even production interruptions. This is especially relevant in regions such as the EU and the U.S., where stricter regulations are implemented for supply chain carbon emissions and hazardous substance management.	Establish an environmental compliance audit mechanism, regularly review domestic and international environmental regulations, and proactively adjust operational strategies to ensure products and processes comply with global environmental standards.

Risk Dimension-Social

2024 Microcosm Technology Sustainability Report

Risk Issues	Description	Policy & Strategy
Labor Shortage Risk	Declining birth rates and an aging population are tightening the labor market. Combined with intense competition in the technology industry, the Company faces risks in recruiting talent and retaining key technical personnel. Failure to attract and retain talent may impact operations and innovation capabilities.	Strengthen talent development programs, collaborate with academic institutions for industry-academia partnerships, and provide diverse career development opportunities to attract and retain top talent.
Employee Health & Safety Risk	The work environment may involve physical, chemical, or human factor hazards, such as production line operations, chemical use, and working hours management. Poor management may affect employee health and productivity, and could lead to workplace accidents.	Implement occupational health and safety management, provide regular health check-ups, conduct hazard identification and risk assessments, and provide health promotion programs, safety training, and necessary control measures.

Microcosm Technology recognizes the critical role of risk management in sustainable development. The Company will continue to strengthen risk monitoring mechanisms, identify risks in real time, track market trends, and enhance internal management and response capabilities to maintain competitiveness in a changing environment. By integrating digital technologies and intelligent management systems, Microcosm aims to optimize its risk early-warning mechanisms, ensuring risks remain controllable and responses are swift, thereby achieving resilient operations and sustainable growth. On February 27, 2025, the Company reported the 2024 risk management performance to the Board of Directors.

3.05 Regulatory Compliance

Microcosm Technology is committed to complying with all relevant laws and regulations by establishing a sound compliance system and internal audit mechanism to ensure that business operations are lawful and compliant. In 2024, the Company did not incur any major regulatory violations (where materiality is defined as incidents involving the Company's core operations and having a significant impact on its reputation or financial position).

Looking ahead, the Company will continue to strengthen compliance awareness and risk management capabilities across all employees through internal controls, training programs, and regulatory monitoring mechanisms, ensuring sustainable operations and building long-term trust with society.

3.06 Information Security and Customer Privacy Protection

Information Security Management

Information Security Risk Management Framework

To safeguard corporate information security, Microcosm Technology has established a comprehensive information security risk management framework. In accordance with its Information Security Management Regulations, the Company has formulated an information security policy and set up a dedicated information security management unit responsible for internal information security, employee training, and risk response mechanisms. In addition, the Company conducts regular internal and external audits to assess the implementation of its information security policies and ensure the effective execution of all measures.

Information Security Policy

Adhering to the core philosophy that “information security is corporate competitiveness,” Microcosm Technology is committed to protecting confidential information belonging to both the Company and its customers, ensuring business continuity, and minimizing cybersecurity risks. The Company’s information security policy is based on the following principles:

- **Confidentiality:** Safeguard internal information, customer data, and R&D secrets against unauthorized access, disclosure, or alteration.
- **Integrity:** Prevent unauthorized modifications to data to ensure accuracy and consistency of information.
- **Availability:** Maintain stable operation of information systems and prevent business disruptions caused by security incidents.
- **Regulatory Compliance:** Ensure that information security management aligns with government laws and international standards (e.g., Intellectual Property Rights Act, Personal Data Protection Act).
- **Risk Management:** Conduct regular information security risk assessments and implement appropriate protective measures to reduce potential risks.

Information Security Management Measures

1. System Access and Permission Control

- Implement the principle of least privilege to ensure employees only access systems and data required for their job responsibilities.
- Conduct regular reviews of access permissions to prevent unauthorized access and internal misuse.
- **Account and password management:** All information systems require individual login accounts. Passwords must comply with security standards, such as regular changes and minimum length requirements.

2. Security Monitoring and Protection Mechanisms

- Deploy firewalls to monitor network traffic and prevent malicious attacks.
- Ensure all computer equipment is equipped with antivirus software, updated regularly with the latest virus definitions, and subject to periodic scans to maintain system security.
- Implement an email security protection system to filter spam and malicious emails, preventing phishing attacks and malware intrusions.

3. Data Encryption and Backup Mechanisms

- Confidential documents must be protected with encryption technology to prevent unauthorized access or leakage.
- Critical business data is regularly backed up and supported by off-site disaster recovery mechanisms to ensure quick restoration in the event of disasters or equipment failures.
- All outbound internal documents and use of portable storage devices must undergo review and encryption to reduce the risk of data leakage.

4. Information Security Training and External Internal Audits

- New employees are required to sign an information security confidentiality agreement and undergo cybersecurity training to strengthen overall awareness.
- Regular cybersecurity drills and training sessions are conducted to ensure employees are familiar with emerging threats and response measures.
- Internal audit teams periodically review the implementation of information security policies, while external professional organizations conduct independent security audits to ensure compliance with regulations and industry best practices.

Through these information security management measures, Microcosm Technology ensures the safety and stability of its information assets, mitigates business risks, and provides customers and partners with a reliable and trustworthy information environment.

Personal Data Protection Policy and Implementation

The Company places great importance on customer privacy, personal data protection, and information security, regarding them as fundamental to maintaining trust and ensuring sustainable business operations. To protect the personal data and business information of customers, employees, job applicants, suppliers, and partners from unauthorized access, leakage, alteration, or misuse, the Company complies with the Personal Data Protection Act and relevant information security standards. We continue to strengthen our information security management system and implement protective mechanisms to reduce risks.

To further enhance customer privacy protection, the Company has adopted the following management and protection measures:

- Establishment of a multi-layered information security defense architecture, including firewalls, malware protection, and other safeguards.
- Implementation of a Data Classification and Control Policy to manage access rights and encryption based on data sensitivity.
- Regular information security risk assessments and vulnerability scans to strengthen overall cybersecurity resilience.
- Company-wide information security training and social engineering drills to raise internal awareness of data protection.

In 2024, no major information security incidents occurred (such as customer data breaches, disclosure of trade secrets, or ransomware attacks).

Looking ahead, the Company will continue to review and optimize its customer data protection policies and practices in line with domestic and international cybersecurity regulations and standards. These efforts will further reduce information security risks, safeguard customer rights, and strengthen the Company's overall digital trustworthiness.

3.07 Customer Engagement and Service

Microcosm Technology adheres to a “customer-oriented” philosophy, dedicated to delivering high-quality products and excellent services, while building stable and trustworthy long-term partnerships.

2024 Microcosm Technology Sustainability Report

Major Issues Product Quality and Safety

Policy / Commitment Guided by a customer-centric approach, the Company is committed to enhancing customer satisfaction and fostering long-term cooperation. We pledge to continuously optimize customer experience through transparent communication, rapid response, and customized services, while incorporating feedback into product and service improvements to achieve win-win value creation.

Core Targets

- Annual customer satisfaction score ≥ 7.8
- Product return rate $\leq 1.5\%$

2024 Performance Results

- Customer satisfaction score: 8.6
- Product return rate: 0.02%

Action Plans

- Establish a rapid response mechanism to shorten complaint-handling cycles.
- Conduct regular and ad hoc customer visits to strengthen interaction and relationship building.
- Optimize after-sales service processes, offering customized technical support and project collaboration.
- Collect customer feedback through multiple channels (online platforms, surveys, dedicated interviews) to ensure timely responses.

Evaluation Mechanisms

- Annual customer satisfaction surveys and analysis.
- Tracking of complaints and return anomalies.
- Regular review of customer feedback and improvement measures.

Feedback Mechanism

- Real-time tracking and improvement reports through the customer complaint system.
- Regular consolidation of customer feedback, integrated into product development and service optimization processes.
- Senior management reviews customer satisfaction levels and feedback results.

2025 Goals

- Continuously achieve annual KPIs.
- Increase customer satisfaction to ≥ 8.0 .
- Reduce return rate to $\leq 0.5\%$.
- Implement a digital Customer Relationship Management (CRM) system to enhance service efficiency and accuracy.

Policies and Actions

To meet customer needs and enhance market competitiveness, we have established the following strategies and action plans:

- **Actively expand new markets and customers:** Continuously develop potential clients, broaden product application fields, and deepen collaboration with existing customers.
- **Business growth and target management:** Set annual sales growth targets, adjust business strategies based on market analysis, and ensure steady growth.
- **Efficient order processing:** Optimize internal processes to improve order response speed, ensure on-time delivery, and meet customer requirements.
- **Deep understanding of customer needs:** Conduct regular interviews, technical exchanges, and market analysis to fully grasp customer requirements and future development directions, providing customized solutions.
- **Timely issue resolution:** When customer feedback or issues arise, our sales and technical teams will respond immediately with effective solutions, minimizing operational risks and maintaining strong partnerships.

Management Evaluation Mechanism

To ensure customer service quality and supply chain stability, Microcosm Technology has established a comprehensive management evaluation system, including:

- Customer satisfaction surveys: Collect feedback regularly, analyze satisfaction indicators, and use results as the basis for product and service improvements.
- Business and market growth evaluation: Track annual sales growth rates and market penetration to assess the effectiveness of new customer development and market expansion.
- Product and on-time delivery monitoring: Use data analysis to ensure order processing and delivery performance meet customer expectations, enhancing supply chain efficiency.
- Customer audits and improvement: Conduct regular audits with key customers to review product quality, delivery schedules, and technical support, and implement improvements where needed.

We conduct customer satisfaction surveys annually. In 2024, the average score was 8.6, exceeding the target score of 7.8 and improving compared with 2023 (8.2 points). The survey results are shown in the table below:

2024 Microcosm Technology Sustainability Report

Year	Target Score	Actual Score	Satisfaction Ratio
2023	7.8	8.2	79.2%
2024	7.8	8.6	83.3%

The company places great importance on customer feedback. All survey results and customer complaints are systematically tracked and transformed into improvement plans. Through transparency of information, timely responses, and continuous feedback, we ensure that customer opinions are effectively integrated into management improvements.

Preventive and Mitigation Measures

To reduce potential customer risks and ensure service quality and product supply stability, Microcosm Technology has implemented the following preventive and mitigation measures:

- Enhancing production flexibility: Optimize processes and equipment configuration to improve capacity allocation and ensure supply chain stability.
- Strengthening internal communication and collaboration: Establish real-time communication mechanisms among sales, technical, and production teams to quickly respond to market changes and customer needs.
- Implementing a Customer Relationship Management (CRM) system: Utilize data analytics to track customer history and purchasing behavior, providing more accurate product and technical support.
- Risk alert and contingency mechanisms: Develop advance countermeasures for potential risks—such as raw material shortages or capacity adjustments—to secure stable supply.

Anti-Competitive, Anti-Trust, and Anti-Monopoly Legal Actions

In 2024, Microcosm Technology was not involved in any legal actions, lawsuits, or fines related to anti-competitive behavior, anti-trust issues, or monopolistic practices. The company strictly complies with the Fair Trade Act and other relevant regulations to ensure a fair and competitive market environment. Specific measures include:

- Regularly reviewing business contracts to ensure there is no price manipulation or market allocation.
- Conducting internal audits to monitor business practices and ensure compliance with legal requirements.

Customer Satisfaction Measurement

Beyond quantitative metrics, the company places strong emphasis on analyzing customer feedback to gain deeper insights into customer needs.

The 2024 survey results showed an overall average score of 8.6, with customers expressing strong recognition in the following areas:

- **Service attitude:** Widely praised, reflecting the company's professionalism and proactive approach in customer interactions and issue resolution.
- **On-time delivery and supply chain coordination:** Maintained at a stable level, demonstrating efficient internal processes and management.
- **Technical support and regulatory compliance:** Highly recognized by customers, highlighting the company's mature capabilities in compliance and professional support.

Future Outlook

Customer satisfaction results show that the company's efforts in quality management, supply chain efficiency, and customer service have been well recognized. Building on this foundation, we will continue to improve ourselves, actively respond to customer feedback, and provide higher-quality products and services. Our goal is to further establish long-term, stable, and trustworthy partnerships.

Customer Rights Protection Policy

Microcosm Technology places great importance on protecting customer rights. We are committed to ensuring health and safety in our products and services, as well as transparency and reliability in marketing, labeling, and information disclosure. This ensures that customers receive accurate information and safety protection throughout the purchase and usage of our products. Specific measures include:

1. Customer Health and Safety

- Products undergo testing and quality control processes in compliance with regulations and industry standards, including safety testing, reliability assessments, and hazardous substance controls (e.g., RoHS, REACH, HSF).
- Regular third-party audits and customer verifications are conducted.
- A product anomaly handling and traceability mechanism is in place to promptly notify customers and initiate corrective actions when issues arise.

2. Marketing and Labeling Management

- All product and service documentation must undergo internal review to ensure there are no false claims, exaggerations, or misrepresentations. Labels and technical documents provide detailed specifications and usage instructions to help customers make informed decisions.
- Sales and customer service staff receive training on responsible marketing and information disclosure to prevent misleading customers.

3. Information Disclosure and Customer Notification

- Product manuals, safety usage guidelines, and technical support channels are provided to help customers use products safely.
- Regulatory updates are proactively shared with customers to help them stay compliant with relevant requirements.

Complaint Mechanism

To strengthen customer communication and promptly address feedback, Microcosm Technology has established a comprehensive customer complaint system to ensure that every comment is properly recorded, handled, and improved upon:

- Customer Service Email: sales@microcosm.com.tw
- Customer Service Hotline: +886-6-5050662
- Official Website: Online inquiry form

Response and Handling Process

- Immediate Response: Once the sales team receives an issue, an emergency response mechanism is initiated. The sales team coordinates with technical and quality assurance departments to analyze the problem and provides an initial reply or solution within one business day.
- Issue Tracking and Improvement: All complaint records are subject to follow-up and improvement plans to prevent recurrence of similar issues.

Microcosm Technology will continue to optimize its customer rights protection policies and management mechanisms. Through high-quality products and professional technical support, we aim to strengthen long-term partnerships with customers and achieve the goal of creating shared value.

Customer Relationship Enhancement and Market Expansion

Microcosm Technology values long-term partnerships with customers. By actively participating in industry exchange activities, we strengthen two-way communication, continuously monitor market trends, and better understand customer needs.

We also actively participate in major domestic and international industry exhibitions and technical exchange events, such as SEMICON International Semiconductor Exhibition, TPCA Show (Taiwan Printed Circuit Association International Exhibition), and the CPCA Show (International Printed Circuit & APEX South China Fair, Shanghai). Through face-to-face interactions and product demonstrations, we not only deepen collaborations with existing customers but also explore potential market opportunities.

In addition, during exhibitions we deliver technical presentations and arrange professional briefings to obtain real-time, front-line market feedback, enhancing the precision of our R&D directions and application alignment. Post-event, our sales and technical teams follow up to transform exchanges into concrete collaboration opportunities. This ongoing process helps us reinforce customer partnerships and steadily build momentum for future growth.

3.08 Product Quality and Safety

Major Issues Product Quality and Safety

Policy / Commitment We promote company-wide participation in quality management to ensure products comply with international standards, regulations, and customer requirements. At the same time, we are committed to sustainability and social responsibility. With a long-term vision of “Zero Defects” and “Zero Hazardous Substances,” we strive to build a culture of full-process quality control from R&D through mass production.

Core Objectives

- Achieve annual customer complaint cases ≤ 3
- Maintain zero cases of hazardous substance exceedance

2024 Performance Results

- Effective customer complaints: 2 cases, all resolved and reported back to customers; follow-up confirmed no recurrence of similar issues.
- Hazardous substance exceedance: 0 cases, continued compliance with RoHS/REACH and other regulatory requirements.

Action Plans

- Successfully implemented and obtained ISO 9001 and QC080000 management system certifications to ensure process quality and hazardous substance control.
- Conduct regular training programs for new employees, R&D, manufacturing, quality control, and supply chain teams to strengthen overall quality awareness.
- Establish annual supplier audit and performance evaluation system to reduce upstream raw material defect rates.
- Continuously enhance product traceability mechanisms to enable rapid response in the event of abnormalities.

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- | | |
|-----------------------|---|
| Evaluation Mechanisms | <ul style="list-style-type: none">● Regular and ad hoc internal audits.● External audits, including annual third-party audits and customer audits.● Customer satisfaction surveys and feedback analysis.● Abnormality tracking reports with corrective and preventive action verification.● Regular management review meetings. |
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|---------------------|--|
| Feedback Mechanisms | <ul style="list-style-type: none">● Establish a real-time customer complaint tracking system to ensure cross-departmental rapid response.● Submit quality improvement reports and track implementation status.● Build clear feedback mechanisms with customers to ensure transparency. |
|---------------------|--|

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- | | |
|--------------|---|
| 2025 Targets | <ul style="list-style-type: none">● Achieve all annual quality KPIs.● Strengthen quality risk awareness among employees and suppliers.● Enhance compliance and competitiveness in international markets.● Maintain customer complaint cases ≤ 3.● Maintain hazardous substance exceedance cases at 0. |
|--------------|---|

Quality Policy and Green Product Commitment

Our company upholds the quality policy of “Innovative development, delivering quality that meets customer satisfaction, and achieving sustainable business growth.” We also follow the green product principles of “Protect the earth, cherish resources, comply with environmental regulations, and meet customer environmental requirements.”

We firmly believe that product quality and user safety are not only the basic responsibilities of a company but also core values in driving sustainable development and fulfilling social responsibility. With the foundation of employee-wide participation and continuous improvement, we implement a strong quality culture and proactively respond to global expectations for environmental protection and product safety.

Management Systems and International Certifications

To establish a systematic and sustainable framework for product quality and safety management, our company has implemented and obtained the following international certifications:

- **ISO 9001 Quality Management System:** By institutionalizing processes and carrying out continuous internal and external audits, we ensure that all stages—from R&D and production to quality assurance and delivery—adhere to consistent quality standards, thereby enhancing product stability and customer satisfaction.
- **IECQ QC080000 Hazardous Substance Process Management System:** A comprehensive hazardous substance control process has been established, covering the entire supply chain from raw materials to final products. This ensures strict compliance with international environmental regulations such as RoHS and REACH, protecting user health while minimizing environmental impact.

Quality Risk Control and Continuous Improvement

We have established a dedicated quality management department responsible for anomaly analysis, risk assessment, and corrective actions. Continuous quality optimization is driven by the following measures:

- Conducting regular employee training to strengthen company-wide quality awareness.
- Auditing and performing ad-hoc inspections of suppliers to ensure stable quality of upstream materials and processes.
- Implementing Total Quality Management (TQM) through cross-departmental collaboration to reduce defect rates and ensure product reliability.

Additionally, customer satisfaction survey results are incorporated into the quality management process, ensuring that quality improvements remain aligned with customer needs.

Customer Feedback and Information Transparency

We place great importance on customer feedback and have established complaint handling and satisfaction survey mechanisms. All customer-reported cases are systematically tracked and analyzed to ensure transparency, prompt resolution, and effective feedback. These mechanisms reinforce our commitment to responsible product management.

Misuse Risk Management and Countermeasures

To reduce product misuse risks arising from misinterpretation of instructions, we have adopted the following measures:

- Enhanced product instructions: Provide clear operational guidance and specific alerts for high-risk steps.
- Diverse educational resources: Offer training videos, illustrated manuals, online webinars, and on-site demonstrations to improve customer understanding and operational accuracy.

2024 Microcosm Technology Sustainability Report

Based on statistics, compared with 2023, the number of customer reports caused by product misuse significantly decreased in 2024. The results are as follows:

Indicator Item	2023	2024
Total customer reports (cases)	11	4
Confirmed cases due to misuse (cases)	10	2

Compliance with Hazardous Substance Regulations

Year	Target Score	Actual Score	Satisfaction Ratio
2023	7.7	8.9	88.0%
2024	7.7	8.6	88.0%

Outlook

Looking ahead, the company will continue to enhance its quality management system and customer service processes. We will expand educational and training resources, improve product information transparency, and strengthen correct product usage.

By upholding high standards of self-discipline, we aim to deepen customer trust and partnerships, realizing the corporate value of “Quality-driven Sustainability” and delivering environmentally friendly, high-quality products with global competitiveness.

3.09 Supply Chain Management

Microcosm is committed to establishing long-term, stable partnerships with domestic and international suppliers to ensure a sustainable supply chain, reduce operational disruption risks, and enhance corporate competitiveness. We adhere to principles of fairness, impartiality, and transparency in procurement. Through effective management measures, we ensure that suppliers meet quality, environmental and social responsibility requirements, achieving the goal of a sustainable supply chain.

Policies and Management Measures

1. **Supplier Selection and Evaluation:** According to the Supplier Selection and Management Procedure, evaluation criteria cover supplier quality, delivery capability, environmental responsibility, and social responsibility performance, including human rights, labor rights, and occupational health and safety. New suppliers must complete relevant qualification reviews and evaluations before onboarding.
2. **Regular Communication and Monitoring:** Maintain good interactions with suppliers through regular communication to share market information and technological developments, building trust and collaborative relationships.
3. **Strengthening ESG Standards:** Microcosm requires key suppliers to sign the RBA Code of Conduct Statement, covering the prohibition of child labor, forced labor, discrimination, environmental protection, and ethical business practices. If violations of social responsibility are identified in the supply chain, suppliers must immediately submit corrective action plans, and Microcosm will continuously monitor their implementation.
4. **Responsible Sourcing:** Implement a conflict-free minerals policy (e.g., tin, tungsten, tantalum and gold) and prioritize materials and suppliers that meet ESG standards to reduce social and environmental risks.

Supplier Management

To ensure stable supply of high-quality raw materials and technical support, Microcosm has established clear standards and procedures for supplier management—from onboarding new suppliers and regular evaluations to improvement plans for non-compliant suppliers.

Suppliers are assessed based on quality, delivery, price, technical capability, environmental performance, and social responsibility, with scores used for supplier rating. In 2024, 11 supplier audits were conducted, with no deficiencies identified.

Management Evaluation and Monitoring

Through strict supplier management policies and evaluation mechanisms, Microcosm ensures the stable development of its supply chain while continuously promoting environmental and social responsibility standards, achieving sustainable supply chain management goals.

- **Cross-Department Assessment:** Supplier evaluations are conducted jointly by the Procurement, Quality Assurance, and Technical departments to ensure suppliers possess technological innovation capabilities and awareness of sustainable development.
- **Quarterly Supplier Rating:** Key raw material suppliers are evaluated on a quarterly basis to maintain stable supply quality and reduce supply disruption risks.
- **Audit and Improvement Follow-Up:** Supplier corrective action plans are reviewed by a professional audit team to ensure effective implementation, enhancing overall supply chain management efficiency.

Supplier Relationship and Philosophy

Microcosm establishes mutually beneficial, sustainable partnerships with suppliers and requires them to follow Responsible Business Alliance (RBA) guidelines to ensure the supply chain meets international ESG standards.

RBA Code of Conduct Commitment Includes:

- **Labor Rights:** Ensure employees work in safe conditions; prohibit child labor and forced labor.
- **Environmental Management:** Comply with environmental regulations; minimize carbon emissions and waste pollution in production processes.
- **Business Ethics:** Prevent corruption and ensure transparency in procurement processes.
- **Management Systems:** Suppliers must implement internal audit mechanisms and regularly review and improve ESG performance.

Microcosm also promotes RBA standards internally through employee training and regular audits, ensuring both internal operations and supply chain partners comply with ESG regulations. If a supplier is involved in labor rights disputes or negative ESG incidents, Microcosm will implement corrective action plans and, if necessary, terminate the partnership to maintain supply chain responsibility.

Responsible Material Sourcing and Social Responsibility

Microcosm is committed to responsible raw material sourcing to ensure production processes comply with international ESG standards and to actively reduce environmental impacts across the supply chain.

Sustainable Procurement Measures:

- **Environmentally Friendly Materials:** Prioritize recyclable and low-impact materials to promote green manufacturing across the supply chain.
- **Conflict-Free Minerals Policy:** Comply with OECD guidance on minerals from conflict-affected and high-risk areas, ensuring no procurement of minerals from the Democratic Republic of Congo or neighboring countries (e.g., tantalum, tin, tungsten, gold, cobalt, mica).
- **Supplier Social Responsibility Management:** Require suppliers to sign the RBA Code of Conduct Statement and integrate ESG into supplier evaluation criteria, ensuring compliance with labor rights, environmental protection, and business ethics.

Through supplier management systems, environmentally responsible procurement, and supply chain social responsibility policies, Microcosm continues to advance sustainable supply chain development, ensuring stable operations and contributing to global environmental protection and social development.

04.Environmental Sustainability

4.01 Sustainable Environmental Management System

Environmental Management Policy

Microcosm Technology is committed to “environmental friendliness and resource sustainability” as core principles. In alignment with global initiatives such as Task Force on Climate-related Financial Disclosures (TCFD), net-zero emissions, and the circular economy, the company has established an environmental management policy covering: energy conservation and carbon reduction, waste minimization, water resource protection, and hazardous substance management. Sustainability principles are embedded in operational decisions and daily management processes to anticipate environmental risks and advance sustainable development.

Our Commitments:

- Comply with relevant environmental laws, regulations, and international standards.
- Regularly consult and respond to stakeholders’ concerns on environmental issues, ensuring policies meet practical needs.
- Set and monitor corporate environmental performance targets and continuously drive improvement.
- Disclose relevant environmental information regularly to enhance transparency and corporate accountability.

In 2024, the company completed a climate risk assessment and formulated response strategies. To communicate with stakeholders, a dedicated “Environmental Section” has been established on the company website, providing access to environmental data and progress updates. This ensures transparency and engagement with customers, suppliers, and the community regarding environmental concerns.

Environmental Management Organizational Structure and Responsibilities

Under the Sustainability and Risk Management Committee, Microcosm Technology has established the Sustainable Environment Task Force, comprising members from Manufacturing, R&D, Quality Assurance, EHS (Environment, Health & Safety), and Supply Chain departments. The task force is responsible for planning and implementing the company’s environmental strategies, as well as regularly reviewing performance and risk response measures.

Key Responsibilities Include:

- Identify and inventory environmental risks and regulatory compliance items.
- Monitor efficiency in energy, water, and raw material usage.
- Promote greenhouse gas inventory and reduction initiatives.
- Establish a waste management mechanism and assess feasibility of recycling and reuse.
- Regularly report implementation status to the Sustainability and Risk Management Committee.

Environmental Management System and Processes

Microcosm Technology has established an internal environmental management process to ensure effective implementation of its environmental policy. The main processes are as follows:

- **Environmental Impact Assessment:** The Sustainable Environment Task Force conducts an annual assessment to identify key issues such as carbon emissions, water resources, and waste.
- **Target and Plan Setting:** Develop annual environmental management plans, including goals for energy conservation, carbon reduction, water usage, and waste minimization.
- **Implementation and Monitoring:** Departments implement relevant measures according to the plan, with effectiveness tracked through data monitoring.
- **Review and Improvement:** Conduct regular internal audits to continuously optimize practices and adjust improvement strategies.

Environmental Commitment Goals and Stakeholder Communication

Microcosm Technology has established an environmental management policy with a long-term goal of achieving net-zero emissions by 2050. In line with regulatory requirements and global carbon reduction trends, the company has set short-, medium-, and long-term targets and implementation strategies as follows:

2024 Microcosm Technology Sustainability Report

Mid- to Long-Term Goals (2030)	Short-Term Goals (2026–2027)	2024 Achievements
Organizational Greenhouse Gas (GHG) Inventory and Verification	Complete company-level inventory report covering Scope 1 and Scope 2 by 2026	Completed first inventory in 2024 and established data management process
Carbon Intensity Improvement Target	Using 2024 as the baseline year, reduce GHG emission intensity per unit revenue by 1% by 2027	Baseline data under development
Annual Energy-Saving Rate Cumulative $\geq 15\%$	Annual energy-saving rate $\geq 3\%$	Energy-saving rate $> 17\%$ (estimated based on electricity emission factor reduction)
Total Water Consumption Average Annual Reduction $\geq 3\%$	Annual water consumption reduction $\geq 3\%$	Reduced by approx. 14% (compared to 2023)
Industrial Waste Generation Reduction $\geq 3\%$	Annual reduction $\geq 3\%$	Reduced by approx. 36% (compared to 2023)
Establish Comprehensive GHG Management System and Verification Process	Complete individual company verification by 2028; complete consolidated subsidiary verification by 2029	Progressing in line with FSC schedule
Wastewater Treatment Compliance Rate 100%	Achieve 100% compliance annually	Completed

Strengthen Data
Transparency and
Stakeholder
Communication

Establish environmental
section on official website
and regularly disclose
environmental information

Environmental section
established and
continuously updated

4.02 Climate-Related Financial Disclosures (TCFD)

Microcosm Technology recognizes the significant impact that climate change can have on corporate sustainable development. Accordingly, the company continuously strengthens its focus on climate-related issues and its capacity to respond. Since 2020, sustainability governance has been formally integrated into the board of directors' agenda as a key item, including the formulation of sustainable action strategies, annual budgets, business targets, climate mitigation measures, and oversight of related capital expenditures.

The company also follows the Task Force on Climate-related Financial Disclosures (TCFD) framework, issued by the Financial Stability Board (FSB), and regularly conducts assessments of climate-related risks and opportunities. For identified risks and opportunities, Microcosm reports assessment results and progress on actions to the board of directors annually. The board is responsible for supervising and ensuring the implementation of overall strategies, demonstrating the company's commitment and accountability in climate governance.

Identification and Assessment Process for Climate-Related Risks and Opportunities

To effectively manage climate-related risks and opportunities, Microcosm Technology's Sustainability Development Committee incorporates climate change-related risks into its evaluation and tracking scope. The company continuously monitors climate risks that could impact operations, including international regulatory requirements and the occurrence of extreme weather events.

By adopting the TCFD framework, Microcosm analyzes climate change risks and opportunities. External organizations are commissioned to provide training sessions, explaining global risk trends and climate change, including:

- Current developments of TCFD
- TCFD-recommended frameworks for assessing climate-related risks and opportunities
- Climate scenario setting and the resulting risks and opportunities

These initiatives enhance employees' awareness of global risk trends and climate change. Departments then assess the climate-related risks and opportunities that may arise in their operational processes. For high-risk or high-impact items, the company discusses relevant response strategies and sets measurable targets, forming concrete climate management measures.

Process Steps:

2024 Microcosm Technology Sustainability Report

Step1: Set climate change scenarios

Step2: Assess impacts on operational environment

Step3: Identify climate-related risks and opportunities

Climate Risk Priority Matrix

Risk Category and Opportunities	Short-term (1–3 years)	Mid-term (3–6 years)	Long-term (6+ years)
Transition Risks Risks that may arise during the low-carbon transition, associated with changes in policies and regulations, technology, markets, society, and economic conditions	Regulation of total greenhouse gas emissions; carbon tax and carbon fees	Stricter environmental regulations; stricter renewable energy regulations	Products replaced by low-carbon alternatives; net-zero emission trends; insufficient climate action leading to reputational decline
Physical Risks Physical risks caused by climate change can be immediate or long-term. These risks may result in financial impacts, such as direct damage to assets or indirect effects from supply chain disruptions.	Increased frequency of droughts and floods (impacting own operations)	Supply chain disruptions caused by changing weather patterns (droughts)	Rising average temperatures
Opportunities Efforts in mitigation and adaptation to climate change will create opportunities for the organization	R&D and innovation of new products and services; reduced water consumption	Improved resource efficiency; promotion of low-carbon, green production	Enhanced corporate reputation

Microcosm Technology collects and consolidates climate-related risks and opportunities identified within the industry, and subsequently evaluate the likelihood of occurrence and the potential impact of each event on the Company. At the same time, short-, medium-, and long-term time horizons are considered in assessing the possible timing of such impacts, thereby completing the Company's materiality assessment of climate-related risks and opportunities. Through this process, the Company determines which climate-related risks and opportunities may pose significant financial impacts.

Microcosm Technology prioritizes climate-related risks and opportunities based on the level of impact and the likelihood of occurrence, in order to identify their relative importance.

Climate Risk Prioritization Matrix

2024 Microcosm Technology Sustainability Report

Likelihood of Occurrence	Impact Level		
	High	Medium	Low
High			<p>1. Greenhouse gas (GHG) emission controls, carbon tax and carbon fees</p> <p>2. Stricter renewable energy regulations</p> <p>3. Net-zero emission targets</p>
Medium		<p>6. Supply chain disruptions caused by changing weather patterns (e.g., droughts)</p> <p>7. Rising average temperatures</p>	<p>4. Stricter environmental regulations</p> <p>5. Substitution by low-carbon products</p>
Low	<p>9. Increased frequency of droughts and floods (impacting own operations)</p>	<p>8. Insufficient climate action leading to reputational decline</p>	

Climate-Related Risk Ranking

	High Risk	Medium Risk	Low Risk
High	1. GHG emission controls, carbon tax and carbon fees	4. Stricter environmental regulations	7. Rising average temperatures
Medium	2. Stricter renewable energy regulations	5. Substitution by low-carbon products	8. Insufficient climate action leading to reputational decline
Low	3. Net-zero emission targets	6. Supply chain disruptions caused by changing weather patterns (e.g., droughts)	9. Increased frequency of droughts and floods (impacting own operations)

Microcosm has assessed the aforementioned risks and identified climate-related risks and opportunities that may pose significant financial impacts. In response, the company has formulated corresponding strategies to mitigate risks and capture potential opportunities.

Financial Impacts and Response Strategies of Climate-Related Risks and Opportunities – Transition Risks

2024 Microcosm Technology Sustainability Report

Risk/Opportunity (R/O)	Financial Impact (-/+)	Response Strategy
R: Greenhouse gas emission controls, carbon taxes, and carbon fees R: Stricter renewable energy regulations	- Increase in operating costs (carbon fee payments, purchase of renewable energy certificates) - Non-compliance with regulations may lead to fines, raising expenses	- Improve energy efficiency and invest in green energy equipment - Conduct ISO 14064-1 GHG inventory - Invest in solar PV systems to reduce reliance on grid electricity and lower emissions - Purchase renewable energy in the market - Monitor regulatory changes and establish compliance audit systems - Strengthen regulatory training and set up cross-department response teams - Integrate sustainable design and circular economy concepts into products
R: Net Zero target	- Increased costs of installing and operating carbon reduction facilities	- Continue implementing GHG reduction initiatives - Require suppliers to adopt climate mitigation and adaptation actions - Research and develop alternative raw materials
R: Stricter environmental regulations O: Reduced water consumption	- Increase in operating costs (potential water usage fees) + Cost savings and benefits through water-saving measures	- Increase use of reclaimed water - Implement water-saving management and water recycling technologies in production processes

2024 Microcosm Technology Sustainability Report

<p>R: Products being replaced by low-carbon alternatives O: New product and service R&D and innovation</p>	<p>- If products fail to meet low-carbon regulations or market demand, revenue risks may arise + Developing low-carbon and green products can boost sales and revenue</p>	<p>- Continue investing in R&D to develop low-carbon products aligned with circular economy principles - Use low-carbon footprint materials and promote green product innovation</p>
<p>R: Supply chain disruption caused by weather pattern changes (droughts) R: Increased frequency of droughts, typhoons, and heavy rainfall (own operations)</p>	<p>- Raw material price fluctuations increase operating costs - Supply chain disruption leads to production shortages and revenue risks - Increased expenses for insurance and maintenance - Plant shutdowns and equipment damage causing asset losses and revenue risks</p>	<p>- Develop disaster response manuals and drought contingency plans - Implement alternative material sourcing and supplier diversification strategies - Regularly assess suppliers' availability and identify suppliers in other regions - Evaluate flood/drought risks for plants and develop mitigation measures - Consider climate physical risks when selecting new plant locations</p>
<p>R: Rising average temperatures O: Improve resource efficiency and low-carbon production</p>	<p>- Higher electricity consumption leading to increased operating expenses + Energy conservation reduces costs + Lower carbon fee payments by reducing emissions</p>	<p>- Purchase energy-efficient equipment</p>

Microcosm pledges to achieve net zero carbon emissions by 2050. To meet this target, the company has outlined the following action plans:

1. Calculate greenhouse gas emissions and establish a decarbonization roadmap.
2. Invest in solar photovoltaic systems for self-generation to reduce grid electricity consumption and emissions.
3. Upgrade aging equipment, invest in environmental protection facilities, and set energy-saving targets.

4.03 Sustainable Product Innovation

With the rising global demand for energy transition, Microcosm Technology is actively investing in green energy R&D, leveraging innovative materials to enhance energy storage technologies. We focus on the development of high-performance Proton Exchange Membranes (PEMs) applied in Vanadium Redox Flow Batteries (VRFBs), High-Temperature Proton Exchange Membrane Fuel Cells (HT-PEMFCs), and Anion Exchange Membrane Electrolysis (AEMEL), contributing to carbon reduction and advancing renewable energy development.

2024 Microcosm Technology Sustainability Report

Major Issues	Green Products
Policy / Commitment	Promote green design and low-carbon material R&D. Products must comply with international environmental regulations (RoHS, REACH). Gradually reduce environmental impact and expand the use of eco-friendly materials as a medium-to long-term goal.
Core Objectives	<ul style="list-style-type: none">• Develop ≥ 1 new eco-friendly material annually• Conduct annual compliance testing with international regulations (RoHS, REACH)
2024 Performance Results	<ul style="list-style-type: none">• Successfully developed one PFAS-Free material• Products complied with RoHS and REACH requirements
Action Plans	<ul style="list-style-type: none">• Develop PFAS-Free transparent polyimide material• Focus on key product lines and gradually introduce low-carbon and non-toxic alternative materials to reduce customer risk and environmental impact• Conduct regular third-party testing and internal validation to ensure continuous compliance with international standards• Engage in technical exchanges with customers to understand market demand for green products, guiding new product development
Evaluation Mechanisms	<ul style="list-style-type: none">• Third-party test reports (RoHS, REACH)• Customer feedback mechanisms• Environmental performance review meetings

Feedback Mechanisms

- Integrate test results and market feedback into product development processes
- Regularly track new material application effectiveness to guide improvements for the following year

2025 Targets

- Complete development of at least one new green material
- Maintain compliance with international regulations (RoHS, REACH)
- Strengthen co-development with customers to gradually increase the proportion of green products

Key Advantages of Vanadium Redox Flow Batteries (VRFB)

Vanadium Redox Flow Batteries are a long-duration energy storage technology essential for grid stability and efficient utilization of renewable energy. They store energy in liquid electrolytes, which release electricity through chemical reactions across an ion-exchange membrane. VRFBs provide load shifting, frequency regulation, and voltage stabilization functions. With long lifespan and high conversion efficiency, they are regarded as one of the key global technologies supporting renewable energy deployment.

According to Fuji Research Institute (Japan), VRFBs, when applied in front-of-the-meter grid systems and renewable energy integration, can significantly support grid decarbonization and help achieve net-zero carbon emission goals.

Role of the Membrane in VRFB

The ion-exchange membrane is one of the core components of a VRFB. Its primary function is to separate the positive and negative electrolytes, preventing vanadium ions of different valence states from mixing, while allowing selective ion transport to sustain electrochemical reactions.

Microcosm Technology has developed a specialized VRFB membrane with excellent selectivity and stability, effectively minimizing electrolyte crossover and significantly improving both coulombic efficiency and energy efficiency.

Features of Microcosm Technology's VRFB Membrane

The membrane developed by Microcosm Technology not only effectively prevents electrolyte crossover but also has the following features:

- **High Selectivity:** Effectively separates vanadium ions of different valence states, improving the electrochemical efficiency of the battery.
- **High Stability:** Strong resistance to chemical corrosion, maintaining stable performance under long-term high current density operation.
- **High Efficiency:** Test results show that under a current density of 200 mA/cm², the battery achieves a coulombic efficiency of 99% and an energy efficiency of over 81%, significantly enhancing overall battery performance.

Due to their long lifespan, high safety, and rechargeable characteristics, flow batteries are suitable for the energy storage needs of intermittent renewable sources such as wind and solar power. They can balance grid loads, reduce reliance on fossil fuels, thereby lowering carbon emissions, and promote the widespread application of renewable energy.

Flow Batteries vs. Lithium-Ion Batteries – Safety Comparison

Safety:

Flow batteries are non-flammable and non-explosive, with no risk of thermal runaway, making them suitable for use in cities or densely populated areas. In contrast, lithium-ion batteries face the risk of thermal runaway, which may lead to fire, posing significant challenges in application scenarios that require high safety standards.

Flexibility of Storage Capacity:

Flow batteries can flexibly adjust storage capacity and system power by adding more electrolyte tanks and electrolyte, meeting the needs of different application scenarios.

Long Lifespan:

The electrodes of flow batteries do not undergo changes during cycling, giving them a cycle life of more than 20,000 times and a service life exceeding 20 years, far surpassing the 7 to 10 years of lithium-ion batteries.

Green, Eco-Friendly, and Recyclable:

Vanadium electrolytes can be reused and have a low carbon footprint, making them one of the most environmentally friendly energy storage options on the market. In comparison, lithium-ion batteries face greater challenges due to the short supply of lithium resources and high recycling costs.

Long-Term Cost Advantage:

Although the initial cost of flow batteries is high, as the storage duration increases the unit cost of long-duration storage drops significantly, ultimately resulting in a lower average cost.

The Role of Long-Duration Energy Storage

In the current grid context, short-term frequency regulation and voltage stabilization mainly rely on lithium-ion batteries. However, with the increasing proportion of renewable energy such as solar and wind power, the importance of long-duration energy storage technologies is becoming more prominent. They can store electricity when renewable energy supply is insufficient and release it during peak demand, helping to replace traditional energy sources and achieve net-zero carbon emissions. Flow batteries can store solar power generated during the day and supply it at night, enhancing grid stability and promoting renewable energy development.

Future Outlook

On July 12, 2024 (Year 113 of the Republic of China calendar), Microcosm Technology joined the “Industry-Academia Alliance for Key Technologies and Applications of Flow Batteries.” The alliance is convened by Professor Chen-Hao WANG, Associate Dean of the Department of Materials Science and Engineering at National Taiwan University of Science and Technology, and co-led by several leading domestic scholars and experts. Its goal is to promote professional collaboration between enterprises and research institutions, accelerate the adoption and application of flow battery technologies, and advance the development of Taiwan’s energy storage industry.

Microcosm Technology will continue to strengthen its R&D capabilities, providing more innovative solutions tailored to market needs, and promoting the sustainable development of energy projects. Through technological innovation, we are committed to supporting global carbon reduction goals and creating a more environmentally friendly and sustainable future.

4.04 Greenhouse Gas (GHG) Emissions Management

Microcosm Technology is committed to promoting effective management and reduction of greenhouse gas (GHG) emissions, and has established concrete strategies and targets.

In 2024, the company conducted its first GHG emissions inventory, designating the results as the baseline year for carbon management. This inventory covered only the Taiwan headquarters facilities, with the boundary defined based on the principle of 100% operational control. It disclosed organizational boundaries limited to the Taiwan site, excluding the Suzhou operations. Going forward, the company plans to gradually expand the inventory scope to include other sites for comprehensive GHG management and disclosure.

Future investments will be directed toward enhancing energy efficiency, adopting renewable energy, and optimizing production processes, with the goal of progressively reducing GHG emissions.

2024 Microcosm Technology Sustainability Report

Major Issues	Climate Change and Greenhouse Gas Management
Policy / Commitment	Conduct annual GHG emissions inventories in accordance with ISO 14064-1 and domestic regulations, ensuring accurate tracking of direct and indirect emissions (Scope 1 and Scope 2). Use this data as the foundation for carbon management and reduction planning, and progressively implement energy-saving and carbon-reduction measures toward achieving net-zero emissions by 2050.
Core Objectives	<ul style="list-style-type: none">● Complete annual Scope 1 and Scope 2 GHG emissions inventories.
2024 Performance Results	<ul style="list-style-type: none">● Successfully completed the 2023 GHG inventory (covering Scope1 and Scope2).● Incorporated results into ESG/Sustainability reporting to ensure transparency.
Action Plans	<ul style="list-style-type: none">● Conduct annual in-house GHG inventories to progressively build a solid data foundation.● Launch energy efficiency optimization programs (lighting system upgrades, process efficiency improvements, equipment replacement).
Evaluation Mechanisms	<ul style="list-style-type: none">● Annual GHG inventory reports.● Inclusion in ESG or Sustainability Reports.● Management review and continuous improvement mechanisms.

Feedback Mechanisms

- Collect feedback from stakeholders (customers, supply chain partners, investors) on carbon management to inform annual strategy adjustments.
- Integrate results into ESG or Sustainability Reports.

2025 Targets

- Complete and disclose the 2024 GHG inventory.
- Initiate and track the effectiveness of at least one energy efficiency optimization project.
- Plan to expand the inventory boundary in 2025 to include subsidiaries, and progressively establish a carbon reduction roadmap.

Greenhouse Gas (GHG) Emissions and Impacts

According to the Intergovernmental Panel on Climate Change (IPCC), greenhouse gases (GHGs) have already caused global average temperatures to rise by more than 1°C, leading to frequent extreme weather events and exposing the global economy and society to significant risks. To limit global warming to within 1.5°C, achieving net-zero emissions by 2050 has become a global consensus and target. In response, countries around the world have introduced carbon management policies, such as Taiwan's planned carbon fee in 2025, the EU's Carbon Border Adjustment Mechanism (CBAM), and the U.S. CCA carbon tax.

Microcosm Technology is actively aligning with Taiwan's "Sustainability Roadmap for Listed Companies," initiating phased GHG inventories to track its emissions profile and establish the foundation for future reduction actions.

Emission Calculation Methods and Tools

This GHG inventory was conducted in accordance with ISO 14064 standards and the Ministry of Environment's "Guidelines for Greenhouse Gas Emissions Inventories." It covers the seven Kyoto Protocol greenhouse gases: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulfur hexafluoride (SF₆), Nitrogen trifluoride (NF₃). All fuels used under Scope1 and Scope2 contain no biomass content.

Parameters and Data Sources:

- Emission factors: Ministry of Environment, "GHG Emission Factors Management Table, Version 6.0.4"
- Global Warming Potentials (GWP): IPCC Fifth Assessment Report (AR6, 2021)
- Electricity emission factor: Bureau of Energy, Ministry of Economic Affairs (2023) — 0.474 kg CO₂e/kWh

2024 Microcosm Technology Sustainability Report

2024 GHG Inventory Results:

Year	Category	Taiwan Plant (tCO ₂ e/year)	Output Value (NT\$'000)	GHG Intensity (tCO ₂ e/NT\$'000)
2024	Scope 1	257.4748	81,704	0.0032
2024	Scope 2	1,263.1664	81,704	0.0155
2024	Total	1,520.641	81,704	0.0186

Microcosm Technology's total GHG emissions for 2024 amounted to 1,520.641 tCO₂e, consisting of:

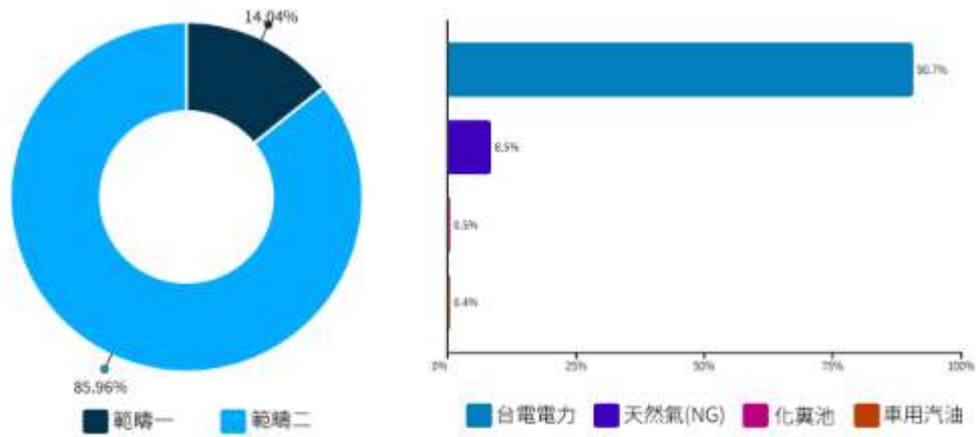
- Scope 1 (Direct emissions): 257.4748 tCO₂e (16.66% of total)
- Scope 2 (Indirect emissions from purchased energy): 1,263.1664 tCO₂e (83.34% of total)

Emission Source Analysis:

- Scope 1 emissions primarily come from natural gas combustion and fuel consumption of company vehicles.
- Scope 2 emissions mainly come from electricity consumption during operations.

Currently, Microcosm has not yet initiated a Scope 3 (other indirect emissions) inventory. However, this has already been included in the company's medium- and long-term plans. Going forward, Scope 3 disclosures will be progressively expanded based on data availability, in line with global carbon disclosure trends and sustainability transparency requirements.

Plant-wide Emissions Distribution:



4.05 Energy Management

Microcosm Technology is committed to improving energy efficiency and promoting sustainable development through energy use policies and conservation measures.

Energy Use Policy

In response to international trends in climate change and energy efficiency improvement, the core elements of Microcosm Technology's energy use policy include:

- **Energy Conservation Priority:** Select high-efficiency equipment and lighting, and reduce unnecessary energy consumption.
- **Energy Monitoring:** Regularly track electricity and fuel usage to ensure data transparency.
- **Employee Participation:** Promote energy-saving awareness and encourage employees to take part in energy-saving actions.
- **Continuous Improvement:** Review energy performance annually and set consumption reduction targets.
- **Renewable Energy Introduction:** Continue to promote green energy development. A 100kW solar power system has already been installed (Note: feed-in tariff), and an additional 300kW solar system is planned for 2025 for self-consumption, aiming to reduce reliance on traditional energy sources and carbon emissions.

Implementation Measures of the Energy Policy

1. Process and Operation Optimization

- Regularly review the energy efficiency of production processes, adjust parameters and operational logic, and reduce unnecessary energy consumption.
- Prioritize energy-saving improvements for equipment such as air conditioning, lighting, vacuum systems, ovens, and air compressors.

2. Procurement and Equipment Upgrades

- Give priority to new equipment with energy-saving labels or high-efficiency ratings.
- Gradually replace old energy-consuming equipment and introduce automation and energy-saving control systems based on process requirements.

3. Compliance with Regulations and External Requirements

- Comply with government energy-saving policies and relevant energy regulations, cooperate with power consumption audits, reporting, and improvement plans.
- Respond to energy disclosure requirements under external ESG frameworks such as TCFD.

4. Employee Education and Behavior Management

- Conduct energy-saving training and awareness campaigns to improve employee awareness of energy conservation.
- Promote daily energy-saving practices such as “turn off the lights,” “shut down equipment,” and “save electricity.” Encourage employees to proactively provide energy-saving suggestions to accumulate improvement momentum.

5. Continuous Improvement and Internal Audits

Conduct annual reviews of energy usage and evaluate the effectiveness of improvements.

2024 Microcosm Technology Sustainability Report

Energy Usage

In 2024, Microcosm Technology's total energy consumption amounted to 11,765.96 GJ, with the majority coming from electricity (9,593.67 GJ, approximately 82%), which was mainly used for manufacturing, lighting, and air conditioning. The next largest sources were natural gas (2,104.37 GJ) and gasoline for vehicles (67.93 GJ). Diesel was not used. The detailed energy consumption is as follows:

Item	Unit	Energy Consumption	Converted Heat Value (GJ)
Electricity (non-renewable)	kWh	2,664,908	9,593.67
Gasoline for vehicles	Liter (L)	10,484.7962	334.02
Diesel	Liter (L)	0	0.00
Natural Gas	m ³	62,827.4194	2,104.37
Total	—	—	12,032.05

Notes:

Energy consumption = fuel usage × fuel calorific value; calorific value factors are based on the Bureau of Energy's Unit Heat Value Table for Energy Products. Energy intensity is expressed in GJ per metric ton of production. Solar power sold in 2024 was 432.75 GJ.

Since 2024 marked the company's first full-scale energy inventory, Microcosm Technology is currently unable to provide year-over-year comparisons of energy consumption or actual energy-saving performance. Nevertheless, the company has already established an energy use policy and implemented energy-saving measures.

Additionally, in 2024, the company initiated preliminary planning for installing rooftop solar panels for in-plant self-consumption. This is expected to reduce dependence on purchased electricity and advance the use of renewable energy, serving as the starting point for the company's energy transition and low-carbon operations.

Microcosm Technology commits to incorporating energy efficiency performance into its key operational indicators, progressively institutionalizing energy management, and continuously disclosing performance and benefits related to energy conservation.

4.06 Water Resource Management – Water Usage

Water usage

The company is located in the Tainan Science Park, Tainan City. According to the World Resources Institute (WRI) Aqueduct Water Risk Atlas, the region is categorized as low-to-medium water stress (10–20%). The main water source is tap water, entirely supplied by the Southern Taiwan Science Park (STSP) water system. No groundwater or other water sources are utilized, and thus, the company does not cause significant competition for local water resources. There is also no notable resource conflict or interaction with other water users in the area.

The wastewater generated by Microcosm Technology primarily consists of domestic sewage, which is managed in accordance with the “Regulations Governing the Use of Wastewater Treatment and Sewer Systems in Science Parks.” All wastewater is discharged into the Southern Taiwan Science Park sewer system. The Science Park Administration conducts unscheduled sampling inspections at the plant’s discharge outlets to test whether effluent quality complies with discharge standards, thereby ensuring regulatory compliance.

2024 Microcosm Technology Sustainability Report

All wastewater entering the sewer system is sent to the STSP wastewater treatment plant, where it is treated to meet effluent standards before being discharged. In 2024, Microcosm Technology had no cases of non-compliant discharge, ensuring that its operations posed no negative environmental impact.

Water Withdrawal

All of Microcosm Technology's water usage comes from the tap water system supplied by the Tainan Science Park. The company's water withdrawal for the past two years (2023–2024) is shown below (Unit: million liters):

Category	2024	2023
Surface Water	15.490	18.000
Groundwater	0	0
Seawater	0	0
Produced Water	0	0
Total Withdrawal	15.490	18.000

Notes:

1. Surface water withdrawal is calculated based on the aggregation of water utility bills.
2. All water sources are classified as freshwater.

Water Discharge

The company’s water consumption is mainly for process operations and domestic use. Except for the portion lost through evaporation or carried out in products, the remainder is discharged into the wastewater treatment system. The estimated discharge volume in 2024 was 8.022 million liters.

Category	2024	2023
Surface Water	8.022	10.028
Groundwater	0	0
Seawater	0	0
Water to Third Parties	0	0
Total Withdrawal	8.022	10.028

Note:

1. Total water consumption = Total withdrawal – Total discharge.
2. In 2024, total water consumption was 7.468 million liters.

4.07 Waste Management

The waste generated by Microcosm Technology primarily originates from business activities and the production process. Waste from general business operations does not cause significant impacts on the environment, society, or human health. Since the company's establishment, there have been no incidents of severe waste or hazardous material leakage.

In compliance with the Waste Disposal Act and the regulations of the Southern Taiwan Science Park (STSP), the company has established a comprehensive waste management system. This system implements classification, storage, removal, and disposal processes according to its Waste Management Plan. All waste is collected and processed by licensed professional recycling and disposal contractors, with no cross-border transportation of hazardous waste involved.

If not properly managed, waste may pollute the natural environment (e.g., soil or water contamination) or cause resource inefficiencies, potentially affecting both the Science Park environment and surrounding communities. Therefore, the company places great emphasis on waste reduction at source and proper treatment, ensuring that all waste is handled by qualified entities. Regular follow-up audits are conducted to confirm that final disposal complies with legal and safety requirements.

Waste Management Measures

Microcosm Technology implements the following measures to minimize the impacts of waste:

- Execute waste classification and removal in accordance with the contract established with the STSP Administration and the Resource Recycling Center.
- Domestic waste is collected weekly by the appointed sanitation unit to maintain plant cleanliness.
- General industrial waste and hazardous industrial waste are accumulated by volume, and collection is arranged by on-site managers through the Resource Recycling Center.
- All industrial waste is entrusted to licensed third-party professional organizations. Contracts explicitly require valid disposal permits and qualified technical personnel to ensure compliance with regulations.
- Recyclable waste is sent to the Resource Recycling Center for reuse, while non-recyclable or hazardous waste is legally disposed of through incineration or landfill. The company does not conduct direct disposal on its own.

Waste Generation Situation

The main sources of the company's waste are general waste generated from employees' daily activities and general and hazardous industrial waste generated from production processes.

In 2024, the total waste generated at Microcosm Technology's STSP Plant amounted to 71.198 metric tons, of which general industrial waste was 25.63 metric tons and hazardous industrial waste was 45.568 metric tons.

2024 Microcosm Technology Sustainability Report

Item	Unit	2023	2024	Reduction	Reduction Rate (%)
General Industrial Waste	metric tons	39.814	25.63	-14.184	-35.63%
Hazardous Industrial Waste	metric tons	60.79	45.568	-15.222	-25.03%

Compared with 2023, the overall waste generation in 2024 showed a significant decrease. This improvement is primarily attributed to the lower production yield in 2023 caused by raw material quality issues, which resulted in higher waste generation. To address this problem, the company implemented the following measures starting in 2023:

- Strengthened cooperation mechanisms with suppliers to optimize raw material quality management.
- Included raw material quality as a key point in supplier audits to improve the stability of production inputs.
- Actively coordinated with suppliers to ensure that raw materials meet production specifications, reducing waste generation at the source.

Looking forward, Microcosm Technology will continue to promote the following strategies to strengthen waste management:

- Optimize internal waste classification processes to increase the proportion of recyclable materials.
- Promote source reduction and improve production efficiency to minimize unnecessary losses.
- Continuously introduce recycling and reuse equipment to promote the resource utilization of waste.
- Strengthen company-wide awareness of waste reduction and resource circulation through education, training, and supply chain collaboration.

05. Social Participation

5.01 Human Resource Development

Human Rights and Commitment

In order to fulfill the corporate social responsibilities and basic human rights of employee, Microcosm complies with international labor standards, law and regulations in the country of operation, such as 《DUDH》、《Global Compact》、《ILO》 and 《RBA》.

Discrimination and the use of child labor are prohibited as well as non-voluntary labor services. Microcosm ensures to provide gender equality, safety and health environment in workplace. Moreover, the freedom of association and an open communication with employees are expanded as diverse communication channels. An assessment is performed to identify human rights issues through regulatory-compliant self-assessments in factory. Microcosm is committed to fulfilling and promoting the policy of human rights internally. In response to ESG development trends and sustainabilities, the assessments of our suppliers or collaborate partners are evaluated in audits.

Preventing approaches for Negative Impact on Human Right

Microcosm strictly complies with the law of Labor Standards Act, Employment Services Act and International Human Conventions to prevent the negative impacts on the collaborate operation and supply chain. We create the equal and friendly environment with respect and integrity in workplace. Discrimination, racism, sexual harassment and religion are prohibited during the recruitment and daily task. Ensuring the equal compensations, promotions and training opportunities, any labor enforcements and overtime works are not allowed.

Microcosm strictly prohibits the employment of individuals under the age of 16 and assigning hazardous or illegal work to the employees under the age of 18. We have reviewed all employment contracts to avoid any mistakes. Moreover, we conduct identification check and ages during recruitment process to prevent any violations.

In addition, Microcosm places great importance on the social responsibility of its supply chain. All suppliers are required to comply with local labor laws and international human rights standards, and to commit to not employing child labor or engaging in inappropriate labor practices. As of 2024, no suppliers were found to be involved in child labor. Although there is no actual employment risk, the company has established a “Child Labor Remediation Policy”. If child labor is discovered in the future, the company will immediately take the following actions:

2024 Microcosm Technology Sustainability Report

- Remove the child from the workplace and arrange a labor health check-up.
- If any health issues are detected, the company will cover all medical expenses and living support.
- Assist in notifying the family and arrange transportation and care for the child to return home.
- Simultaneously initiate internal personnel procedures and implement educational improvements.

Ensuring the benefits and rights of employment, Microcosm holds the labor conferences quarterly to obtain feedbacks and opinions from employees. With commitment to respect and integrity, Microcosm aims to build a workplace with sustainable development and human values.

Structure of Human Resource

Employee Structure

Contract Type/ Gender	Female	Male	Total	Female Ratio (%)	Male Ratio (%)
Regular Employees	23	43	66	34.85%	65.15%
Temporary Employees	0	0	0	0.00%	0.00%
Full-time Employees	23	43	66	34.85%	65.15%
Part-time Employees	0	0	0	0.00%	0.00%
Total Employees	23	43	66	34.85%	65.15%

Notes:

1. Regular employees are those who have signed indefinite-term contracts (continuous employment).
2. Temporary employees are those who have signed fixed-term contracts (temporary, short-term, seasonal, or project-specific work).
3. Full-time employees are those whose monthly working hours comply with the national labor laws regarding standard work hours.
4. Part-time employees are those whose weekly, monthly, or yearly working hours are less than those of full-time employees.
5. Employee numbers are based on the statistics of the last day of the year.

Non-Employee Structure

Worker Type	Contract Relationship	Total Workers
On-site Staff	Contractor	0
Security Personnel	Contractor	2
Total Non-Employee Workers	-	2

Notes:

On-site staffs include personnel such as IT staff, warehouse management staff, and customs personnel.

Diversity, Inclusion, and Equality in the Workplace

Microcosm Technology values workplace diversity and inclusion, striving to create a gender-equal and culturally diverse work environment. In recruitment and employment, the company upholds principles of fairness, ensuring that no discrimination occurs based on nationality, race, gender, age, religion, or other factors. The company also continuously promotes an “Equal Pay for Equal Work” policy, ensuring that male and female employees receive consistent compensation for the same position and level.

As of the end of 2024, the company had a total of 66 regular employees. Observing the gender and age distribution, approximately 77% are male and 23% are female. This distribution reflects the technical intensity of the industry and the operational demands of the manufacturing site, which results in a higher proportion of male employees. Among management personnel, 66.67% are male and 33.33% are female.

2024 Microcosm Technology Sustainability Report

2024 Employee Structure

Item	Under 30	30-50	Over 51	Total
Management – Male	0	6	6	12
Management – Female	0	4	2	6
Management Total				18
Non-Management – Male	5	23	3	31
Non-Management – Female	9	6	2	17
Non-Management Total				48
Regular Employees Total				66

To enhance workplace diversity and gender equality, the company will continue to optimize recruitment processes, encourage female participation in technology and manufacturing fields, and foster a gender-friendly working environment to promote diverse talent development.

Proportion of Local Residents in Senior Management

Microcosm Technology defines senior management as the core management team responsible for departmental decision-making and organizational operations management. In 2024, covering the ESG reporting scope of Taiwan operations, the company had 18 senior managers, of which 17 are Taiwanese nationals and 1 is non-Taiwanese. Therefore, the localization rate of senior management at Taiwan operations is 94%.

The company places great importance on professional competence and suitability in recruitment and employment, without imposing restrictions based on nationality. Microcosm Technology is committed to building a management team with multicultural backgrounds and a global perspective while respecting local cultures and market characteristics, promoting the development and advancement of local talent.

The company's overall employee compensation structure is planned and managed based on job responsibilities, professional skills and knowledge, competencies, and performance, without discrimination based on gender or any other factor that may infringe on human rights. Salaries are periodically reviewed to ensure internal fairness and external competitiveness. Microcosm Technology's employee compensation mainly includes: 1. Base salary, which covers basic pay, meal allowances, and environmental/position/management allowances. 2. Year-end bonuses.

Salaries are based on a responsibility-based system, determined according to market salary trends, the company's financial status, and organizational structure, while ensuring gender equality. For employees at the same position and years of service, the base salary ratio between female and male employees is 1:1.

Entry-Level Salary Compared to Local Minimum Wage

Gender	Taiwan
Male	1.1
Female	1.11

Notes:

1. The above figures include all fixed compensation but exclude overtime pay, emergency or on-call allowances, sales commissions, shift allowances, meal subsidies, and variable performance bonuses.
2. Minimum wage ratio = individual salary / government-announced minimum wage.

Base Salary Ratio by Gender

In 2023, the base salary of entry-level female employees relative to male employees was 1:1, reflecting the company's commitment to gender pay equity.

Whistleblowing Channels and Protection Mechanisms

We have established a transparent and confidential whistleblowing system for employees and stakeholders to report human rights-related issues or improper conduct. Reports are handled by a dedicated unit, ensuring strict protection of the whistleblower's identity and conducting fair and thorough investigations. If violations are found, they will be addressed in accordance with the law. Additionally, we commit to:

- Whistleblowers will not face any form of retaliation or adverse treatment.
- Annual human rights monitoring: Conducting yearly human rights risk assessments and supervision to ensure effective implementation and continuous improvement.

In 2024, Microcosm Technology received no complaints and had no human rights violations, and will continue to promote transparency and tracking of human rights policies to ensure ongoing protection and improvement.

Sexual Harassment Prevention

The company is committed to creating a safe and respectful work environment, providing employees, job applicants, and service recipients with a workplace and service environment free from sexual harassment. In accordance with Article 13, Paragraph 1 of the Gender Equality in Employment Act and the Ministry of Labor's Guidelines for Sexual Harassment Prevention in the Workplace, the company has established the "Sexual Harassment Prevention, Complaint, and Disciplinary Measures" policy to protect the rights and privacy of all parties involved.

The policy clearly defines the scope of sexual harassment, establishes a Sexual Harassment Complaint Committee, and provides mechanisms for reporting and remedy. The company ensures that all complaint cases are handled confidentially, safeguarding the privacy of the individuals involved. A dedicated complaint hotline and email address has been established, and information about the process is prominently displayed in the workplace.

To further prevent sexual harassment, the company conducts regular employee training on sexual harassment prevention, fostering awareness and creating a harmonious workplace. In 2024, no incidents of sexual harassment occurred.

Employee Welfare and Care

Microcosm Technology believes that employees are the core to sustainable business operations. Guided by the principles of Professionalism, Collaboration, Innovation, and Excellence, the company is committed to creating a stable, high-performing, inclusive, and safe workplace. The company provides: 1. Competitive compensation and benefits aligned with the market. 2. Comprehensive training and career development programs. 3. Fair and transparent performance evaluation and promotion mechanisms. 4. Open channels for labor-management communication. Through clear human rights policies, rigorous occupational safety measures, and diverse employee activities, Microcosm ensures that employees can achieve work-life balance while attaining professional growth and personal fulfillment.

Microcosm Technology has established an Employee Welfare Committee (hereinafter referred to as the Welfare Committee) that carefully plans various activities and continuously improves company welfare facilities each year. The purpose is to ensure employees can work happily and without worries, boost morale, enhance their sense of belonging, and achieve work-life harmony.

Parental Leave

Microcosm Technology is committed to helping employees balance career development and family care. In accordance with the Labor Standards Act and the Gender Equality in Employment Act, the company has established a parental leave system, allowing eligible employees to apply for parental leave before their child reaches three years of age, ensuring peace of mind in childcare. In addition to government policies, the company provides extra incentives to encourage employees in raising their children.

The company assists employees in returning to their original units and positions after the leave period and provides necessary support to help them smoothly reintegrate into the workplace and continue their career development. In 2024, 2 employees (1 male, 1 female) applied for parental leave. The number of employees scheduled to return during the year was 1, and the actual number of employees who returned was also 1, achieving a 100% return-to-work rate.

2024 Microcosm Technology Sustainability Report

2024 Parental Leave Return and Retention

Gender	Male	Female	Total
Eligible for parental leave (A)	1	1	2
Actual applications for parental leave (B)	1	1	2
Scheduled to return this year (C)	0	1	1
Actual return this year (D)	0	1	1
Previous year actual return (E)	N/A	N/A	
Continued employment for 1 year after return (F)	N/A	N/A	
Return-to-work rate ^o / _o (D/C)		100 ^o / _o	
Retention rate ^o / _o after 1 year (F/E)		N/A	

Defined Benefit and Other Retirement Plans

Microcosm Technology provides retirement protection to employees in accordance with the law. In compliance with the Labor Standards Act and the Labor Pension Act, the company distinguishes between two systems: the old system (Defined Benefit, DB) and the new system (Defined Contribution, DC).

1. Old System (Defined Benefit, DB)

The company has established a retirement plan in accordance with the Labor Standards Act. This plan applies to regular employees hired before July 1, 2005, who chose to continue under the old system. The retirement benefits are calculated based on the average salary of the six months prior to retirement and the employee's years of service. The specific calculation is as follows:

- Service years ≤ 15 : 2 units per year of service.
- Service years > 15 : 1 unit per year of service beyond 15 years.
- Maximum accumulated units: 45 units.

To ensure stable execution of retirement benefits, the company annually evaluates the contribution amount and has established a Labor Pension Reserve Supervisory Committee, which opens a dedicated account at Bank of Taiwan to hold the funds.

2. New System (Defined Contribution, DC)

Effective July 1, 2005, employees subject to the Labor Pension Act are covered under the defined contribution system. The company contributes 6% of the employee's total monthly salary to the employee's personal pension account. The company also retains a record of the employee's years of service under the old system for reference and continuity.

Health Promotion

To fulfill our corporate social responsibility (CSR) and commitment to sustainable development, Microcosm Technology upholds the philosophy that “employee health is the foundation of corporate sustainability”. The company actively promotes health-friendly workplace policies and is committed to creating a safe, supportive, and friendly working environment. We recognize that the health and well-being of employees is the cornerstone of corporate success. A healthy workplace is not only a commitment to our colleagues but also a key pillar for the company’s sustainable growth.

As company management, I deeply understand the importance of a healthy workplace and solemnly commit to leading by example, continuously promoting and implementing health-related policies, and integrating employee health into the core of corporate operations. Through institutionalized initiatives and comprehensive support, we strive to:

1. Create a safe and healthy work environment: Gradually improve the physical and psychological conditions of the workplace, reduce occupational risks, and ensure the basic safety of every employee.
2. Promote physical and mental health and work-life balance: Provide health check-ups and health promotion resources, encourage employees to pay attention to their personal well-being, and balance work with quality of life.
3. Cultivate a positive health culture: Utilize the company as a platform to promote health-related activities and education, establishing a top-down, company-wide participatory health culture.
4. Listen and continuously improve: Strengthen communication and feedback mechanisms with employees, regularly review implementation effectiveness, and continuously optimize measures according to employee needs and company resources.

We will work pragmatically and collaboratively with all colleagues to progressively achieve a healthy workplace, fulfill our CSR obligations, and uphold our ESG and sustainability commitments. We also encourage every employee to actively participate and contribute to creating a healthier and more vibrant working environment.

— General Manager, Huang Tang-Chieh

Workplace Health Promotion Strategies and Actions

Microcosm is committed to the physical and mental well-being of employees, actively promoting a culture of health and safety, creating a safe working environment, and helping employees achieve work-life balance. Referring to the World Health Organization (WHO) 2010 “Global Model for Workplace Health Promotion”, Microcosm promotes workplace health across four key dimensions “Physical Work Environment”, “Social and Psychological Work Environment”, “Individual Health Resources”, “Corporate and Community Engagement”. Leadership commitment and employee participation are treated as core values underpinning all initiatives.



The company follows eight steps—Initiation, Integration, Needs Assessment, Prioritization, Planning, Implementation, Evaluation, and Improvement—to continuously enhance the health promotion process. Key actions include:

1. Health Check-ups and Resource Provision:

Annual free health check-ups exceeding regulatory requirements are provided to all employees, helping them understand their health status, with follow-up health consultations and resources available.

2. Occupational Disease Prevention and Risk Control:

Preventive and corrective measures are implemented for physical, chemical, ergonomic, biological hazards, overwork, and maternal health risks.

3. Monitoring and Support for Abnormal Health Conditions:

On-site physician services, health guidance, and targeted support for high-risk groups are provided to detect and address health abnormalities early.

4. Building a Health Culture and Employee Participation:

Employees are encouraged to actively participate in various health promotion activities, strengthening health awareness and fostering a positive workplace environment.

Through systematic and sustainable workplace health promotion strategies, Microcosm continuously safeguards employee health, implements a people-centered management philosophy, and fosters a more resilient and happy corporate culture.

Workplace health promotion at Microcosm is overseen by the Employee & Society Subgroup, which operates under the Sustainability and Risk Management Committee. This subgroup is led by the head of the Management Department and includes a cross-departmental team of non-management employees to implement initiatives collaboratively. Each year, the company collects feedback through internal surveys to adjust strategies, enhance employee engagement, and ensure that health promotion measures meet practical needs.

The health promotion strategy also aligns with the United Nations Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being) and SDG 8 (Decent Work and Economic Growth). By improving employee health and workplace quality, Microcosm fulfills its commitment to sustainable development.

Moreover, the company discloses annual health promotion activities and participation data in its sustainability report to strengthen stakeholder communication and transparency. Through long-term investment and institutionalized management, Microcosm continues to deepen a healthy workplace culture, creating sustainable value for both the company and its employees.

2024 Microcosm Technology Sustainability Report

2024 Health Promotion Activities

Activity Name	Participation	Description	Health Promotion Logic	Workplace Health Objective
On-site Health Consultation	27	Provides professional consultations on physical and mental health to help identify and address health issues early.	Understand employee health needs through clinical and health consultations.	Enhance health literacy and enable early intervention and disease prevention.
Xitou Hiking & Walking	64	Encourages outdoor exercise to improve physical health and peer interaction.	Increase engagement through well-planned, attractive activities.	Increase physical activity and establish exercise habits.
Stress-Relief Yoga (Relaxation & Hatha Yoga)	40	Combines breathing guidance, mindfulness, and physical stretching to promote relaxation and stress relief.	Integrates mind-body techniques to improve stress management.	Promote mental health and reduce stress and anxiety.
Self-EQ & Workplace Stress Adjustment Course	20	Provides education to enhance emotional regulation and stress coping skills.	Strengthen employees' psychological resilience and EQ abilities.	Promote mental well-being and happiness; reduce health issues caused by workplace stress.
Violence Prevention Education Course	39	Provides education to prevent workplace violence and raise awareness of self-protection.	Reduce potential psychological and physical risks in the work environment.	Build a safe and friendly workplace; lower the incidence of workplace violations or harm.

Activity: Chimei Foods “Happy Factory” Tour & DIY Workshop

Participants: Microcosm employees and their family members

Participants joined a guided tour of Chimei Foods’ factory to learn about the food production process, raw material sourcing, and food safety. The activity provided employees and their family members with an opportunity to gain professional knowledge about the food manufacturing industry.

During the DIY workshop, participants experienced the hands-on process of making pineapple cakes, which fostered creativity, practical skills, and a sense of accomplishment. The activity also served as a valuable opportunity to enhance parent-child relationships and team collaboration, allowing participants to build connections in a relaxed and enjoyable atmosphere.

—2024.07.20, Chimei Foods “Happy Factory”

A total of 20 employees and their family members from Microcosm participated in this activity. The total duration of the event was 2 hours.



Qing Qing Tu Qi Studio – Summer Pottery Wheel Workshop

Participants: Microcosm employees and their family members

Microcosm organized a summer pottery wheel activity in collaboration with local Tainan ceramic artists, inviting employees to experience pottery creation. The event combined ceramic materials with modern art exhibitions, and through interactions with domestic and international creators, provided participants with a platform to explore the contemporary language of ceramic art. Under professional guidance, employees freely developed unique aesthetic works, enhancing creativity and artistic literacy while deepening their understanding of cultural heritage.

Pottery wheel and hand-building are art forms that require skill and patience. The creative process—tapping, molding, carving, and shaping—allows participants to focus on every detail, serving as an outlet for emotions and transforming daily suppressed feelings into creative energy. This helps relieve stress, enhances relaxation, and provides therapeutic benefits. By creating pottery with their own hands, participants not only experienced the joy of artistic creation but also stimulated creativity and inspiration. Whether beginners or experienced participants, everyone gained enjoyment and a sense of accomplishment, making it a rare and valuable experience.

—2024.08.24, Qing Qing Tu Qi Studio, Tainan

A total of 20 employees and their family members participated in this activity. The total duration of the event was 3 hours.



Collective Agreement

Microcosm has not yet established or joined any labor union organization; however, the company fully respects and safeguards employees' fundamental rights to freedom of association, collective bargaining, and the expression of opinions in accordance with the law. All employees sign labor contracts under the provisions of the Labor Standards Act, with a signing rate of 100%. Upholding the principle of integrity, the company regularly convenes labor-management meetings as a communication bridge to broadly collect employee opinions and promote two-way dialogue and consensus on matters such as working conditions, welfare systems, work environment, and related rights and benefits.

To protect employees' rights and ensure transparency and consistency in human resources management systems, the company has established multiple internal management regulations, such as the Work Rules, Resignation Management Procedures, Layoff Management Guidelines, and Retirement Management Procedures. These clearly define and explain various labor conditions and processes. All such systems comply with labor laws and regulations and provide corresponding notice periods and compensation measures based on employees' years of service, thereby safeguarding the legitimate rights of employees upon resignation or retirement.

In cases where business adjustments or organizational changes affect working conditions, the company will conduct prior assessments of potential impacts, convene labor-management meetings for negotiation in accordance with relevant laws, and provide required notice periods and necessary procedures under the Labor Standards Act. This ensures employees are fully informed and their rights reasonably protected.

The company's internal systems cover key issues of concern to employees, including wages, working hours, bonuses, occupational safety, welfare subsidies, and retirement regulations. These measures effectively stabilize labor relations and enhance labor protection. Looking ahead, the company will continue to monitor employee needs and changes in labor policies, reviewing and adjusting systems as appropriate to jointly build a work environment based on mutual respect and trust.

Talent Development and Training

Microcosm firmly believes that talent is the core asset for sustainable business operations. To enhance employees' professional capabilities, career development, and corporate competitiveness, the company is committed to fostering a culture of continuous learning, enabling employees to grow through their work while creating value for the organization.

In 2024, the average training hours per manager were 28.25 hours. Microcosm expects its managers to cultivate a workplace atmosphere that encourages continuous learning and to support their teams in participating in training and educational programs, thereby strengthening the overall learning culture of the company.

2024 Training Overview

Category	Managers		Non-managers	
	Male	Female	Male	Female
Total Employees (persons)	5	6	35	19
Total Training Hours (hrs)	140	171	883	472
Average Training Hours (hrs/person)	28	28.5	25.2	24.8
Training Expenses (NTD)	57,850	83,850	104,633	94,012

To help employees continuously improve their skills and adapt to different stages of their career development, Microcosm has designed diverse training and development initiatives, including:

- **New Employee Training:** Comprehensive onboarding programs covering corporate culture, occupational safety, quality systems, and job-related skills.
- **Professional Skills Enhancement:** Specialized courses tailored to departmental needs, such as material analysis, process management, and R&D project management.
- **Managerial Training:** Leadership, communication, and problem-solving courses designed for mid- to senior-level managers.
- **Job Rotation and Cross-Departmental Experience:** To develop multi-functional capabilities, employees are provided with flexible rotation opportunities based on job characteristics and team needs. Through job rotation, employees gain exposure to different departments, acquire core knowledge and skills across fields, and enhance organizational flexibility and competitiveness. The rotation system also stimulates innovative thinking, enabling employees to approach problems from diverse perspectives and deliver greater value in a rapidly changing market environment.
- **Sustainability Awareness Training:** Courses on energy saving and emissions reduction (e.g., electricity efficiency, carbon inventory basics, greenhouse gas management), human rights policy promotion, and sustainable supply chain management.

Training Methods

- **Internal Training:** Conducted by in-house personnel with professional knowledge and experience.
- **External Training:** Outsourced to professional training institutions or through employee participation in external public courses.
- **Online Learning:** Digital learning platforms provided for employees to learn autonomously.
- **OJT (On-the-Job Training):** Guidance and mentoring by supervisors or senior colleagues during actual work.
- **Job Rotation:** Developing diverse skills through rotation across different positions.
- **Project-Based Learning:** Gaining problem-solving capabilities through participation in practical projects.

Regular Performance and Career Development Review

In accordance with its internal performance management system, Microcosm conducts regular performance evaluations and career development interviews for all employees. In 2024, all full-time employees completed their annual performance reviews, covering aspects such as work results, competency demonstration, and learning effectiveness. The evaluation results also serve as the basis for the company's reward and compensation system, job adjustments, and development training programs.

5.02 Occupational Safety and Health

Microcosm has established and documented an Occupational Safety and Health (OSH) management system in accordance with the Occupational Safety and Health Act. Through the PDCA (Plan–Do–Check–Act) cycle—covering planning, implementation and operation, inspection and corrective actions, and management review—the company continuously strengthens risk control and ensures effective system implementation. The management system applies to all operational activities at the company’s headquarters located in the Tainan Science Park, and is governed by the Occupational Safety and Health Management Manual, which is reviewed and maintained by department heads to ensure its applicability, timeliness, and effectiveness.

The OSH system covers all regular employees in Taiwan, as well as certain contractors and outsourced personnel. All related personnel are required to undergo training and follow operational guidelines in compliance with the system’s requirements.

Risk Identification and Incident Investigation Management

The company has implemented a hazard identification and risk assessment system to evaluate existing and newly introduced operations, covering work environments, equipment operation, and emergency response procedures. According to the Hazard Identification and Assessment Management Procedure, updates and reviews are conducted annually and incorporated into safety and health objectives. In the event of an occupational safety incident, relevant departments investigate the root cause and formulate improvement plans under the Corrective and Preventive Action Procedure to prevent recurrence.

For high-risk operations, the company has enhanced process and facility controls. Within chemical processes and equipment operations, semiannual inspections are conducted on pipelines and equipment—focusing on valves, joints, and sealing components—to minimize the risk of hazardous substances and volatile organic compounds (VOCs) leakage. For the past three years, the VOCs leakage rate has remained 0%.

Year	Monitoring Points	VOCs Leakage Rate (%)
2022	548	0
2023	548	0
2024	548	0

Emergency Response Drills and Crisis Management

To strengthen emergency preparedness and improve employees' responsiveness during disaster scenarios, Microcosm has established a comprehensive disaster response management mechanism. Through regular drills and institutionalized management, the company ensures that incidents can be addressed swiftly and effectively when they occur.

1. Regular Drills and Emergency Response Practices

The company conducts at least two comprehensive emergency response drills annually, covering multiple potential scenarios such as fire, earthquake, and chemical spills. The drills include:

- **Theoretical training:** Strengthening employees' knowledge of response procedures, role assignments, and reporting mechanisms.
- **Practical field exercises:** Simulated real-life scenarios to enhance employees' ability to respond to sudden incidents and improve coordination efficiency.

The purpose of these drills is to cultivate employees' instinctive reactions to emergencies, ensuring rapid and effective responses that minimize the risk of injury and loss.

2. Emergency Plans and Continuous Improvement Mechanism

Microcosm has developed comprehensive emergency management plans tailored to different types of disasters, which are reviewed and refined annually to align with the latest regulations and practical experience.

- Fire Protection Plan (Firefighting Plan): Specifies emergency procedures, use of personal protective equipment (PPE), evacuation routes, and escape paths to ensure safe and timely evacuation in the event of a fire.
- Disaster Prevention Plan (Hazardous Materials Contingency Plan): Establishes a complete response mechanism for chemical or hazardous material leaks, including incident reporting, containment and isolation, emergency treatment, and pollution control, thereby minimizing the impact on personnel and the environment.

3. Integrated Emergency Management System

All emergency plans are incorporated into an integrated emergency management system. The company conducts regular cross-functional drills and systematic reviews to strengthen overall coordination in disaster response. Through institutionalized management and continuous improvement, Microcosm ensures the ability to respond swiftly during emergencies, reduce impacts on employee safety, the environment, and operations, and build a more resilient business system.

Occupational Injuries

Occupational Injuries and Occupational Diseases

In 2024, the company recorded a total of 122,844 working hours, during which four occupational injury cases occurred. Among them, three cases were traffic accidents that happened during employees' commuting time and were not related to actual work operations. The remaining case involved a minor hand laceration sustained during work. The injury was promptly treated in accordance with regulations, and no severe damage or disability resulted.

Meanwhile, in 2024, no cases of occupational disease were identified among employees. The company conducts regular annual health checkups, continuously monitoring the health status of employees engaged in high-risk operations. Based on the results of health examinations, appropriate medical assistance and follow-up care are provided.

To further enhance occupational safety, Microcosm has conducted a comprehensive review of the above incidents and, in line with the "Abnormality Correction and Prevention Procedure," developed corrective and preventive measures to optimize operating processes and on-site management. In addition, ongoing training and internal awareness campaigns are carried out to strengthen employees' safety awareness and reduce occupational risks.

2024 Microcosm Technology Sustainability Report

Upholding the goal of “Zero Accidents”, Microcosm promotes a culture of occupational safety through full employee participation, implementing preventive mechanisms from the source. The company is committed to building a safe, healthy, and friendly workplace environment to safeguard the occupational health and well-being of all employees.

2024 Occupational Injury Statistics

Year	Total Working Hours	Fatal Occupational Injuries	Serious Occupational Injuries (Note 4)	Recordable Occupational Injuries	Occupational Injury Fatality Rate	Serious Occupational Injury Rate (Excluding Fatalities)	Recordable Occupational Injury Rate
2024	121,488	0	0	4	0	0	6.51

Notes:

1. The Recordable Occupational Injury Rate (TRIR) is calculated as:
 $(\text{Recordable Occupational Injuries} \times 200,000 \text{ hours}) \div \text{Total Working Hours}$.
2. The Serious Occupational Injury Rate is calculated as: $(\text{Number of Serious Occupational Injuries} \div \text{Total Working Hours}) \times 1,000,000$ hours.
3. The company has not recorded total working hours for non-employees (e.g., contractors). In 2024, no occupational injuries involving non-employees occurred. In the future, Microcosm plans to establish a contractor management system to record the number of workers, working hours, and occupational injury cases within the plant.
4. The definition of a Serious Occupational Injury refers to injuries where employees are unable to fully recover (e.g., amputations) or are unable/unlikely to recover to pre-injury health conditions within six months (e.g., complicated fractures).

5.03 Social Engagement

Microcosm Charitable Trust: Rooted in Tainan, Advancing Education and Social Participation

Since its establishment in 2005, the Microcosm Charitable Trust has adhered to the core values of “Technology for Good, Giving Back to Society, and Nurturing the Future.” The Trust has been deeply engaged in education in Tainan, committed to narrowing the urban-rural education gap, and realizing the vision of “knowledge equity and cultivating talent from the ground up.”

Through close collaboration with elementary, junior high, and senior high schools in Tainan, the Trust continues to provide scholarships, activity funding, and various educational programs. These efforts inject creativity and hope into the community, ignite students' passion for learning, and support teachers in achieving instructional innovation. Ultimately, the Trust is dedicated to building a fair and opportunity-rich learning environment for the next generation in Tainan.

Over the past two decades, Microcosm has stepped into schools across Tainan, witnessing principals, teachers, and children transforming educational dreams into reality through dedication and enthusiasm. From offering scholarships and funding for school activities to supporting special clubs and cultural initiatives, every effort of the Trust goes beyond financial assistance—it represents a partnership with the local community to foster cultural sustainability. We firmly believe that real change begins with every child whose curiosity is sparked, every teacher who is supported, and every school that is empowered.

2024 Sustainability Achievements

In 2024, the Microcosm Charitable Trust continued to strengthen its commitment to education in Tainan. The Trust donated a total of NT\$250,000, supporting multiple schools in hosting special activities, benefiting a total of 344 students. These initiatives not only promoted students' holistic development but also enhanced their sense of cultural identity and social responsibility. Key highlights for 2024 include:

1. Campus Tee-Ball Tournament

Sponsored elementary and junior high schools to host engaging and safe tee-ball competitions, inspiring students' interest in sports, cultivating team spirit, and encouraging the development of regular exercise habits.

2. Percussion, Recorder, and Choir Clubs

Supported schools in hiring professional instructors to guide percussion, recorder, and choir clubs, enabling students to build confidence, teamwork, and artistic expression through music and performance.



3. Legal Awareness Club: Promoting Gender Equality and Rule of Law

Supported schools in inviting professional lecturers to educate students on topics such as gender equality, anti-bullying, and online safety. These sessions incorporated interactive simulations and group discussions, enabling students to understand their rights in a relaxed learning environment while fostering values of respect, inclusiveness, and social responsibility.

4. Character Education and Role Model Sharing

Funded schools to organize character education workshops and inspirational talks, inviting local leaders or outstanding alumni to share stories of perseverance and success. These activities not only motivated students to set personal goals but also strengthened their sense of connection to society.

Long-Term Impact of Social Engagement

The efforts of the Microcosm Charitable Trust extend far beyond financial contributions. Through educational empowerment, the Trust strives to create a lasting impact on social participation. Every activity supported by the Trust is designed to ignite students' passion for learning, promote their holistic development, and bring vitality to the Tainan community. From the sweat on the sports field, to the spotlight on artistic stages, and to moral guidance and legal education in the classroom, each initiative plants a seed of hope in the hearts of students.

Cultivating Change from Schools

The Microcosm Education Foundation believes that real educational transformation begins with every inspired child, supported teacher, and recognized school. The Foundation is not merely a donor—it is a long-term partner in the educational development of Tainan. From the laughter of tee-ball games to the insights gained in legal education, from the preservation of local culture to the nurturing of character education, every effort of the Foundation sows seeds of hope across Tainan.

Let hope begin in the South; let change blossom in schools. The Microcosm Charitable Trust will continue to work hand-in-hand with local schools and communities, leveraging the power of education to create a fairer, more inclusive, and infinitely promising future.

Supporting Local Agriculture

Since 2015, Microcosm Technology has actively supported local agriculture in Tainan by partnering with small farmers to procure high-quality Madou pomelos. As a specialty agricultural product of the region, Madou pomelos are renowned for their natural farming methods and superior quality. Each year, Microcosm shares these pomelos with both customers and employees. Through this collaborative model, the company helps small-scale farmers secure stable economic income. Microcosm aims to promote sustainable community development, achieving a win-win situation for the company, farmers, and society.

Tree Planting – Importance in Hillside Conservation Areas, Mudstone Badlands, and Chalky Soil Regions

Zuo Zhen District, located in southeastern Tainan, has approximately half of its area designated as hillside conservation zones, with over 75% consisting of mudstone badlands and chalky soil. The soil structure in this region is highly susceptible to water erosion and drought, primarily due to the high alkalinity (pH 8–9) and elevated levels of soluble ions, particularly sodium and magnesium, which weaken soil cohesion. When mudstone absorbs water, the soil softens, forming a paste-like surface, and uneven expansion rates cause soil peeling and cracking. Upon drying, further cracking occurs, allowing water to penetrate more easily, creating a vicious cycle that ultimately leads to severe soil loss and slope collapse.

In such fragile geological conditions, tree planting plays a critical environmental and ecological role. Tree roots stabilize the soil structure, preventing further erosion and reducing the risk of landslides and debris flows, especially during typhoons and heavy rainfall. Tree planting also enhances water retention, improves soil permeability, and is particularly important for watershed and water source protection areas. Additionally, trees contribute to ecological restoration, provide habitats for local wildlife, and help prevent sedimentation in streams caused by chalky soil erosion, promoting ecological balance and landscape greening.

Microcosm Technology has long been committed to Tainan and actively implements corporate social responsibility in the local community. On May 3, 2024, employees of Microcosm actively participated in a tree planting activity in the hillside conservation area of Zuo Zhen District. From digging soil, removing seedlings from pots, planting, to covering with soil, everyone worked together, sweating and cooperating, and successfully planted a total of 100 saplings, fulfilling the company's commitment to environmental sustainability and corporate social responsibility.

Tree Planting Activity – May 3, 2024



Participation in Industry Associations

Microcosm Technology maintains political neutrality and does not engage in political election activities, lobbying, or make any political donations in the company's name, while encouraging employees to fulfill their civic duties. In 2024, Microcosm Technology had no political donation expenditures. However, given the company's broad technology and product portfolio, Microcosm actively participates in relevant industry associations, technical alliances, and related activities to acquire the latest industry and technical knowledge, as well as to establish strong collaborations with companies and organizations in relevant fields, collectively promoting sustainable industry development.

Industry Associations, Membership Organizations, and National/International Advocacy Groups

Taiwan Printed Circuit Association (TPCA)

Semiconductor Equipment and Materials International (SEMI)

Tainan Science Industrial Park Association of Science Industry Peers

Industry-Academia Alliance for Key Technologies and Applications of Flow Batteries

Taiwan Computer Emergency Response Team/Coordination Center (TWCERT/CC)

Science Park Information Security Sharing and Analysis Center (SPISAC)

06. Appendix

Appendix 1: GRI Standards (GRI Guidelines) Cross-Reference Table

Usage Statement	This report is prepared in accordance with the GRI Standards, covering the period of 2024 (January 1, 2024 – December 31, 2024)		
GRI Used	GRI1: Foundation 2021		
Applicable GRI Sector Standards	N/A		
Indicator	Disclosure Item	Location (Corresponding Section)	Page
GRI 2: General Disclosures 2021			
2-1	Organizational details	About this report	2
2-2	Entities included in the sustainability report	About this report	2
2-3	Reporting period, frequency, and contact point	About this report	2

2024 Microcosm Technology Sustainability Report

2-3	Reporting period, frequency, and contact point	About this report	2
2-4	Restatements of information	About this report	2
2-5	External assurance/verification	About this report	2
2-6	Activities, value chain, and other business relationships	About Microcosm	6
2-7	Employees	Human Capital Development	77
2-8	Workers who are not employees	Human Capital Development	77
2-9	Governance structure and composition	Governance Organization	24
2-10	Nomination and selection of the highest governance body	Governance Organization	25
2-11	Chair of the highest governance body	Governance Organization	25
2-12	Role of the highest governance body in overseeing impact management	Governance Organization	24

2024 Microcosm Technology Sustainability Report

2-13	Responsibility for impact management	Governance Organization	24
2-14	Role of the highest governance body in sustainability reporting	Sustainability Promotion Mechanism	12
2-15	Conflicts of interest	Business Integrity	33
2-16	Communication of critical concerns	Governance Organization	31
2-17	Collective knowledge of the highest governance body	Governance Organization	29
2-18	Evaluation of the highest governance body's performance	Governance Organization	28
2-19	Remuneration policies	Governance Organization	30
2-20	Process for determining remuneration	Governance Organization	30
2-21	Annual total compensation ratio	Governance Organization	30
2-22	Statement on sustainable development strategy	Sustainability Policy	10

2024 Microcosm Technology Sustainability Report

2-23	Policy commitments	Sustainability Policy	10
2-24	Integration of policy commitments	Sustainability Policy	10
2-25	Processes to remediate negative impacts	Human Capital Development	77
2-26	Mechanisms for seeking advice and raising concerns	Business Integrity	34
2-27	Compliance with laws and regulations	Legal Compliance	41
2-28	Membership in associations	Participation in Associations	101
2-29	Stakeholder engagement approach	Stakeholder Engagement	14
2-30	Collective agreements	Human Capital Development	77
GRI 3: Material Topics 2021			
3-1	Process for determining major topics	Stakeholders and major Topics	18

2024 Microcosm Technology Sustainability Report

3-2	List of major topics	Stakeholders and major Topics	21
3-3	Management of major topics	Stakeholders and major Topics	21
	Customer Management and Services	Stakeholders and major Topics	44
	Product Quality and Safety	Stakeholders and major Topics	50
	Green Products	Stakeholders and major Topics	63
Corporate Governance			
GRI 3: Material Topics 2021	3-3 Management of major topics	Stakeholders and major Topics	21
GRI 2: General Disclosures	2-9~2-30	Governance Organization	24
GRI 205: Anti-Corruption 2016	205-1~205-3	Governance Organization	35

2024 Microcosm Technology Sustainability Report

Risk Management

GRI 3: Material Topics 2021	3-3 Management of material topics	Stakeholders and major Topics	21
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GRI 201: Economic Performance 2016	201-2 Financial impacts of climate change and other risks/opportunities	Risk & Internal Control	37
		Climate-Related Financial Disclosures (TCFD)	58

Climate Change & GHG Management

GRI 3: Material Topics 2021	3-3 Management of major topics	Stakeholders and major Topics	21
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GRI 305: Emissions 2021	305-1~305-6	GHG Emissions Management	67
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2024 Microcosm Technology Sustainability Report

Sustainability Disclosure Indicators — Electronics Components Industry Comparison Table

Indicator	Type	2024 Disclosure	Unit
Total energy consumption, percentage of purchased electricity, and renewable energy usage	Quantitative	Total energy consumption: 11,859 GJ. Percentage from grid: 100%. Purchased electricity: 100%. Renewable energy usage: 0% (Note: Company produces solar energy but sells it to Taiwan Power Company, not for internal use)	GJ, %
Total water withdrawal and total water consumption	Quantitative	Total water withdrawal: 15,490 m ³ ; Total water consumption: 8,842 m ³	m ³
Hazardous waste generated and recycling percentage	Quantitative	Total hazardous waste: 71.198 t; Hazardous waste recycling rate: 0%	t, %
Occupational injury categories, number, and rate	Quantitative	Deaths: 0; Major occupational accidents: 0; Recordable occupational injuries: 4 (traffic/hand cut); Recordable injury rate: 6.51%	%, count
Product lifecycle management disclosure: including discarded products and electronic waste weight and recycling percentage (Note 1)	Quantitative	Total waste: 0 t; Recycling rate: 0%	t, %

2024 Microcosm Technology Sustainability Report

Risk management related to critical materials usage	Qualitative	To ensure suppliers do not use conflict minerals, 11 major suppliers and critical raw material suppliers were audited in writing. In 2024, 100% of audited suppliers provided assurance of no conflict minerals used	N/A
Total monetary loss from legal cases related to anti-competitive practices	Quantitative	No cases occurred. Total monetary loss due to legal cases related to anti-competitive laws: NT\$ 0	NT\$
Main product output by category	Quantitative	Main products include 3-layer flexible copper-clad laminate (FCCL), protective film (CL), adhesive (BS), 2-layer non-adhesive substrates, functional polymer materials	Varies by product type

SASB Standards Mapping – Sustainability Accounting Standards Board (SASB) Standard: SASB – Hardware Industry Standard, 2023 Version

2024 Microcosm Technology Sustainability Report

Indicator No.	Topic Description	Report Content
<hr/>		
Product Security		
<hr/>		
TC-HW-230a.1	Describe methods to identify and manage product information security	<p>Microcosm Technology values product information security and ensures risk identification and response through a comprehensive management mechanism:</p> <ol style="list-style-type: none">1. Product information protection: Establish classification and access control for material formulations, process technologies, and key applications to prevent unauthorized access or leakage.2. Internal control measures: Implement tiered access management, limit access to confidential information, and regularly review information security strategies to comply with internal and regulatory requirements.3. Supply chain security management: Require suppliers to sign NDAs and ensure partners follow information security standards to mitigate potential risks.4. Employee awareness enhancement: Conduct regular information security training to raise employee awareness and capability in protecting confidential information.5. Incident response mechanism: Establish processes for reporting and handling information security events to detect and respond to potential risks promptly, minimizing impact.

Employee Diversity and Inclusion

TC- HW- 330a. 1	Employee diversity & inclusion – percentages by gender and race/ethnicity for (1) mid-level+ managers, (2) engineering, R&D, IT personnel, (3) all other employees	Refer to Section 5.01 – Human Capital Development
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Product Lifecycle Management

TC- HW- 410a. 1	Percentage of products by revenue containing materials covered by the IEC 62474 standard	The percentage of product revenue containing materials covered by IEC 62474 is 0%. Microcosm Technology bases its green product policy on the IECQ QC 080000 HSPM (Hazardous Substances Process Management) system, emphasizing process-oriented management of hazardous substances. Products comply with customer requirements and international environmental regulations. For reference to IEC 62474: Products are flexible PCB materials, which are reported individually per customer demand and managed through the “Environmental Management Substances Procedure” and a material list. Suppliers submit SDS and third-party verification reports as evidence.
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2024 Microcosm Technology Sustainability Report

TC- HW- 410a. 2	Percentage of products sold that meet EPEAT or equivalent criteria	Percentage of products sold that meet EPEAT or equivalent standards: 0%. Microcosm Technology's products are electronic components and not end-consumer products.
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TC- HW- 410a. 3	Percentage of products sold that meet ENERGY STAR criteria	Percentage of products sold that meet ENERGY STAR standards: 0%. Microcosm Technology's products are electronic components and not B2C consumer products.
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TC- HW- 410a. 4	Weight and recycling rate of end-of-life products and e-waste	Weight and recycling percentage of end-of-life products and e-waste: 0%. Microcosm Technology's products are B2B and not collected for recycling at end-of-life.
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Supply Chain Management

TC- HW- 430a. 1	Percentage of Tier 1 supplier facilities undergoing RBA Verified Audit Process (VAP) or equivalent audit (a) all facilities, (b) high-risk facilities	Weight and recycling percentage of end-of-life products and e-waste: 0%. Microcosm Technology's products are B2B and not collected for recycling at end-of-life.
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2024 Microcosm Technology Sustainability Report

TC- HW- 430a. 2	(1) Non-compliance rate of Tier 1 suppliers under RBA VAP or equivalent; (2) Corrective action rates for (a) priority and (b) other non-compliance	Although Microcosm Technology has not conducted RBA VAP audits, the company emphasizes labor rights in the supply chain and requires all suppliers to comply with local laws and international industry codes, including RBA standards. All Tier 1 suppliers signed the RBA Code of Conduct statement, committing to compliance. Continuous communication and monitoring ensured no incidents of child labor, forced labor, or violations of freedom of association occurred in 2024. Therefore, no non-compliance or corrective action (CAP) was needed. LUXSHARE will continue to strengthen supply chain management to ensure supplier adherence to social responsibility and sustainability standards.
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Materials Procurement

TC- HW- 440a. 1	Explanation of Risk Management for Critical Raw Material Usage	<p>For critical raw materials such as polyimide (PI), copper foil, chemicals, release paper, and PET release film, Microcosm Technology implements multiple control strategies to ensure supply stability and minimize the risk of supply chain disruption:</p> <ol style="list-style-type: none"> 1. Diversified Supplier Strategy: Establish multiple qualified suppliers for each key material to spread supply risk and avoid over-reliance on a single source. 2. Safety Stock Mechanism: Set safety stock levels based on market demand and historical consumption data to ensure uninterrupted production. 3. Long-Term Supplier Collaboration: Build long-term partnerships with key suppliers to secure material availability. 4. Market Monitoring and Early Warning System: Continuously monitor market trends, price fluctuations, and supply chain anomalies, allowing proactive responses to potential risks. 5. Alternative Material Assessment: Regularly evaluate alternative materials to reduce dependency on specific sources and enhance supply flexibility. <p>Through these strategies, Microcosm Technology experienced no disruptions in the supply of critical raw materials in 2024, ensuring stable and continuous production operations.</p>
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Climate-Related Information for Listed Companies: Risks and Opportunities from Climate Change and Corresponding Measures

1. Oversight and Governance of Climate-Related Risks and Opportunities by the Board and Management

Since 2024, Microcosm Technology has established the Sustainability and Risk Management Committee, which operates under the Board of Directors. The committee is responsible for coordinating the implementation of sustainability policies and managing climate-related risks. It regularly reports progress and key climate-related issues to the Board, thereby strengthening the Board's oversight of climate risks and opportunities.

Under the committee, a Risk Management Task Force—composed of senior management and cross-departmental members—follows the TCFD (Task Force on Climate-related Financial Disclosures) framework. This task force is responsible for: 1. Regularly identifying, assessing, and monitoring physical risks and transition risks arising from climate change. 2. Evaluating opportunities stemming from climate-related developments. 3. Formulating specific climate response strategies and action plans to address both risks and opportunities effectively.

2. How Identified Climate Risks and Opportunities Affect Business, Strategy, and Financials (Short-, Medium-, Long-Term)

2024 Microcosm Technology Sustainability Report

Business Aspect

Identified Climate Risk / Opportunity	Risk	Opportunity
Short Term	Production Equipment Damage / Transportation Disruption / Workforce Absences Leading to Operational Losses	Strengthen operational resilience
Medium Term	Climate Disasters Increasing Supply Chain Disruption Risk	Develop low-carbon, energy-efficient, and environmentally friendly technologies and materials
Long Term	Customers Considering Corporate Social Responsibility in Purchasing Decisions	Seize the opportunity presented by the low-carbon economy transition

Strategy Aspect

Identified Climate Risk / Opportunity	Risk	Opportunity
Short Term	Increased operational transformation costs	Improve internal management efficiency through cost-saving and revenue-enhancing measures.
Medium Term	Potential technical bottlenecks when executing regulations with existing resources	Build partnerships across industry supply chains to collaborate and overcome challenges together.
Long Term	Guiding operations with a low-carbon transformation goal	Enhance corporate competitiveness and strengthen strategic industry positioning.

Financial Aspect

2024 Microcosm Technology Sustainability Report

Identified Climate Risk / Opportunity	Risk	Opportunity
Short Term	Increased corporate transformation and raw material procurement costs	Opportunity to develop alternative raw materials and drive continuous R&D to optimize product formulations.
Medium Term	<ul style="list-style-type: none"> ● Equipment replacement ● Higher operating costs due to new technology investments 	<ul style="list-style-type: none"> ● Replacing old equipment can reduce electricity costs and improve efficiency ● Investing in new technology presents opportunities for innovation and long-term savings
Long Term	Litigation risk or ESG ratings affecting investor and bank confidence	<ul style="list-style-type: none"> ● Identify high-potential future investment opportunities to increase investment returns. ● Embrace the low-carbon economy as a transformation opportunity for sustainable business development.

3. Financial Impacts of Extreme Climate Events and Transition Actions

Extreme Climate Impact	Financial Impact	Transition Action
Equipment	Increased electricity consumption for air conditioning to maintain plant and office working environments, leading to higher operating costs.	Conduct regular inspections and replace outdated equipment to reduce energy burden.
Assets	Damage or loss of fixed assets and inventory may, aside from revaluation effects on financial statements, reduce revenue due to lower production capacity, causing abnormal cash flow and deterioration of financial health.	Purchase annual fire insurance for goods and equipment to mitigate disaster loss risks.

2024 Microcosm Technology Sustainability Report

Raw Materials	Shortages of raw materials and surges in utility (water, electricity, gas) prices increase production costs, leading to reduced profitability.	<ul style="list-style-type: none">● Implemented methanol recycling and reuse programs to reduce chemical consumption.● Develop new products, diversify sourcing, and expand product portfolios to mitigate operational risks.● Began introducing IATF 16949 in 2023 to improve energy efficiency and promote low-carbon products, reducing operating costs and enhancing competitiveness.● Regularly verify safety stock levels and monitor international issues to secure early procurement.
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Logistics & Transportation	Disruption of transportation routes prevents timely replenishment of raw materials or shipment of finished goods, increasing lead time and costs, resulting in operating losses and damage to business reputation.	Establish raw material transfer bases in locations less affected by climate conditions as contingency measures.
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Compliance	Increased costs to comply with climate-related regulations in various countries, as well as potential fines for violations.	Engage experts and scholars to understand climate-related regulations in supply chain regions, avoiding legal violations that could increase operating costs.
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4. Integration of Climate Risk Identification, Assessment, and Management Processes into Overall Risk Management System

In December 2020, the Company's Board of Directors approved the "Risk Management Policy and Procedures," which explicitly incorporates climate-related risks. Through a structured process of risk identification, risk assessment, risk response, risk monitoring, and risk reporting, each responsible business unit identifies risks based on its operational duties, analyzes the likelihood of risk occurrence for evaluation, and proposes corresponding response and mitigation measures. All related execution processes and outcomes are required to be recorded, reviewed, and reported through appropriate mechanisms to ensure effective adaptation and mitigation of risks.

- **Climate Risk Management and Implementation Units**

The Risk Management Task Force is the designated unit responsible for executing the Company's risk management. It primarily oversees the monitoring, measurement, and evaluation of corporate risks. The Task Force reports directly to the President and submits reports to the Audit Committee.

- **Climate Risk Identification**

The first step in managing risks is to identify those that may arise in the course of operations. Generally, risk occurrence is influenced by both internal and external factors, also known as risk drivers (e.g., hazard risks, operational risks, financial risks, strategic risks, compliance/contractual risks, and other risks). To ensure effective identification, various analytical tools and methodologies are adopted. Through bottom-up and top-down discussions and analyses, past experiences are consolidated, and potential future risks are forecasted, identified, and classified as a reference for subsequent measurement, monitoring, and management.

- Climate Risk Assessment

1. Risk assessment involves analyzing and evaluating the likelihood of risk occurrence and the extent of negative impacts once such risks materialize. This enables the Company to understand the implications of risks, prioritize risk control, and select appropriate response measures.
2. Quantifiable risks are managed through rigorous statistical analyses and technical approaches.
3. Risks that are difficult to quantify are assessed qualitatively, using descriptive evaluations to indicate the likelihood and potential impact of risk occurrence.

- Climate Risk Response

After risk evaluation and consolidation, each department is required to adopt appropriate response measures for the risks identified. Response strategies may include:

1. Risk Avoidance – Taking actions to eliminate activities that could generate risks.
2. Risk Reduction – Implementing measures to reduce the probability of occurrence and/or the severity of impacts.
3. Risk Sharing – Transferring part or all of the risks to third parties, such as through insurance.
4. Risk Acceptance – Taking no action to alter the likelihood or impact of risks.

- Climate Risk Monitoring

Each department is responsible for monitoring risks related to its business activities, proposing countermeasures, and submitting identified risks along with corresponding responses to the Risk Management Task Force.

- Risk Reporting

To ensure complete documentation of the risk management process and its outcomes, the Risk Management Task Force reports at least once a year to the Audit Committee on the Company's overall risk profile for management's reference.

- 5. Scenario Analysis for Assessing Climate Resilience, the scenarios, parameters, assumptions, analytical factors, and key financial impacts should be disclosed**

The Company has referenced the TCFD (Task Force on Climate-related Financial Disclosures) framework to conduct a preliminary scenario analysis and financial impact assessment regarding potential transition and physical risks posed by climate change. The analytical assumptions are based on a high-emission pathway (SSP3-7.0), under which global carbon reduction policies are not effectively implemented, combined with a 2°C global warming scenario to simulate potential impacts in Taiwan's coastal regions. Simulation results indicate that sea levels could rise by approximately 0.5 meters; however, the Company's Southern Taiwan Science Park plant is not located within the projected flood-prone areas, and thus its physical risk remains relatively limited.

Regarding transition risks, stricter future policies on carbon fees and carbon pricing may increase direct carbon costs and indirectly raise operating expenses. This could influence the Company's operating strategies and investment decisions. To mitigate such risks, the Company has initiated an assessment of the feasibility of installing a solar power generation system at its headquarters, with preliminary planning expected to be completed by 2025 (Year 114 in ROC calendar).

6. If there is a transition plan to manage climate-related risks, describe the content of the plan, as well as the indicators and targets used to identify and manage physical and transition risks

The Company has launched a medium- to long-term transition plan aimed at progressively reducing greenhouse gas emissions and mitigating operational impacts. Key initiatives include:

- Establishing a Sustainability & Environmental Task Force to oversee climate-related strategies and objectives.
- Initiating feasibility assessments in 2024 for installing a solar photovoltaic system at Company headquarters, with preliminary planning scheduled for completion in 2025.
- Developing a structured internal carbon emissions data management process to track emission sources and intensities.

Gradually increasing the proportion of renewable electricity procurement, in alignment with Taiwan's national 2050 Net Zero policy.

7. If internal carbon pricing is used as a planning tool, explain the basis for setting the price

Currently, the Company does not apply internal carbon pricing as a planning tool.

8. If climate-related targets are set, explain the activities covered, the scope of greenhouse gas emissions, the planning timeframe, and annual progress toward achieving the targets. If carbon offsets or Renewable Energy Certificates (RECs) are used to achieve the targets, specify the source and quantity of the offset reductions or RECs

In alignment with the Paris Agreement and Taiwan's Climate Change Response Act, the Company has set a long-term target of achieving net-zero emissions by 2050, consistent with the national net-zero goal.

This target covers the greenhouse gas (GHG) emissions generated by the company's operations, including Scope 1 (direct emissions) and Scope 2 (indirect energy-related emissions). The current short-term target mainly focuses on the headquarters site, and will gradually be expanded to subsidiaries based on actual operations and regulatory requirements.

The overall planning timeframe for the target is from 2024 to 2050. Relevant action plans have already been initiated in 2024, and from 2025 onward, annual GHG inventories and performance tracking will be conducted to ensure progress aligns with the planned transition pathway.

As of now, the company has not adopted carbon offset mechanisms or purchased Renewable Energy Certificates (RECs) to achieve GHG reduction targets. In the future, the feasibility of using carbon credits or RECs will be evaluated based on actual carbon intensity, net-zero requirements, and government policy developments.

9. GHG inventory, assurance, reduction targets, strategies, and action plans (also covered in Sections 1-1 and 1-2)

According to the Financial Supervisory Commission (FSC) regulations, the company must start GHG inventory reporting in 2026, complete verified GHG inventory reports at the entity level by 2028, and complete consolidated subsidiary-level verified reports by 2029. To proactively respond to regulatory requirements, the company initiated preparatory work for the GHG inventory in 2024, with the following progress:

- Inventory scope planning: Scope 1 (direct emissions) and Scope 2 (indirect energy-related emissions) have been defined, covering the headquarters and key energy usage items.
- Internal capability building: Established a Sustainability & Environmental Taskforce responsible for designing and executing the inventory process.
- GHG data management process: A structured GHG data management process has been implemented to standardize the recording and consolidation of key data such as energy usage and emissions.

Initial GHG inventory: The first GHG inventory was conducted in Q1 2025, laying the foundation for the formal inventory and reporting in 2026.

To achieve the 2050 net-zero target, the following strategies and action plans were initiated in 2024:

- Evaluate the feasibility of installing a solar power system at headquarters, with preliminary planning expected to be completed in 2025.
- Strengthen energy management and inventory processes.

Establish a sustainability governance framework and progressively implement employee training and process enhancements.



Microcosm Technology