LCY

2024 ESG Report

INDEX

Preface

About this Report 06
Message from the Chairman 08
Identify stakeholders and material topics 10
ESG Material Topics and Targets 18
ESG Highlights 19

Chapter 01 Strong Sustainable Governance

1.1 About LCY 22
1.2 Sustainable Governance 24
1.3 Regulatory Compliance 27
1.4 Supply Chain Management 32
1.5 Information Security 36

Chapter 02 Leading Circular Innovation

2.1 Cornerstone of Innovation 42
2.2 Sustainable Products and Services 43
2.3 Responsible Chemical Management 51
2.4 Digital Innovation 52

Chapter 03 Green Operations

3.1 Environmental Policies 60
3.2 Climate Strategy 61
3.3 Carbon & Energy Management 64
3.4 Air Quality Management 75
3.5 Water Management 77
3.6 Waste Management 80

Chapter 04 Promoting Social Prosperity

4.1 Human Rights Policies 86
4.2 Employee Demographics & Management 86
4.3 Employee Welfare 89
4.4 Talent Cultivation 92
4.5 Occupational Safety 94
4.6 Community Relations 101

Appendix

Participation in Industry Associations 112
GRI Standards Reference Table 113
SASB Index 116
TCFD Index 119
Sustainable Development Goals (SDGs) Reference Table 120
Independent Assurance Statement 121

Preface

About this Report 06

Message from the Chairman 08

Identify stakeholders and material topics 10

ESG Material Topics and Targets 18

ESG Highlights 19

About this Report

This is the sixth ESG Report of LCY Chemical Corp. The report, which follows the GRI standards, covers the actions taken by LCY Chemical Corp. and its affiliated business units (hereinafter referred to as LCY) from January 1, 2024 to December 31, 2024, highlighting its commitment to ESG principles. LCY will continue to publish the ESG Report every one to two years, with downloadable versions in Chinese and English available on LCY's official website.

Reporting Period

- Date of 1st publication: August 2012 (CSR Report)
- Publication date of the last report: December 2024
- Publication date of the current report: October 2025

Reporting Scope

The financial figures in this report correspond to the financial data boundary in the consolidated financial report of LCY and are presented in New Taiwan Dollar (NT$). Information disclosed related to the governance, environmental and social aspects of this report cover the Taipei Office, the Nanzih R&D Center, the factories in Taiwan (Dashe, Kaohsiung, Copper Foil, Xiaogang, Linyuan and and the Central Taiwan Science Park Plants), the Kaohsiung Terminal Station, the three factories in China (Huizhou, Zhenjiang and AR Plants), as well as the Baytown Plant in the US, and the Sarnia Plant in Canada. Any discrepancies in the scope of reporting are explained in detail in the report.

Reporting Standard & Third-Party Assurance

All information disclosed in this report has been independently verified by the British Standards Institution (BSI) in accordance with AA1000AS v3, Type 1 Moderate Assurance Level. The assurance was conducted following the GRI Standards, SASB Standards, and the TCFD recommendations. The independent assurance statement can be found in the appendix of this report.

Guideline/Standard	Organization
GRI Standards	Global Sustainability Standards Board, GSSB
Sustainability Accounting Standards - Chemicals	Sustainability Accounting Standards Board (SASB)
Task Force on Climate-Related Financial Disclosures (TCFD)	Financial Stability Board (FSB)

Material Changes

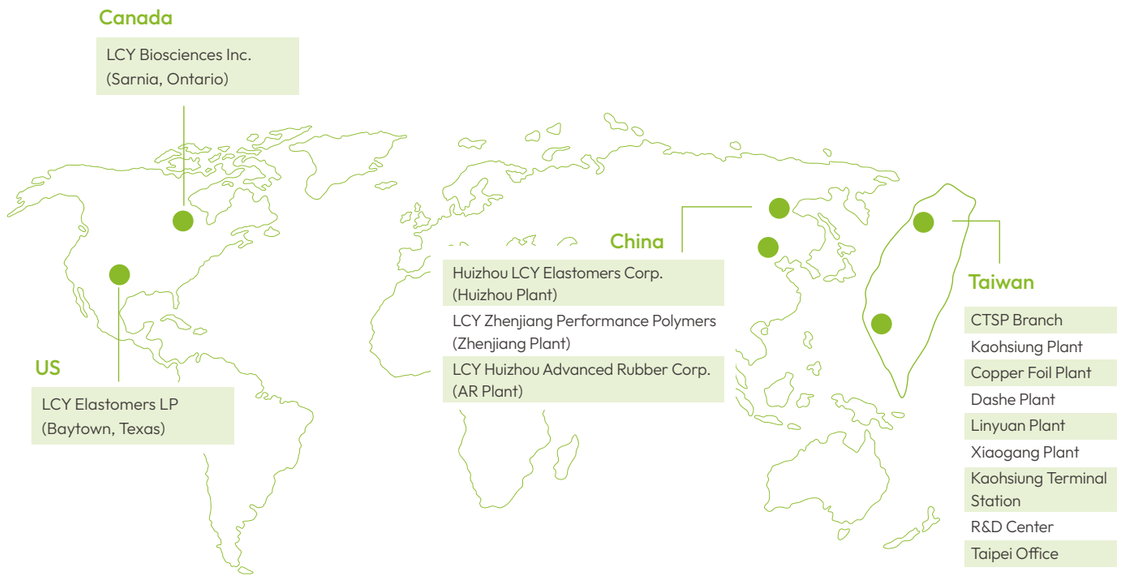
For the first time, the 2024 ESG Report expands its reporting boundary to include LCY's CTSP Branch in Taiwan and the Sarnia Plant in Canada. With the CTSP Branch commencing trial operations in 2024, its data has been incorporated into this year's disclosures. To further ensure the accuracy and completeness of the report, non-financial performance data from the Sarnia Plant has also been included in the 2024 reporting scope.

Material Changes in ESG Disclosure

Disclosure Standards	Adopted GRI 1: Foundation 2021
Analysis of Material Topics	Inclusion of GRI 3: Material Topics 2021—LCY completed its materiality assessment in 2022. In 2024, a supplementary review was conducted to include the CTSP Branch, confirming that no changes were required to the identified material topics. For more details, please see "Identifying Stakeholders & Material Topics."
Disclosure Scope	The financial data boundary is based on the boundary of LCY's consolidated financial statements, while the information collection boundary for sustainability issues is based on the operating locations listed in the reporting scope.

Locations

LCY Service Locations



Contact us

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Message from the Chairman

LCY 2024 ESG Report - Message from the Chairman

Since its founding in 1915, LCY has undergone several major transformations—from timber supply and plywood manufacturing, to the establishment of LCY Chemical Corp. in 1965, which marked our entry into the petrochemical industry. Today, in response to the global call for sustainability, we are driving our fourth transformation: evolving into a science-driven company, with materials innovation and sustainable technology at the core. For more than a century, we have upheld the belief that “Reimagining science for a thriving tomorrow” is the path to lasting growth and resilience.

Through the lens of Reimagining Science, we believe that our businesses must also be restructured to drive sustainable growth. LCY is organized around three strategic pillars—Performance Polymers and Materials, Semiconductor and Interconnect, and Sustainable Technology—which are further expanded into five business units: Performance Materials, Industrial Solutions, Electronics Materials, Interconnect Solutions (LCYtech), and Biosciences and Nutrition Solutions. This structure strengthens our specialization and accelerates innovation across the organization. Looking ahead, we are advancing the circular economy through innovations in semiconductors and electronic materials, full-footwear recycling for midsoles and outsoles, lightweight automotive and engineering plastics, and fermentation technology. By doing so, LCY is creating new possibilities that enhance the quality and convenience of everyday life.

In 2024, LCY’s long-standing commitment to innovation was recognized by our customers. Through the Electronic-Grade Isopropanol (EIPA) Dual Circular Economy model, LCY has successfully delivered re-purified EIPA for advanced manufacturing processes and next-generation packaging applications. The breakthrough dual-circular process not only enhances customer competitiveness but also supports the semiconductor industry’s pursuit of zero waste, earning LCY the 2024 TSMC Excellent Performance Award. By leveraging our high-purity purification technologies, we are helping customers drive low-carbon transformation in AI and high-performance computing, while reinforcing sustainability across the supply chain. Most importantly, the award highlights our employees’ pursuit of quality excellence, keen insight into customer needs, and unwavering commitment to a sustainable future.

Innovation in Sustainable Materials

Guided by a science-driven spirit of innovation, LCY continues to explore advancements across materials science, biotechnology, and electronic materials to enable more sustainable applications. In materials innovation, LCY has developed recyclable thermoplastic vulcanizates (TPV) to effectively reduce carbon footprint. LCY has also advanced PCR polypropylene solutions to offer a sustainable collaboration model among material suppliers, brand owners, and recyclers. The model transforms post-consumer polypropylene plastics into innovative recycled-modified materials through sorting, cleaning, and reprocessing. The innovative recycled modified materials, which contain up to 50% recycled content, have successfully achieved carbon emission reductions of 25% to 35% and are widely applied in packaging, sporting goods, and consumer products.

In advanced electronic materials, LCY is driving the development and application of standard and next-generation copper foil technologies (HTE, HLVP, and RTF copper foils). These innovations support a wide range of applications in smart living, automotive electronics, IoT, and next-generation communications, enabling both industry advancement and low-carbon development. In the biotechnology sector, LCY leverages proprietary yeast strains and advanced fermentation technologies, combined with high-absorbance ratio design, to successfully develop a portfolio of natural carotenoid products.

This year, LCY also introduced fluorine-free high-performance polyimide (PI) and innovative outsole materials, which were honored with the Ministry of Environment’s Green Chemistry Application and Innovation Award, for offering the market new, environmentally friendly solutions.

Progressing with Confidence Toward Net Zero

Fulfilling our carbon reduction commitments is a cornerstone of LCY’s transformation toward sustainability. In 2024, we achieved a 31% reduction in emissions compared to the 2021 baseline, marking steady progress toward our long-term targets of a 42% reduction by 2030 and net-zero emissions by 2050.

In greenhouse gas (GHG) management, we continue to lower emissions across Scope 1 and Scope 2 through process optimization, thermal energy integration, upgrades to energy-efficient equipment, reduction of exhaust emissions, and decreased fuel consumption. These efforts aim to reduce carbon emissions across our global operational sites in Taiwan, China, and the US. In 2024, LCY’s total global (Taiwan, China, US) carbon emissions amounted to 762,724 tCO_2e, with Scope 1 accounting for 18% and Scope 2 for 82%.

For Scope 3 emissions, LCY recognizes the supply chain as a key lever in driving decarbonization. We are advancing the use of low-carbon raw materials, obtaining bio-based material certification, and supporting supplier energy transition initiatives. These efforts strengthen supply chain resilience while effectively reducing indirect emissions. In 2024, LCY’s production sites in Taiwan and Huizhou, China, including those producing thermoplastic elastomers, polypropylene, and EIPA, achieved ISCC PLUS certification. The certification demonstrates LCY's ability to apply recycled feedstocks, establish traceable supply chains, and integrate sustainable manufacturing practices, while extending our decarbonization impact across the broader value chain.

Concurrently, we are expediting the adoption of renewable energy, with a target of 15% renewable electricity usage (RE15) at LCY's operation sites in Taiwan by 2030. We are also upgrading high-energy-consuming equipment by introducing smart monitoring and energy-saving technologies to improve operational efficiency and optimize energy performance.

A People-Centered Sustainability Culture

Advancements in technology and corporate management must be rooted in a people-centered culture. Transformation is not only about technological innovation, but also about embedding the right values and mindset. At LCY, we cultivate a positive and resilient workplace guided by five core values: "safety and health, integrity, accountability, kaizen, and co-creation." To better understand employee perspectives, we conduct a global employee engagement survey every two years. We are committed to the principle of "prioritizing safety above all else" and consider the well-being of our employees and the communities in which we operate to be a fundamental responsibility. In the 2024 survey, the "safety" indicator increased by 9% to 84%, while "collaboration and team spirit" rose by 10% to 80%. These results reflect our ongoing efforts to nurture a culture of co-creation—building trust-based collaboration through open dialogue, honest communication, and mutual trust.

In terms of talent development, since 2018, LCY has sponsored the Bowei Research Conference, which has grown into a key platform in the global scientific community. To date, the conference has brought together more than 620 international participants, 77 renowned scholars and scientists, and representatives from over 25 leading global institutions. By fostering knowledge exchange and collaboration, the conference provides fresh momentum for addressing major global challenges in science and technology.

Strengthening Governance to Enhance Resilience

Robust governance is essential to fulfilling our sustainability commitments and building organizational resilience. LCY continues to reinforce integrity and transparent governance in its operations with a diverse board of directors representing various areas of expertise. LCY has also established the ESG Sustainability Strategy Committee (ESG SSC) and the Ethics Management Committee to oversee and promote related policies. In parallel, we have implemented anti-bribery policies, whistleblowing mechanisms, and a smart compliance system to enhance regulatory efficiency and bolster organizational resilience. Furthermore, we continue to enhance supply chain management and cybersecurity safeguards. LCY ensures steady and reliable operations in an ever-changing global environment through regular internal and external audits and ongoing training programs.

A Blueprint of Sustainable Technology

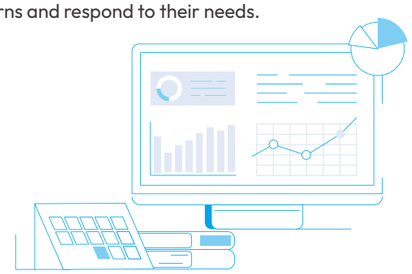
In the face of changing global dynamics and environmental challenges, LCY is guided by science in charting its blueprint for growth. We are dedicated to promoting materials innovation, green manufacturing, and the circular economy while broadening our influence in critical sectors such as semiconductors, performance materials, and sustainable technologies, thereby accelerating innovation. With more than a century of experience, we believe that we can only create a sustainable and shared future by working hand in hand with global partners and using science as a bridge. LCY will continue to move forward with purpose, bringing the power of change to the world.

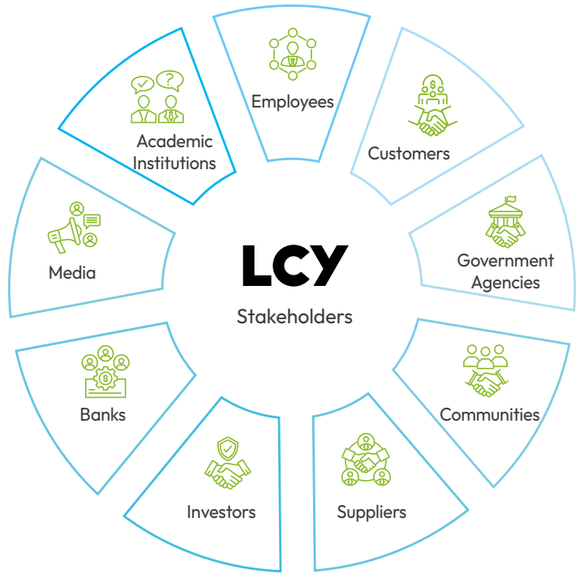
Chairman T.H. Hong

Identifying Stakeholders & Material Topics

Stakeholders (Stakeholder Communication Channels)

LCY's ESG Sustainability Strategy Committee (ESG SSC) has conducted internal meetings to evaluate company operations and referenced the AA1000 Stakeholder Engagement Standards 2015 (AA1000 SES2015) to, thereby, identify nine major stakeholders: employees, customers, government agencies, communities, suppliers, investors, banks, the media, and academic institutes. LCY has collected feedback from all major stakeholders to understand their concerns and respond to their needs.





Stakeholders	Stakeholder Importance	Communication Channel	Frequency	Topics of Concern
Employees	Employees are LCY's most valuable asset and the driving force behind sustainable growth. The company is committed to providing a safe and healthy workplace, as well as career development opportunities, which help attract and retain talent while fueling long-term business growth.	Labor-management meetings	Quarterly	Information Security & Data Protection Business Ethics & Transparency Management of the Legal & Regulatory Environment Occupational Safety & Health Employment
		Employee Welfare Committee	Quarterly	
		Occupational Safety and Health Committee	Quarterly	
		Internal announcements: Emails, posters, digital bulletins	When necessary	
Customers	LCY is guided by a customer-first philosophy and values the needs of every customer. The company delivers reliable, high-quality products with integrity and dedication, building lasting relationships of trust as the company and the customers work together toward a shared sustainable future.	Product consultation	Project-based	Business Ethics & Transparency Supply Chain Management Hazardous Waste Management Management of the Legal & Regulatory Environment Occupational Safety & Health
Government Agencies	The government and its competent authorities are essential partners in ensuring compliance and promoting sustainable transformation. LCY adheres to regulatory policies and aligns with industry and environmental requirements. LCY engages in transparent communication and collaboration to reduce operational risks, build public trust, and leverage policy resources that promote the development of a sustainable industry.	Official correspondences	When necessary	Chemical & Environmental Management Occupational Safety & Health GHG Emissions Hazardous Waste Management Business Ethics & Transparency
Communities	Strong community relationships are key to sustainable development. LCY engages the community through dialogue and participation in charitable activities. This fulfills its corporate social responsibility and fosters mutual prosperity with local communities.	Meetings	When necessary	Chemical & Environmental Management Air Quality Green Products Hazardous Waste Management Community Relations
		Factory visits for visitors including local residents and school groups	When necessary	

Stakeholders	Stakeholder Importance	Communication Channel	Frequency	Topics of Concern
Suppliers	Suppliers are vital partners in ensuring operational stability and quality management. Through long-term collaboration, LCY secures a consistent supply, reliable quality, and on-time delivery. Together, LCY and its suppliers advance sustainability management practices, strengthening the resilience and accountability of the value chain. LCY and its suppliers work hand in hand to advance corporate sustainability.	Audits for existing suppliers	When necessary	Hazardous Waste Management Chemical & Environmental Management Business Ethics & Transparency Occupational Safety & Health GHG Emissions
		Reviews for existing suppliers	Annually	
Investors	Investors are crucial in supporting LCY's growth and sustainability development. The company is committed to sound management and financial transparency, maintaining investor confidence through regular engagement, disclosure, and strong corporate governance. The objective is to strengthen mutual trust in the capital market and drive long-term value creation.	Annual shareholders' meeting [1]	Annually	Supply Chain Management Business Ethics & Transparency Management of the Legal & Regulatory Environment Occupational Safety & Health Hazardous Waste Management
		Investor conference [1]	Annually	
		Financial performance report	Twice a year	
		Sustainability report	Annually	
Banks	Banks are key partners in ensuring LCY's operational stability and capital management. By maintaining strong financial credit and trusted relationships, the company secures stable financing channels. In line with global sustainable finance trends, LCY also promotes green financing and sustainability-linked loans, working together with banking partners to advance its low-carbon transition and sustainability goals.	Meetings	Annually	Chemical & Environmental Management Energy Management Green Products Business Ethics & Transparency Management of the Legal & Regulatory Environment
Media	The media act as a vital bridge between LCY and the public, conveying the company's values, sustainability progress, and brand impact. Through proactive and transparent communication, LCY builds public trust, strengthens its corporate image, and responds promptly to social concerns. This approach fosters mutual understanding and constructive dialogue, while reinforcing the company's commitment to sustainable development. When needed, LCY also adapts its public relations and crisis management strategies to ensure effective engagement.	Interviews (personal, written, phone)	When necessary	Hazardous Waste Management Chemical & Environmental Management Green Products Energy Management Water Management
Academic Institutions	Academic institutions are key partners in advancing research and technology. Through industry-academia collaboration, LCY strengthens material applications and process optimization while actively supporting talent development and knowledge exchange. These efforts enhance R&D capacity and sustainability leadership, driving both industry innovation and low-carbon transformation.	Meetings Factory visits for external visitors including school groups LCY Education Foundation scholarships & events	When necessary	Green Products Employee Training, Human Rights, Diversity & Equal Opportunities Chemical & Environmental Management Air Quality Water Management

Note 1: The subsidiary LCY Technology Corp. (LCYtech) is a listed company. The annual shareholders' meeting and investor conference refer to those of LCYtech.

Identification & Disclosure of Material Topics

LCY continues to keep a pulse on global sustainable development trends. To identify the following list of material topics relevant to LCY, we referred to the GRI Standards published by Global Reporting Initiatives (GRI) and the guidelines for the chemical sector set forth by the Sustainability Accounting Standards Board (SASB) for material topics of concern. In addition, we also looked at international sustainability ratings and industry benchmarks to compile the list of material topics.

Through its materiality assessment process, confirmed by the ESG Sustainability Strategy Committee (ESG SSC), LCY conducted a reassessment of material topics in 2022. Furthermore, LCY carried out a supplementary stakeholder survey in 2024 for its newly established CTSP Branch. For this identification process, a total of 277 stakeholders were invited to fill out a survey, and a total of 237 valid survey responses were recovered.

This report outlines management approaches and specific actions related to each material topic in the corresponding sections, based on their relevance. LCY undertakes a regular reassessment of material topics every two to three years, while also gathering and responding to stakeholder feedback on an ongoing basis through diverse communication channels.

Identification Process

Confirm List of Material Topics

- Nine categories of key stakeholders were identified and defined: investors, customers, banks, employees, suppliers, government agencies, communities (e.g., science park administrations, schools, and NGOs), media, and academic institutions. Stakeholders are then evaluated based on their "significance" and "frequency of engagement," resulting in a finalized list and number of major stakeholders.
- Produced a list of 43 ESG material topics relevant to LCY according to international sustainability ratings; SASB's governance, environmental, and social requirements for the chemical sector; and sustainability issues important to leading chemical companies recognized by the DJSI.
- Following internal discussions and evaluations by the Sustainability Development Department, the original 43 topics were consolidated based on their impact and similarity, narrowing them down to 17 priority issues. A stakeholder survey was then designed using two key dimensions—"level of concern" and "impact on operations."

Investigate Level of Stakeholder Concern

- Conducted a survey to understand the level of stakeholder concern, which was issued to 277 stakeholders. We recovered a total of 237 valid survey responses, including 29 from management-level employees at LCY.
- Responses from senior executives on the reliance/communication frequency of stakeholder groups and impact level were weighed to produce a score on the level of stakeholder concern, which helped determine the y-axis of the materiality matrix.

Analyze Operational Importance and Value Chain Impact of Material Topics

- Analyzed the impact of material topics on LCY's operations and value chain according to "Likelihood of Impact" and "Significance of Impact on Economy, Environment, and People (incl. Human Rights)" with the help of 41 LCY employees and 29 management employees. Their responses were used to produce a score on the material topic's impact on the value chain, as well as both actual and potential impact, which helped determine the x-axis of the materiality matrix.

Confirm Materiality Matrix (Finalized Material Topics for Reporting)

ESG SSC confirmed the top 10 material ESG topics based on materiality analysis outcomes and presented the list to the chairman and CEO. Then, disclosed internal information, data, and policies according to reporting guidelines.

List of Priority Issues

Based on the GRI Standards, SASB Standards, and the UN SDGs, an initial list of 43 ESG-related focus topics was compiled. The Sustainability Development Department then evaluated these topics for impact and similarity, consolidating them into 17 priority issues. These were further categorized according to their respective ESG dimensions:

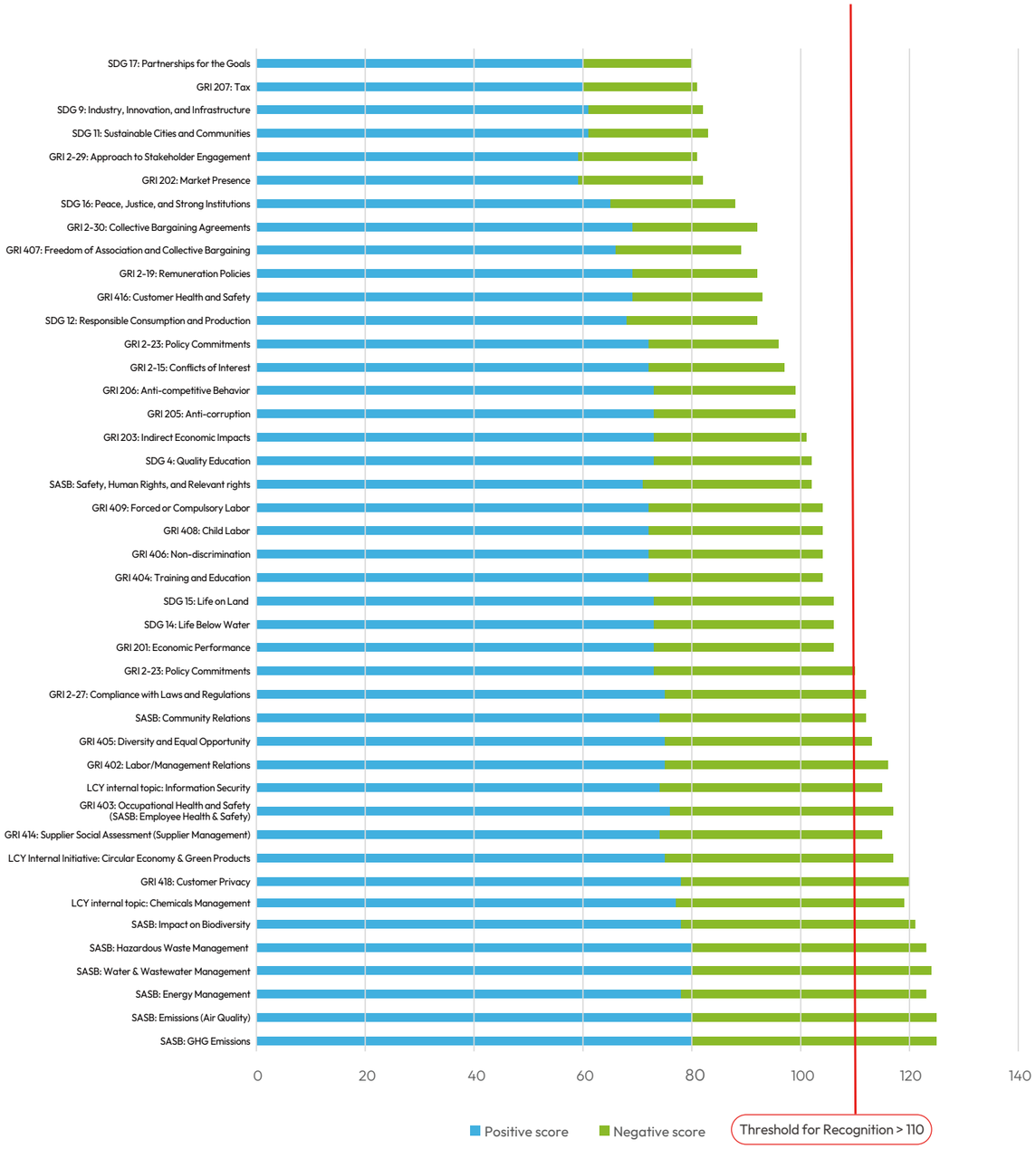
Environmental	Social	Governance
GRI 302: Energy	GRI 401: Employment	GRI 301: Materials
GRI 303: Water and Effluents	GRI 402: Labor/Management Relations	GRI 201: Economic Performance
GRI 305: Emissions	GRI 403: Occupational Health and Safety	GRI 202: Market Presence
GRI 306: Waste	GRI 404: Training and Education	GRI 203: Indirect Economic Impacts
GRI 308: Supplier Environmental Assessment (Supplier Management)	GRI 405: Diversity and Equal Opportunity	GRI 204: Procurement Practices
SASB: Energy Management	GRI 406: Non-discrimination	GRI 205: Anti-corruption
SASB: Hazardous Waste Management	GRI 407: Freedom of Association and Collective Bargaining	GRI 206: Anti-competitive Behavior
SASB: GHG Emissions	GRI 408: Child Labor	GRI 207: Tax
SASB: Emissions (Air Quality)	GRI 409: Forced or Compulsory Labor	GRI 2-15: Conflicts of Interest
SASB: Water & Wastewater Management	GRI 412: Human Rights Assessment	GRI 2-19: Remuneration Policies
SASB: Waste & Hazardous Materials Management	GRI 414: Supplier Social Assessment (Supplier Management)	GRI 2-23: Policy Commitments
SASB: Impact on Biodiversity	GRI 416: Customer Health and Safety	GRI 2-27: Compliance with Laws and Regulations
SDG 6: Clean Water and Sanitation	GRI 418: Customer Privacy	GRI 2-29: Approach to Stakeholder Engagement
SDG 7: Affordable and Clean Energy	SASB: Product Quality & Safety	GRI 2-30: Collective Bargaining Agreements
SDG 11: Sustainable Cities and Communities	SASB: Safety, Human Rights, and Relevant rights	SASB: Product Design & Lifecycle Management
SDG 12: Responsible Consumption and Production	SASB: Community Relations	SASB: Materials Sourcing & Efficiency
SDG 13: Climate Action	SASB: Labor Practices	SASB: Business Ethics
SDG 14: Life Below Water	SASB: Employee Health & Safety	SASB: Business Ethics and Transparency
SDG 15: Life on Land	SDG 3: Good Health and Well-being	SDG 9: Industry, Innovation, and Infrastructure
LCY Internal Initiative: Circular Economy & Green Products	SDG 4: Quality Education	SDG 16: Peace, Justice, and Strong Institutions
LCY internal topic: Chemicals Management	SDG 5: Gender Equality	SDG 17: Partnerships for the Goals
	SDG 8: Decent Work and Economic Growth	LCY internal topic: Information Security
	SDG 10: Reduced Inequalities	

Note: The finalized 17 priority issues are highlighted in blue.

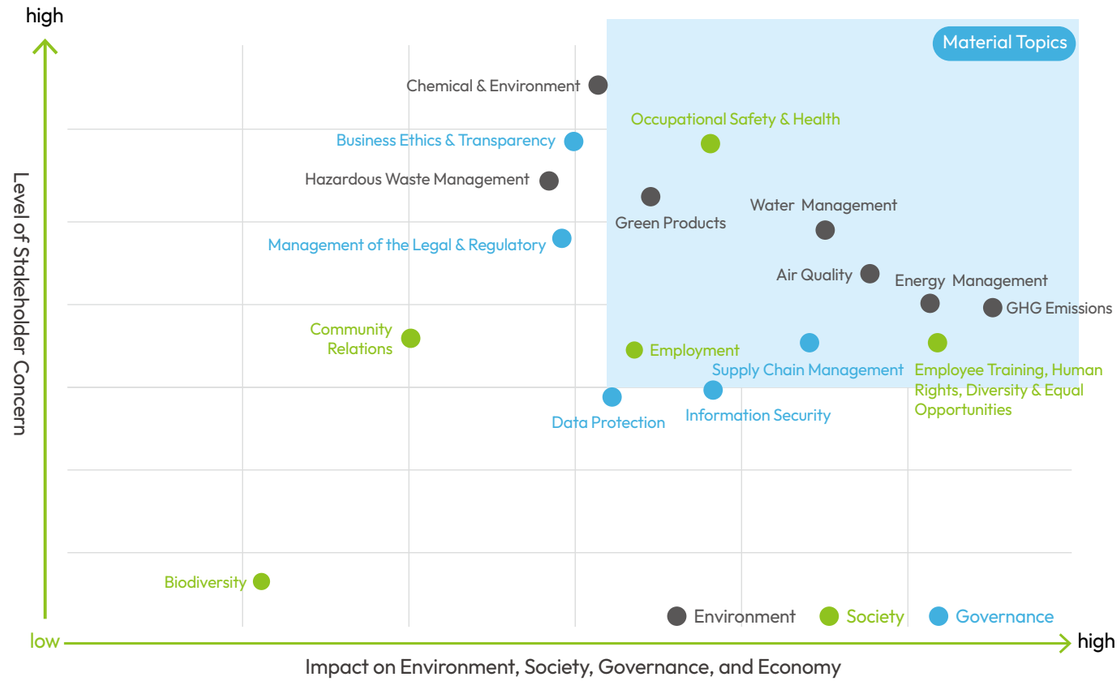
Materiality Assessment

Members of the Sustainability Development Department and managers evaluated each topic based on the principle of double materiality, assessing its positive and negative impacts across business performance, environment, society, and corporate value. Following a thorough review of the impact, significance and similarity of the initial 43 ESG topics, the 17 priority issues were identified for stakeholder assessment. Please find the evaluation results below:

Materiality Assessment



Materiality Matrix



Note 1: Material topics are located in the blue square in the upper-right corner.

Note 2: A total of 10 material topics were identified based on assessments of operational impact and stakeholder concern.

Explanation of Material Topics and Its Boundary

LCY developed a materiality analysis matrix based on the results of stakeholder surveys and operational impact assessments. Each ESG topic was further identified, analyzed, and discussed to evaluate its relevance and level of impact. In the end, ten material topics were determined, serving as the foundation for the structure and chapter planning of this report.

	Material Topics	Significance of Material Topics to LCY	Stakeholders									Potential Impacts from LCY & Value Chain on Economy, Environment, and People (incl. Human Rights)	Related Topic(s)		Major Policies (Related Chapters)
			Employees	Customers	Government Agencies	Communities	Suppliers	Investors	Banks	Academic Institutions	Media		GRI Standards	Accounting Metric	
E	GHG Emissions	Increasing global emphasis on climate change, stricter control imposed by government regulations, and impacts from the upcoming CBAM in the EU and carbon fees in Taiwan mean that GHG emissions and energy management will now have financial implications beyond existing environmental impacts. GHG emission audits, energy audits, and reducing energy consumption and GHG emissions have become essential tasks on LCY's journey towards sustainable operations and enhanced resilience.	●	●	●			●	●		●	GHG emissions lead to real environmental impacts such as climate change and global warming. In 2025, as government agencies begin to impose carbon fees based on GHG emissions, companies may face additional operating costs, resulting in potential economic and financial impact. When companies work with their value chain partners to implement reduction measures, they can effectively mitigate environmental impacts and improve the reputation of the company and its value chain.	GRI 305-1 GRI 305-2 GRI 305-4 GRI 305-5	RT-CH-110a.1 RT-CH-110a.2	3.3.1 Carbon Management
	Energy Management		●	●	●			●	●		●	Anomalies in the power or energy supply can disrupt the operation of prevention and control equipment and have environmental implications. Additionally, such disruptions can lead to halts in production, erode customer confidence in placing orders, result in financial losses for the company, and potentially adversely impact the company's reputation.	GRI 302-1 GRI 302-3	RT-CH-130a.1	3.3.2 Energy Management
	Air Quality	Failure to properly manage pollutants generated during manufacturing processes may impact surrounding environments. In 2015, Taiwan launched phase one of the "Kaohsiung-Pingtung Air Quality Total Quantity Control Plan." Failure to comply with the total quantity control requirements may lead to impacts on company operations.	●		●	●		●	●			Improper operation or malfunctions in air pollution control facilities that result in the emission of pollutants exceeding regulatory standards may have negative impacts on the environment. This not only subjects the company to potential penalties but also jeopardizes its reputation, leading to potential negative impacts such as financial losses.	GRI 305-7	RT-CH-110a.1 RT-CH-110a.2 RT-CH-120a.1	3.4.1 Air Quality Policies
	Water Management	In recent years, climate change has severely impacted our planet, with growing reports of heavy rainfall and droughts around the world. Water risks may have serious impacts on company operations. Effective water management is therefore a critical task for sustainable operations.	●	●	●	●		●	●			Anomalies in water supply may potentially impact production capacity, leading to a halt in production. This, in turn, can erode customer confidence in placing orders, result in financial losses for the company, and potentially adversely affect the company's reputation.	GRI 303-1	RT-CH-140a.1 RT-CH-140a.2 RT-CH-140a.3	3.5.1 Water Policies
	Green Products	Actively reducing environmental impact throughout all stages of a product's life cycle and creating economic value for customers are crucial steps for the upstream industry chain in achieving a sustainable chemical future		●			●	●	●	●	●	Commitment to improving existing processes, developing green products, and engaging with value chain partners can provide innovative business opportunities in the face of climate change. This approach reduces environmental impacts throughout the value chain, generates positive financial outcomes, and enhances the company's reputation.	GRI 301-2	RT-CH-410a.1	2.1.1 Innovative Management 2.2.1 LCY's Sustainability 6R
S	Employee Training, Human Rights, Diversity & Equal Opportunities	Strengthening corporate competitiveness and building a strong team are critical to achieving development goals and supporting growth on an operational scale. Employees are our most valuable assets. We prioritize safeguarding their interests by preventing injuries and promoting good health. We value human rights and provide comprehensive training and career development opportunities. We are committed to diversity and equal opportunities, ensuring that employees have room for growth in both their professional and personal lives.	●	●								A robust training mechanism, a human rights-oriented environment, diversity, and equal development opportunities can attract more talented individuals to join the company. This not only improves employee morale and teamwork but also enhances the company's overall creativity and provides opportunities for operational growth.	GRI 404-1 GRI 404-3 GRI 405 GRI 408-1	-	4.1 Human Rights Policies 4.4.1 Talent Cultivation Policies
	Employment		●	●	●			●	●			A lack of emphasis on employee welfare and a lack of communication channels for employees can lead to labor disputes, which subsequently affect company operations and lead to potential negative impacts such as financial losses.	GRI 401	-	4.3 Employee Welfare
	Occupational Safety & Health	Potential risks to occupational safety and health in production processes or factory environments, if not controlled, can lead to injuries, fatalities, and other hazards. Ensuring workplace safety, creating safe, healthy, and comfortable labor environments, and continuously reducing occupational incident rates are priorities for safe operations.	●	●	●			●	●			Failure to implement safety regulations can result in workplace accidents, illnesses, and subsequent impacts on production and operations, resulting in potential negative impact such as financial losses.	GRI 403	RT-CH-320a.1 RT-CH-320a.2 RT-CH-540a.1 RT-CH-540a.2	4.5.1 Occupational Safety Management
G	Supply Chain Management	To ensure the sustainable operation of our supply chain, we employ Environmental Standards to screen new suppliers and assess the entire supply chain. We require suppliers to collaboratively establish environmental, health, and safety (EHS) management systems, and to adhere to ethical practices such as anti-corruption and anti-bribery measures. This is aimed at minimizing potential impacts on the environment and society.	●	●			●	●				Disrupted supply chains and inconsistent raw material quality can result in limited production capacity and products that do not meet standards. This can lead to potential negative impacts such as financial losses and loss of customer confidence. Implementing effective supply chain management to maintain sustainable operations can stabilize the company's long-term performance, ensuring production continuity and boosting customer confidence, thereby yielding positive financial benefits.	GRI 308-1 GRI 408-1 GRI 414-1	-	1.4.2 Supply Chain Management Procedures
	Information Security	To safeguard sensitive data within the company, as well as data exchanged with customers and the supply chain, information security has become a crucial aspect of sustainable development. Failures in information security management may result in operational losses for the company and could even impact long-term competitive research and development capabilities.	●	●			●	●	●			Cyberattacks, employees inadvertently clicking on malicious links that download malware, or external uploading of confidential company information can result in the exposure of proprietary company information. This could affect the company's technological competitive advantage and lead to financial losses.	GRI 418-1	-	1.5.1 Information Security Policies

2024 LCY ESG Material Topic - Metrics and Targets

Category	Metrics [Note 1]	Long-term: 2030 Targets	Mid-term: 2027 Targets	Short-term: 2025 Targets
GHG Emissions	Reduction of GHG emissions compared to the base year	↓42% by 2030 "Net Zero 2050" target for the group	↓ 36%	↓ 32%
Energy Management	Reduction of energy intensity (consumption per unit of product) compared to the base year	8%	5%	3%
	LCY Taiwan plants will use a certain percentage of renewable energy [Note 5]	15% (RE15)	N/A (adjusted on a rolling basis according to the plant/BU green electricity procurement strategy)	1.3%
Green Products	Annual sales of solvent recycling services [Note 6]	↑ 290%	N/A (adjusted on a rolling basis according to the expansion of our downstream customers)	↑ 87%
	Growth rate of total water recovery from using MBR products on the market [Note 7]	+510%	+380%	+290%
Air Quality Management [Note 2]	Taiwan plants to reduce VOC emissions vs. base year	Linyuan Plant: Process/equipment and components/prevention and control equipment optimization 2025: Prioritize process improvements, cut 1.8 tons of VOCs 2027-2030: Continue reduction actions with rolling adjustments		
		Xiaogang Plant: Process upgrades to boost enclosure collection efficiency 2025: Complete 1/5 of phased work 2027-2030: Complete project and seek efficiency approval from the Environmental Protection Bureau		
Water Management (Wastewater Recycling) [Note 2, 3, 4]	Higher wastewater recycling rates at designated Taiwan plants	Maintain 15% annual recycling rate		
Waste Management [Note 2, 4]	Taiwan plants reduce waste output vs. base year	Maintain 10% annual reduction compared with base year		

Note 1: Environmental KPI base year adjusted from 2019 to 2021.

Note 2: In 2024, LCY reassessed and revised its environmental indicators for air quality, water management, and waste management, prioritizing Taiwan plants that account for the largest share of emissions.

Note 3: Designated plants in Taiwan - only the Kaohsiung and Linyuan Plants are equipped with wastewater treatment facilities.

Wastewater recycling inside the plants refers to the process where wastewater, after being treated in these facilities, undergoes further filtration to be reused instead of being discharged.

Wastewater recycling rate = (recycled wastewater/total water withdrawal)*100%.

Note 4: Water and waste management: In recent years, LCY plants have focused on wastewater recycling and waste reduction. As manufacturing processes have stabilized, the company has maintained annual targets of a 15% wastewater recycling rate and a 10% reduction in waste output.

Note 5: Mid-term renewable energy targets will be revised on a rolling basis according to each plant's or business unit's green power procurement strategy.

Note 6: Adjustments to solvent recovery service sales targets reflect factors such as downstream customer plant expansions, requiring a reassessment of medium- and long-term goals.

Note 7: Medium- and long-term targets for MBR products were revised for two reasons: (1) based on actual sales in 2024, LCY reviewed the gap between projections and outcomes and adjusted future targets accordingly; and (2) Intensified market competition: overall market capacity and pricing pressures were taken into account, resulting in more conservative growth planning.

Category	Metrics	Long-term: 2030 Targets	Mid-term: 2027 Targets	Short-term: 2025 Targets
Employment	Increase employee satisfaction	Continuously track and improve items uncovered from employee satisfaction surveys.	Continuously track and improve items uncovered from employee satisfaction surveys.	Review 2024 survey results and evaluate survey agencies for the next survey.
Employee Training, Human Rights, Diversity & Equal Opportunities	Enhance employee performance in the workplace	Help employees overcome psychological or behavioral challenges and enhance employee performance in the workplace.	Help employees overcome psychological or behavioral challenges and enhance employee performance in the workplace.	Help employees overcome psychological or behavioral challenges and enhance employee performance in the workplace.
	Strengthen the company's competitiveness	Complete review of talent pipelines for 90% of middle and senior management positions in Taiwan and global LCY locations	Complete review of talent pipelines for 80% of middle and senior management positions in Taiwan; and 80% of senior management positions in global LCY locations	Complete review of talent pipelines for 70% of senior management positions
	Strengthen equality	LCY does not define or differentiate based on gender or race in our compensation and benefits policies and practices, including promotions, benefits, and bonus distributions. We regard all talents as critical to our sustainable growth and operations.	LCY does not define or differentiate based on gender or race in our compensation and benefits policies and practices, including promotions, benefits, and bonus distributions. We regard all talents as critical to our sustainable growth and operations.	LCY does not define or differentiate based on gender or race in our compensation and benefits policies and practices, including promotions, benefits, and bonus distributions. We regard all talents as critical to our sustainable growth and operations.

2024 ESG Highlights

Governance

510 Consolidated revenue

- NT$51 billion in consolidated revenue and NT$2.2 billion in consolidated net income after taxes in 2024.

9% Green Revenue

- Revenue from green products reached NT$4,800,264,000, accounting for 9% of overall revenue.

Environmental

↓31% Carbon Emissions

- Combined carbon emissions from LCY locations in Taiwan, China, the US, and Canada decreased by 31% compared to the base year (2021), and carbon intensity reduced by 4.3% compared to the previous year (2023).

↓20.9% Energy Consumption

- Total energy consumption from LCY locations in Taiwan, China, the US, and Canada decreased by 21.5% compared to the baseline year (2021), while energy intensity decreased by 0.34% compared to the previous year (2023).

↓23% SOx Unit Product Emissions

- Total SOx unit product emissions from LCY locations in Taiwan, China, and the US decreased by 23% compared to the previous year (2023).

Social

100% Return Rate

- 100% return rate and 96% retention rate after parental leave.

100% Employee Health Screening

- Achieved 100% participation rate in employee health screenings in 2024 and; a 100% participation rate across all LCY operational sites in Taiwan in cancer screenings/government-subsidized four cancer screenings conducted by the Health Promotion Administration.

1.1 About LCY 22
1.2 Sustainable Governance 24
1.3 Regulatory Compliance 27
1.4 Supply Chain Management 32
1.5 Information Security 36

01

Strong Sustainable Governance

We are dedicated to establishing a robust corporate governance system, adhering to laws and regulations at all locations, and implementing honest and ethical business practices. Our commitment is to foster a corporate culture rooted in integrity and accountability. We will continue to uphold the highest standards of business integrity at the operational level while developing an effective governance mechanism. Our goal is to serve the long-term interests of the company and its shareholders while fulfilling the group's social responsibilities. LCY's operating performance in 2024 showed growth compared with 2023. This was primarily due to the recovery of rubber sales in the European and US markets, increased demand from semiconductor customers in the Electronics Materials BU, and the disposal of ownership of land in Hsinchu, which enhanced asset value. NT$51 billion in consolidated revenue and NT$2.2 billion in consolidated net income after taxes in 2024.

51 billion | NT$51 billion in consolidated revenue and NT$2.2 billion in consolidated net income after taxes in 2024.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

- Supply Chain Management
- Information Security

1 Strong Sustainable Governance

1.1 About LCY

1.1.1 About Us

Founded in 1965, LCY Chemical Corp. believes in reimagining science for a thriving tomorrow. LCY's business centers around three strategic pillars: Performance Polymers & Materials, Semiconductor & Interconnect, and Sustainable Technology. This foundation extends to five business units: Performance Materials, Industrial Solutions, Electronics Materials, Interconnect Solutions (LCYtech) and Biosciences & Nutrition Solutions. With an undeniable global presence, LCY upholds the core values of safety and health, integrity, accountability, kaizen, and co-creation in the ongoing commitment to the field of materials science. Looking ahead, LCY will leverage our growth momentum to nurture future materials science talent and catalyze innovation to lead industry transformation.

1915 LCY was established

1965 LCY Chemical Corp. was established

1977 LCY Chemical Corp. was listed on the Taiwan Stock Exchange (1704)

1997 Established Zhenjiang LCY General Chemical Co., Ltd. and Zhenjiang LCY Warehousing & Storage Co., Ltd.

2004 Established presence in the US Acquisition of Polimeri Europa's TPE plant in Baytown, Texas

2005 Operation established in Southern China Established TPE plant in Huizhou

2006 Acquired Taiwan Plastics & polymers (TPP) that produces PP and its derivatives

2019 Acquired by US investment company KKR and delisted from TSE Acquisition of BioAmber began operation in Canada

2021 Acquired Bridgestone's Huizhou Plant Emulsion polymerized styrene butadiene rubber (ESBR) production line

2024 Established the CTSP Branch to expand production line for electronic-grade materials

2025 Established a JV to enter the SEA market and expand the composite materials production line.

Five Business Units

Performance Materials

A global leader in innovative specialty material solutions

The only supplier in the industry offering both rubber and plastics, LCY is committed to developing differentiated, market-driven products. We provide comprehensive support to customers worldwide across technical services, application development, new product research, market intelligence, and business service

- TPE Globalprene
- PP Globalene
- Performance composite
- ESBR

Industrial Solutions

Committed to becoming a world-leading manufacturer of essential carbon-neutral industrial solutions

LCY has achieved a global presence in the production of pentaerythritol, paraformaldehyde, and isopropanol (IPA), solidifying its position as a key player in the international chemical industry. In 2016, LCY initiated research and development on MBR, facilitating 100% recycling of wastewater from the manufacturing process. Advancing water recycling technology remains a focal point of LCY's ongoing efforts.

- MBR
- Solvent
- Methanol

Electronics Materials

Delivering ultra-high-purity, innovative, and green electronic materials to semiconductor customers worldwide

LCY is the only manufacturing company in Taiwan that offers vertically integrated production of isopropanol (IPA) and acetone (DMK) for electronics manufacturers. LCY offers a high-purity product portfolio (control limit < 0.1 ppb) and recycling service for EIPA and EDMK.

- EIPA
- EDMK

Interconnect Solutions (LCYtech)

A trusted interconnect technology partner, creating a smarter world with green solutions

We are the upstream material supplier for the printed circuit board (PCB) industry. LCY uses 100% reclaimed wire and cable as manufacturing raw materials. We have mastered key processes and technologies to develop next-generation copper foil with high density, thinness, and high heat resistance.

- Premium thin foil technology

Biosciences & Nutrition

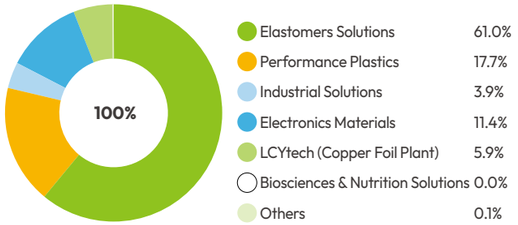
A global innovator driving sustainable change and a leader in bioscience solutions

LCY replaces fossil fuels with renewable feedstocks rich in sugars and fatty acids. Using proprietary yeast and advanced biotechnology, we sustainably produce the desired products.

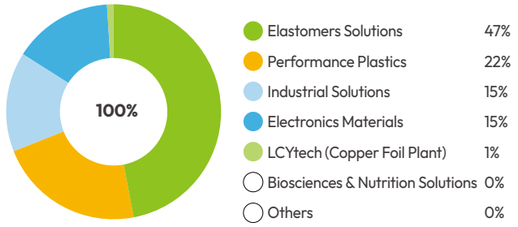
- Fermented astaxanthin
- Fermented lycopene
- Fermented Vitamin A

Note: In alignment with LCY's new brand positioning, the company reorganized into five business units in 2024, creating a more efficient and agile operating structure. This transformation is designed to embed the vision of "Catalyze Innovation" into every aspect of the organization and into the mindset of every colleague. LCY is no longer defined solely as a chemical company, but as a science-centric, future-oriented enterprise committed to innovation. Our purpose is to address the pressing challenges faced by human civilization. At LCY, we believe in reimagining science for a thriving tomorrow.

Presented based on Business Unit (BU) share of consolidated revenues in 2024



Presented based on Business Unit (BU) share of production volume in 2024



Note 1: The data includes Sarnia Plant in Canada

Note 2: Statistics are based on products measurable by weight. (Products or services that cannot be quantified by weight, such as MBR products from the Industrial Solutions Business Unit, are excluded from the report.)

Note 3: In 2024, LCY was still operating under the original organizational structure. Therefore, financial reporting and statistical information were still presented as five major business units.

1.1.2 Company Performance

LCY's operating performance in 2024 showed growth compared with 2023. This was primarily due to the recovery of rubber sales in the European and US markets, increased demand from semiconductor customers in the Electronics Materials BU, and the disposal of ownership of land in Hsinchu, which enhanced asset value.

Unit: million

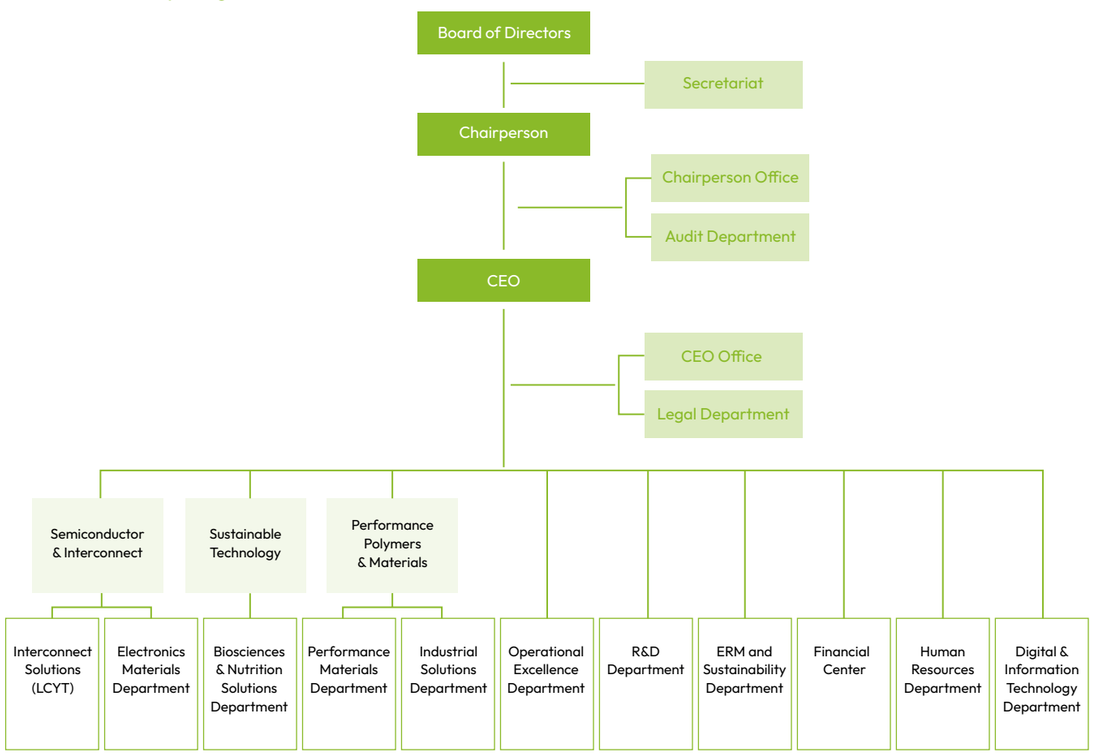
Category	2024
Capital	0.292
Consolidated revenue	51,088
Gross profit	6,628
Corporate income tax	793
consolidated net income after taxes (NIAT)	2,277
After-tax earnings per share (Unit: NT$)	227,651
Net asset value per share (Unit: NT$)	337,674
Employee salary and benefits	3,306

1.2 Sustainable Governance

1.2.1 Corporate Governance

LCY is committed to establishing a robust corporate governance system, adhering to laws and regulations at all locations, and implementing honest and ethical business practices. Our commitment is to foster a corporate culture rooted in integrity and accountability. We will continue to uphold the highest standards of business integrity at the operational level while developing an effective governance mechanism. Our goal is to serve the long-term interests of the company and its shareholders while fulfilling the group's social responsibilities. By establishing an appropriate internal control system, we can ensure that the company's internal rules are consistent with external regulations and are thoroughly implemented. This approach will reduce operational risks and achieve sustainable corporate governance.

LCY Chemical Corp. Organization Chart



* LCY Technology Corp. (LCYtech) is an independently listed company.

** In 2024, the Environmental Risk Management Department was renamed the Department of Environmental Risk Management and Sustainability Development; the department was incorporated into the Sustainability Development Department, which previously reported to the Office of the CEO.

Board of Directors

The functional duties and powers of the shareholders' meeting of LCY Chemical Corp. are exercised by its board of directors. The board is the highest governing body that is responsible for overseeing the overall operational responsibilities and evaluating the results of management's policy implementation. To ensure a robust and effective board, the board meets at least once a quarter to review business strategies and business reports. The board consists of three directors, each serving a three-year term. The directors are appointed by the company's juristic person shareholders and bring diverse expertise in business, law, finance, and accounting. In addition to their deep industry knowledge, the board includes individuals of different nationalities, strategically selected to capitalize on their different perspectives on global market trends. This diversity aims to cultivate a breadth of decision-making and perspectives.

The board is responsible for: 1. Formulating business strategies; 2. Reviewing and approving key regulations and contracts; 3. Appointing and removing managerial personnel; 4. Establishing or dissolving branch offices; 5. Preparing budgets and financial reports; 6. Authorizing the establishment of bank accounts; and 7. Exercising other powers as prescribed by law.

The chair is unanimously appointed by all directors and represents the company. The directors must adhere to LCY's Codes of Ethical Conduct and Anti-Bribery Policy. In addition, the directors have signed and agreed to the Anti-Bribery Management Compliance Statement and are prohibited from participating in situations that could pose a conflict of interest with the company. The directors undergo comprehensive corporate governance training, including Anti-Corruption and Anti-Bribery Advocacy, as well as Prevention of Insider Training, Changes in Insider Shareholding, and Short-Term Trading. The board convened seven times in 2024, with an average attendance rate of 100%.

Chairman **T.H. Hong**

MBA, Preston University, US

Gender: Male

Age: > 51

Director **Clark Feng**

Bachelor's degree, Peking University; MBA, Columbia University
KKR Managing Director, Private Equity

Gender: Male

Age: < 51

Director **Charles Wei**

Bachelor of Business Administration, Fu Jen Catholic University

Gender: Male

Age: > 51

Note: The board serves three-year terms (January 2025 to January 2028).

1.2.2 Sustainable Operations

LCY has established the ESG Sustainability Strategy Committee (ESG SSC) and the Ethics Management Committee, both of which report directly to the board. The committees provide regular updates to the board and operate under its oversight. In addition, in order to enhance resource allocation and ensure efficient use of resources, the board has the authority to establish additional functional committees as needed and deemed appropriate.

The ESG SSC was established to oversee and manage areas such as environment, health and safety, corporate social responsibility, governance, sustainable development, and other relevant public policy issues. The committee is chaired by the chairman and vice-chaired by the chief executive officer. In addition, the various business units provide regular reports to the board and receive oversight and input from the board. The reporting and oversight structure ensures that LCY's sustainable development plan aligns with the core capabilities of the business. The directors further enhance their understanding, skills, and experience in sustainable development issues through regular updates provided by the ESG SSC. In 2024, the committee provided four reports to the board detailing the annual ESG plan formulation and its outcomes, which encompassed aspects such as carbon management and green transformation strategies related to carbon reduction.

The ESG SSC oversees four key cross-functional working groups: Green Transformation, Social Inclusivity, Employee Care, and Corporate Governance. The working groups bring together teams from sales, R&D, and manufacturing sites to collaborate on carbon reduction targets to mitigate climate risks. The ESG SSC has set mid-term targets to reduce carbon emissions by 42% by 2030 (original target was 30%) <Note 1> and long-term targets to achieve net-zero emissions by 2050. These targets have been approved by the board of directors.

Note 1: In 2024, LCY's ESG SSC proposed resetting the company's greenhouse-gas (GHG) emissions base year to 2021. This decision was based on the following considerations: Since 2020, the Group has undergone significant expansions in capacity and made international acquisitions, including the acquisition of Bio-Amber and the construction of a new emulsion styrene-butadiene rubber (ESBR) production line. These activities resulted in a historic peak in GHG emissions in 2021, making that year the most accurate reflection of the organization's current emissions profile. The proposed adjustment follows guidance from the Science Based Targets Initiative (SBTi) and aligns LCY's base year with those of other leading Taiwanese petrochemical companies. The plan to revise the base year was formally presented at the 2025 ESG report kick-off meeting, where the Group Chairman emphasized LCY's responsibility, as a key player in Taiwan's petrochemical sector, to strengthen its decarbonization commitments. At the Chairman's direction, the company also raised its 2030 GHG-reduction target to 42%. These changes were reported to the board in the first quarter of 2025 and were officially approved, confirming 2021 as the new base year and elevating the 2030 reduction goal to 42%.

ESG Sustainability Strategy Committee (ESG SSC)

Sustainable Performance

LCY participated in the "CTBC x MVGX Empirical Financial Rating of Corporate Decarbonization Transition" and earned the highest Platinum certification. This rating—jointly launched by MVGX Tech and the Asia Carbon Neutrality Assessment Center (ACNAC), endorsed by the International Organization for Standardization (ISO), and verified by TÜV SÜD—carries strong international credibility. LCY's platinum rating places it among the top 10% of organizations recognized for their outstanding achievements in carbon-neutral operations, a testament to LCY's concrete results in operational carbon reduction and low-carbon transformation. In addition, LCY received an "A" rating from CRIF Taiwan's ESG evaluation in 2024. Both ratings cover all of LCY's domestic and overseas operations, underscoring the company's effectiveness in embedding sustainability across its global business operations.

In international disclosure ratings, LCY received "B" (management level) scores in both the Climate Change and Water Security categories of the 2024 CDP assessment, and achieved an "A" (leadership level) rating in Supplier Engagement. The CDP framework evaluates companies across governance, strategy, risk management, and target-setting to measure overall performance in carbon management and resource allocation. The results highlight LCY's sustained progress and the manifested results in GHG management, environmental disclosure, and supply-chain sustainability initiatives.

In the 2024 EcoVadis Sustainability Ratings, LCY was awarded the Committed Badge. The EcoVadis assessment evaluates a company's overall performance across four key areas: environment, labor and human rights, business ethics, and sustainable procurement. This recognition highlights LCY's ongoing investment in ESG practices and its alignment with international standards, underscoring the company's dedication to strengthening supply chain sustainability and fulfilling its corporate social responsibility.

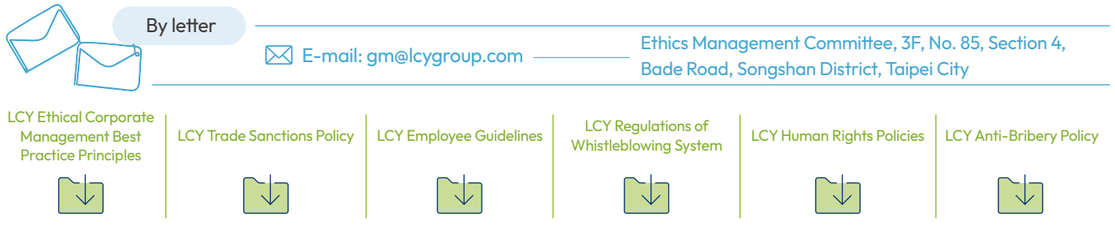
In 2024, the Sustainability Development Department established LCY's ESG management platform and completed training and hands-on implementation across all business units and plants. The platform integrates short-, medium-, and long-term sustainability targets with carbon-emissions management and reduction project tracking, supporting the company's progress toward green transformation. ESG topics and strategies are annually reviewed and adjusted on a rolling basis. Environmental metrics, including air quality, wastewater, and waste management, are also incorporated into the platform. Feedback from employees from all business units and plants have been overall position for the 2024-2025 period. In 2024-2025, the team completed ESG promotion/education and training for 11 factories across business units, helping to embed ESG principles deeply into the company's culture.

In January 2022, the board voted to establish the Ethics Management Committee, in line with international standards and the United Nations' advocacy for ethical corporate governance. This initiative is central to supporting LCY's sustainable development. The committee, which reports to the board, is tasked with developing integrity management policies, anti-corruption/anti-bribery strategies, and overseeing the enforcement of the provisions set forth in Article 17 of the Ethical Corporate Management Best Practice Principles. The committee is required to report annually to the board and to meet as needed.

The Ethics Management Committee is composed of heads from the Finance Division, the Human Resources Department, and the Compliance Division. The committee chair is elected by mutual recommendation of its members and is tasked with appointing a secretary to support its work. In 2024, the committee was chaired by the head of the Human Resources Department. In accordance with regulations, the Ethics Management Committee also convened as required during the year.

Ethical management is an integral aspect of LCY's identity, ingrained in our corporate DNA. We uphold a firm zero-tolerance stance against bribery and corruption. In 2024, we took further strides by publishing the United Nations Global Compact, LCY Employee Guidelines, Anti-Bribery Policy, Regulations of Whistleblowing System, and LCY Human Rights Policies on our official website. This disclosure serves to inform and guide employees, subsidiaries, and external stakeholders in aligning their actions with the established guidelines. LCY offers comprehensive integrity education and training for directors, employees, and consultants. In 2024, the company offered advanced courses on online insider-trading awareness, programs on corporate governance and corporate social responsibility with case studies, and company-wide anti-corruption training. The total participation reached 1,861 training hours, with a 100% pass rate. Furthermore, all newly appointed directors and managers completed and signed 22 Anti-Bribery Management Compliance Statements.

The company provides a reporting channel for individuals to disclose violations of ethical conduct, inappropriate behavior and bribery. Whistleblowers are encouraged to provide specific evidence and may choose to report anonymously or disclose their identity. The company encourages reports based on good faith or reasonable belief and ensures the confidentiality of the whistleblower's identity and the content of the report. It also guarantees that whistleblowers will not face undue consequences for their disclosures. Upon receipt of a report of unethical behavior, the CEO will direct the formation of a cross-departmental investigation team, including, at a minimum, the head of Internal Audit. The results of the investigation are then presented to the Ethics Management Committee for review.



1.3 Regulatory Compliance

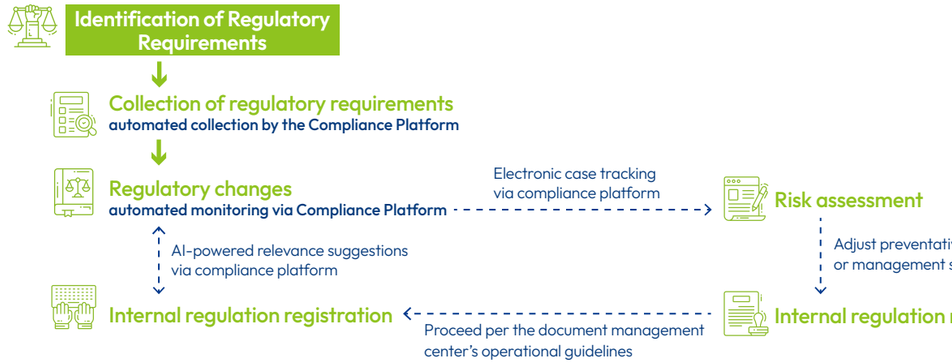
1.3.1 Compliance Culture

LCY's domestic compliance risks are managed by the respective responsible units, which identify applicable regulations within their areas of oversight. In 2024, the company identified 944 regulatory items to ensure all operations complied with the latest legal requirements. LCY also reinforces employee awareness and adherence through training sessions, internal communications, and company-wide announcements.

Previously, these relevant compliance units relied on subscribing to government and regulatory e-newsletters, attending external seminars, and conducting periodic manual reviews and tracking to stay updated on regulatory changes. This process was time-consuming and labor-intensive.

To improve efficiency and digitize compliance management, LCY launched its Intelligent Regulatory Compliance Operations Management System ("Compliance Platform") in 2024. The new platform covers all applicable domestic regulations and risk areas and is now fully operational. Key functions of the Compliance Platform include:

1. Serves a single source of applicable domestic regulations, eliminating the need for employees to search multiple government agency websites.
2. The platform automatically alerts users to external regulatory changes and uses an AI module to suggest links and relevance between external regulations and internal policies. The system sends each case to the appropriate unit for review and immediate action, helping ensure operations remain compliant. The measures are aimed at mitigating risks and reducing the likelihood of penalties or larger losses.
3. The platform generates electronic reports and enables the efficient, paperless tracking of compliance activities. This significantly reduces the administrative workload and provides management with a clearer, real-time view of regulatory compliance.



Results and Goals

Metrics	2024 Performance	2025 Target
1. Completion rate of training in key compliance areas ・ Integrity/Anti-corruption ・ Information security ・ Fire safety and response	Completion rate **100%**	**100%** Annually
2. Tracking of internal regulation amendments	**1023** internal regulation amendments	Number of amendments implemented
3. Material violation cases in business ethics (Fines > NT$1 million)	**0** cases	**0** Cases Annually
4. Material Violation Cases in Fair Trade (Anti-Trust) / Personal Data Protection (Fines > NT$1 million)	**0** cases	**0** Cases Annually

Continued enhancement of EHS compliance and risk control/management

In line with our core value of compliance and commitment to delivering high-quality products and services, LCY ensures that our operations adapt to regulatory changes to meet the latest policy trends. In recent years, regulatory authorities have strengthened their oversight of harmful air pollutants by implementing new emission limits for stationary pollution sources. They have also raised standards for water discharge and established more rigorous targets for energy conservation and carbon reduction. In response, our facilities have adopted a range of measures. These include transitioning to cleaner fuels, such as replacing heavy oil with natural gas, installing enclosed hoods to collect emissions in production lines, optimizing processes, and upgrading to more energy-efficient equipment. In addition, all of our facilities comply with the Regulations of the Labor Health Protection, which require plants with more than 50 employees to appoint dedicated medical personnel to provide on-site clinical services. In 2024, LCY operational sites underwent four environmental inspections by regulatory authorities, during which a total of ten environmental violations were cited. Each site has completed a root cause analysis of the identified issues, conducted cross-plant experience sharing, and developed improvement strategies. Systematic corrective and preventive actions have been implemented to prevent recurrence and enhance overall environmental management performance. Please refer to 3.1.2 Environmental Regulatory Compliance for details. Please refer to 4.5.1 Occupational Safety Management for further information regarding socio-economic-related violations.

1.3.2 Risk Management Strategies and Sustainability Initiatives

LCY prioritizes stakeholder interests and is committed to advancing sustainable operations and building a systematic, forward-looking risk management framework. The ERM & Sustainability Department oversees enterprise risk management, including operational risks, process safety, climate change, and environmental impact. The board is the top governance body and provides regular oversight to ensure risk management strategies are effectively integrated into business decisions and aligned with the company's long-term growth.

In 2024, the global chemical industry continued to face significant challenges. Factors such as intensifying extreme weather events, as well as stricter energy and carbon regulations, have driven companies to accelerate carbon reduction and net-zero transformation initiatives. In addition, unstable raw material supplies, rising technical barriers to new products, and ongoing geopolitical uncertainly are posing risks to operational stability and supply chain management. To strengthen its overall resilience, LCY has enhanced its risk identification and response capabilities, providing a solid foundation for uninterrupted operations.

LCY continues to advance green operations through a series of energy-saving and carbon-reduction initiatives. These efforts include optimizing process parameters, replacing older equipment, and implementing waste-reduction programs to lower carbon-emission intensity. The company has also launched assessments for renewable-energy adoption and is planning a phased introduction of green power to meet the requirements of the carbon-fee system and the EU's Carbon Border Adjustment Mechanism (CBAM). LCY is strengthening sustainable procurement standards and evaluating suppliers' ESG performance across the supply chain to drive collaborative, low-carbon transformation upstream and downstream. This will help build a more resilient, low-carbon value chain.

In alignment with the 2050 net-zero target and the 2030 interim reduction strategy, LCY is digitizing its risk management processes. In 2024, the company introduced a system for monitoring VOC fugitive emissions and for digital tracking and tiering. This system integrates maintenance and alert data, enhancing early-warning capabilities for equipment abnormalities. LCY has also deployed dynamic positioning and real-time alert technologies to improve the management of forklifts, personnel, and other high-risk activities on the operations side. This management system promotes energy efficiency and operational safety.

LCY continues to improve its Process Safety Management (PSM) program, focusing on operational risk control and process safety. In 2024, the company strengthened its root-cause analysis for incident investigations and refined its Management of Change (MOC) system. Every process or equipment modification undergoes a full risk assessment and cross-department review before implementation. Furthermore, LCY implemented a dynamic inventory management system for hazardous materials and reinforced its EHS joint-audit mechanism by deploying cross-functional teams to conduct regular on-site inspections and improve risk identification and control across all facilities.

Guided by its dual pillars of green operations and digital governance, LCY will continue to integrate risk management with sustainability governance. With oversight from the board and dedicated departments, the company is committed to proactively managing external challenges and creating long-term value, reinforcing its position as a resilient, compliant, and responsible enterprise.

Risk Categories and Audit Mechanism

Risk Category	Management Procedure	Assessment/Audit Frequency	Highest Level of Risk Management
Assets FX transaction Investment	Finance Division's recurring meetings	Perform audits in accordance with the annual audit plan and daily audit activities. Track remediation of anomalies. Before issuing the report, communicate with the audited unit to verify audit-related matters. If found to be a material issue, it may be reported directly to the Chairman	Finance Division's highest level of leadership, Board of Directors
Regulatory Compliance	Report to the board at least annually		Board of Directors
Information Security	1. The IT Division meets twice a year 2. The Information Security Committee meets once a year	In accordance with the annual information security plan, the Information Security team in the IT Division works with external consultants to conduct audits. Based on the audit results, communication takes place and the audited department develops improvement plans. Follow-up is conducted based on the responses. Audit and remediation results are regularly reported to the Information Security Committee and the board (annually).	Information Security Committee Board of Directors
Environmental and occupational safety	The Environmental Risk Management Department meets on a monthly and quarterly basis	ISO 45001 & ISO14001 management review meeting The Environmental Risk Management Department carries out ad hoc inspections of the plants and conducts on-site sampling review	Environmental Risk Management Department & Human Resources' highest level of leadership
Emerging infectious disease	Hold review meetings	Hold project/working group meeting as needed	Environmental Risk Management Department & Human Resources' highest level of leadership
Climate change	Conduct consistent target reviews and risk assessments in conjunction with the ESG SSC	Consolidate the daily management activities of each plant related to climate change and energy issues, ensuring the quality and effectiveness of plan implementation. Provide a report to the chairman every six months.	Board of Directors
Ethical management	Report to the board at least annually	The Ethics Management Committee reviews and supervises the reported incidents	Board of Directors

Risk Management Mechanism

Chairman (including Audit Office)
- Define risk management policy, structure, and culture.
- Ensure the effectiveness of risk management mechanisms and allocation of resources.

Senior leadership
- The general manager and vice manager of each business unit form the implementation coordination group.
- Implement the risk management policy as defined by the board.
- Facilitate cross-departmental risk management interaction and communication

Headquarter management offices
- The Environmental Risk Management Department is responsible for risk assessment, planning, and execution.
- Consolidate risk management activities' implementation results
- Support and monitor the risk management activities of the company's branches and subsidiaries.
- Determine the risk categories and recommended risk assumptions based on environmental changes.
- Conduct risk-adjusted performance measurement and alignment.

Specialized staff
- Implement daily risk management activities
- Conduct self-assessments of risk management activities

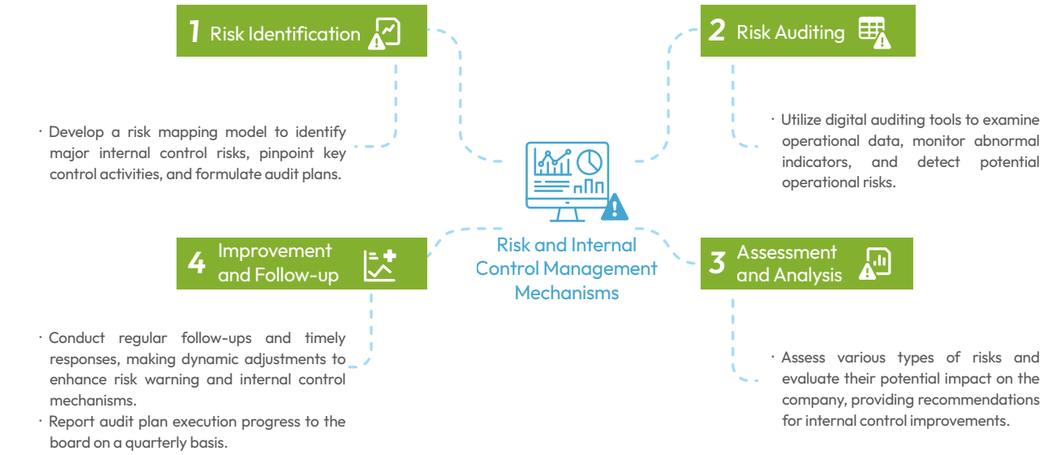
1.3.3 Internal Audits

Internal Audit Operations

The audit team refers to the "Regulations Governing Establishment of Internal Control Systems by Public Companies" to establish its internal control system. This is to reasonably ensure the effectiveness and efficiency of our operations, as well as the reliability, timeliness, transparency, and compliance with relevant laws and regulations. The audit team prepares an annual audit plan that clearly defines audit items in line with regulatory requirements and the company's own risk assessments. Any irregularities identified are discussed in depth with the responsible units, with concrete improvement measures proposed and tracked until fully resolved.

Each quarter, audit reports are presented to the board to provide updates on plan execution and follow-up actions. Any significant violations or potential major losses for the company are immediately reported to the CEO and the board. This ensures the effectiveness of the internal control system and reinforces confidence in the company's corporate governance.

Risk and Internal Control Management Mechanisms



Audit Focus Areas

- Operational Audits

  Safeguard the company's key internal control process risks by reviewing the major operational elements such as the eight cycles of the enterprise, information management operations, stakeholder transactions, lending of funds, and guarantees/endorsements.

- Digital Transformation of Auditing
  - Gradually develop a digital audit model that utilizes system data analytics and a dashboard of key risk indicators.
  - Analyze essential operating data and monitor abnormal indicators to ensure compliance, reasonableness, and operational effectiveness, while providing improvement recommendations when needed to enhance audit efficiency and impact.

- Training and Development

  Participate in seminars hosted by domestic management consultants and internal audit courses offered by major institutions (note). Take part in regular in-house training. In 2024, audit staff completed a total of 92 training hours, continually strengthening employees' professional skills and risk management capabilities.

  Note: "Major institution" refers broadly to associations, organizations, and academic institutions recognized by the Financial Supervisory Commission.

Audit Implementation Outcome

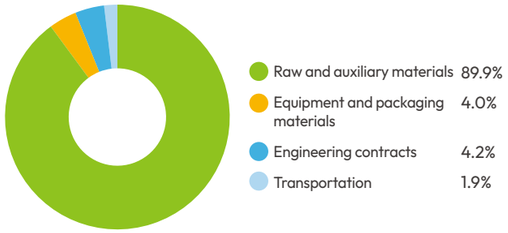
In 2024, LCY carried out 30 audit projects covering all internal control cycles and operations. Each audit was conducted in compliance with legal requirements and company policies to ensure the effectiveness of the company's internal control system.

1.4 Supply Chain Management

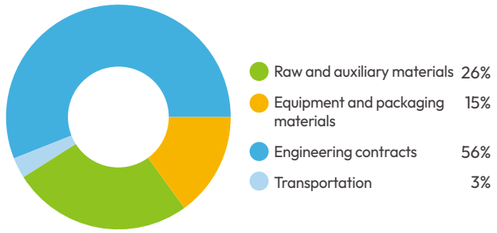
1.4.1 Supply Chain Overview

Across LCY's operating sites in Asia (including Taiwan and mainland China) and the US, the company engages with 1,186 and 422 suppliers, respectively. These suppliers are categorized into four main categories: raw and auxiliary materials, equipment and packaging materials, engineering contracts, and transportation. The total procurement amounts in 2024 for the Asia and US operating sites were NT$35,312,307,000 and NT$3,613,611,000, respectively. In Asia, the "raw and auxiliary materials" category represents the largest procurement category, accounting for more than 90% of the total procurement amount. In the US, "raw and auxiliary materials" is also the largest procurement category, accounting for more than 70% of the total procurement amount. In these two key regions, more than 90% of sourcing in Taiwan is local, while other areas maintain a local procurement ratio of nearly 70%, with suppliers concentrated in Taiwan, Asia, and the Americas.

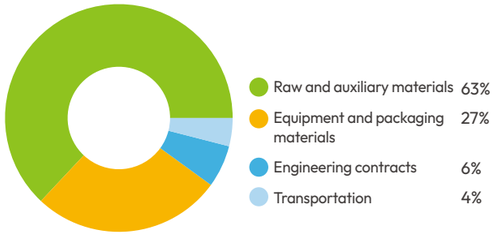
Suppliers for Asia Operations/Procurement by Category (%)



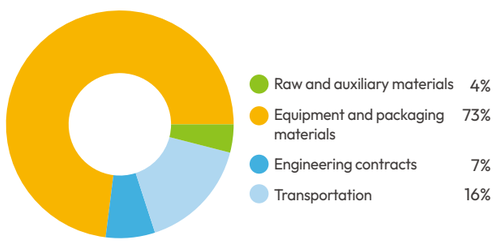
Asia Operations/Supplier Distribution by Category (%)



Suppliers for US Operations/Procurement by Category (%)



US Operations/Supplier Distribution by Category (%)



Suppliers for Asia Operations	No. of Suppliers	Percentage	Suppliers for US Operations	No. of Suppliers	Percentage
Taiwan	577	48.7%	Taiwan	-	0%
Asia	593	50.0%	Asia	2	0.5%
Americas	13	1.1%	Americas	416	98.6%
Europe	3	0.3%	Europe	4	0.9%
Others	-	-	Others	-	-
Total	1186	100%	Total	422	100%

1.4.2 Supply Chain Management Procedures

Prior to formalizing agreements with suppliers, LCY conducts a thorough evaluation and communication process to assess supplier status and expectations. Suppliers are also required to sign the “Declaration for Business Partner Supply Chain Security” and the “Honesty and Integrity Transactions Undertaking.” Once the partnership is established, LCY maintains an open communication channel with suppliers through an annual audit and evaluation process to ensure the integrity of the supply chain operation. Throughout the partnership, LCY's plants can report any issues related to quality, quantity, industrial safety, environment, and other aspects to LCY’s supplier management unit through internal communication channels for prompt resolution. In cases where employees are found to be disrupting procurement discipline, suppliers are encouraged to disclose such misconduct to LCY’s relevant management unit via mail or email, providing the supplier’s official name, contact information, and supporting records and evidence of the misconduct.

Reporting mailbox: P.O.BOX 36-587 Taipei Guangfu, Taipei City 105936 (Audit Office)
- E-mail: gm@lcygroup.com

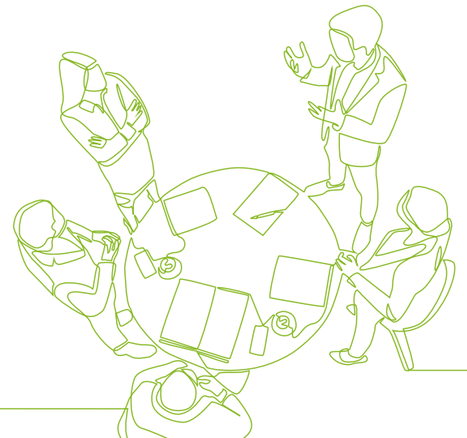
Supplier Evaluation and Management Protocol

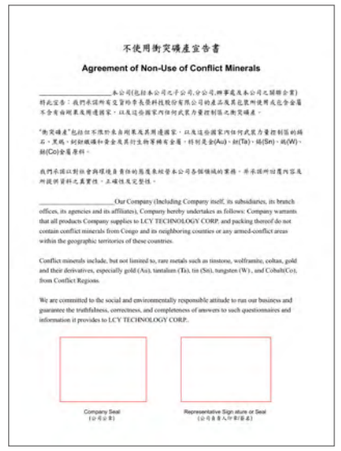
Management Procedures	Pre-Partnership Evaluation	Partnership Evaluation & Guidance		
		Risk Assessment	Assessment and Audit	Improvement Tracking
Principles and Mechanism	• Supplier Evaluation Procedures • Authorized Economic Operator (AEO) Supply Chain Business Partner Evaluation and Control Protocol	Conduct five aspects of supplier evaluation using the Supplier Investigation Report Form based on the Supplier Evaluation Procedures.	Key suppliers, assessed and defined by the factories during the year, are subject to evaluation and audit	The supplier is asked to make improvements to address major deficiencies based on the results of the assessment.
Management Measures	Qualified supplier is required to sign the following: • Honesty and Integrity Transactions Undertaking • Declaration for Business Partner Supply Chain Security • Legitimacy and Integrity Declaration for Business Partner	Identified supplier risks are included in follow-up assessments.	Plants and procurement conduct supplier audits and evaluations based on the five aspects of supplier management.	LCY monitors and tracks remediation; procurement from a particular supplier is withheld until remediation is completed. LCY provides training and guidance to contractors.

Ensuring the sustainable operation of our supply chain involves meeting high standards in occupational safety and hygiene, human rights, and moral principles, as well as minimizing environmental impact to support environmental protection efforts. In alignment with the Ethical Corporate Management Best Practice Principles applicable to the Board and all LCY employees, our suppliers are also expected to adhere to relevant supplier management procedures. This approach fosters effective partnerships and growth across all five aspects of supply chain management.

In conflict minerals avoidance, the copper foil plant adheres to the principles of due diligence outlined by the OECD. This involves following internally established procedures for supplier assessment and procurement operations. Suppliers are required to sign the Agreement of Non-Use of Conflict Minerals and are expected to submit an annual update in accordance with the company's internal policy.

Declaration of Non-use of Conflict Minerals (example)





不使用衝突礦產宣告書

Agreement of Non-Use of Conflict Minerals

_____ Our Company (including Company itself, its subsidiaries, its branch offices, its agencies and its affiliates), Company hereby undertakes as follows: Company warrants that all products Company supplies to LCY TECHNOLOGY CORP. and packing thereof do not contain conflict minerals from Congo and its neighboring countries or any armed-conflict areas within the geographic territories of these countries.

Conflict minerals include, but not limited to, rare metals such as tinstone, wolframite, coltan, gold and their derivatives, especially gold (Au), tantalum (Ta), tin (Sn), tungsten (W), and Cobalt(Co), from Conflict Regions.

We are committed to the social and environmentally responsible attitude to run our business and guarantee the truthfulness, correctness, and completeness of answers to such questionnaires and information it provides to LCY TECHNOLOGY CORP.

Company Seal

Representative Sign ature or Seal

Metal source list:

Metal (Ta - 鉭 Sn - 錫 W - 鎢 Au - 金 Co)	Country	Smelters and Refiners	City
NA			

Please fill out the following form when your product is not come from Conflict-Free Smelters.

material name	Model	Country	Smelters and Refiners	The Name and the City of ore excavation	Phase-out Schedule (YYYY/MM)

2172-VDR-01.09

Five Aspects of Supply Chain Management

Quality Management	Manufacturing Capacity	Equipment Inspection	Environment Management	Social Responsibility
• Quality inspection • Subcontractor Assessment • Disposal of non-conforming products • Customer complaint mechanism	• Complete SOP • Manufacturing process control • Response measures	• Equipment maintenance and calibration • Maintenance system • Establish inventory for important spare parts	• Disposal management for air, water, and waste materials • Management of hazardous materials • Regulatory Compliance • Employee training	• Prohibition of child labor • Diversity and equality • Employee complaint mechanism • Overtime and occupational injury • Impact on the local community • Employee training

Evaluation of New Suppliers

LCY actively seeks new suppliers each year in response to user, policy, and product demand, as well as the departure of former suppliers. LCY serves more than 400 companies worldwide, many of which are world-class global manufacturers. As our customers strive to improve product and supply chain security, we are also committed to providing guaranteed services to our customers. LCY has established an internal "Authorized Economic Operator (AEO) Supply Chain Business Partner Evaluation and Control Protocol" in accordance with the "Regulations Governing the Certification and Management of Authorized Economic Operators" by the Customs Administration of the Ministry of Finance, which initiated the AEO mechanism in 2013. While integrating our internal principles to properly implement the AEO policy, we also conduct risk assessment and planning for new suppliers and apply the same standards to existing suppliers to fully implement our supply chain security management system. Preference will be given to suppliers with international standard certifications (including ISO 9001, ISO 14001, IATF 16949, ISO 45001, etc.) to improve the service standards of our supply chain. Additionally, considering the impacts of climate change on energy, greenhouse gases, and resources, we will continue to focus on suppliers with relevant international standards certifications (including ISO 50001, ISO 14064, ISO 14067, etc.) as means of evaluating the prioritization of partnership. For major raw material suppliers in the copper foil plant, apart from completing the Supplier Social Responsibility Self-Assessment Questionnaire, suppliers should also provide a Declaration on Environment and Social Responsibility and an Agreement of Non-Use of Conflict Minerals.

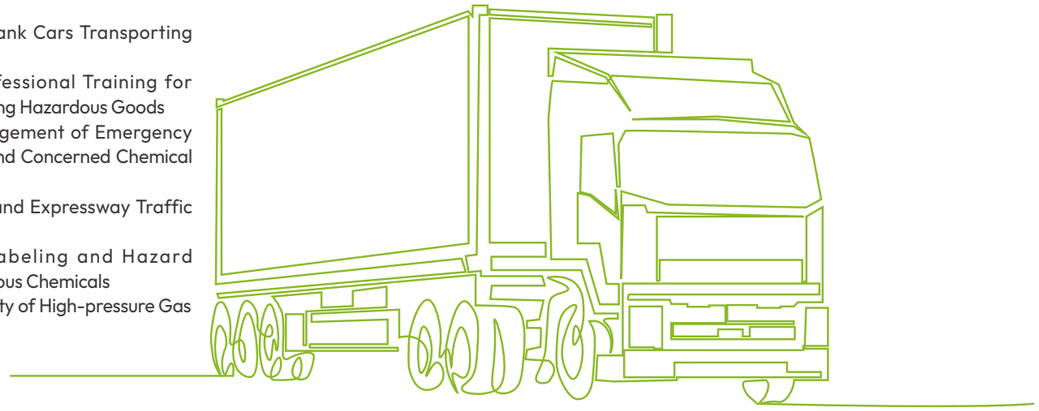
New Supplier Evaluation Process

Management of Carriers

Much of LCY's supply chain involves the transportation of chemical feedstocks and products. As a result, we emphasize the safety management of our partner carriers to ensure they are compliant. In accordance with our Management Guidelines for Transportation Operations, inspection procedures are in place to ensure the safety of product loading and unloading operations; the procedures cover transportation safety from the arrival of the carrier vehicle at the designated plant or location for pick-up/unloading to departure, as well as the notification process for transportation outside of our facilities.

Important Transportation Regulations

- Designated Routes for Tank Cars Transporting Hazardous Goods
- Regulations on the Professional Training for Personnel Road Transporting Hazardous Goods
- Regulations on the Management of Emergency Responders of the Toxic and Concerned Chemical Substances
- Regulations on Highway and Expressway Traffic Control
- Regulations for the Labeling and Hazard Communication of Hazardous Chemicals
- Regulations for Labor Safety of High-pressure Gas



Unit	Carrier	LCY Factory - Facility Department	LCY Factory - Occupational Safety Team	LCY Procurement Division
Responsibility	1. Ensure that industrial safety personnel and qualified drivers (certified with Hazardous Goods Delivery Personnel Training Certificate) are in place 2. Conduct regular safety meetings between management and drivers 3. Conduct blood pressure and alcohol tests before each driver's assignment 4. Use GPS and CCTV to check the drivers' on-the-job performance 5. Conduct regular vehicle inspection and maintenance 6. Orientation and on-the-job training 7. Conduct an emergency drill every six months	8. Inspect driver qualifications and vehicle equipment upon entry to the plant 9. Responsible for inspection before, during, after loading, and before leaving the factory	10. Convene advisory organization meetings 11. Conduct driver training 12. Security guard observes if the carrier driver is drinking and driving 13. Audit incoming vehicles	14. Conduct annual audits and evaluations on carriers

Management of Engineering Contracts

Since 2022, LCY's Engineering Contracting Department has been actively developing the Engineering Intelligence Management Platform (EIM), which integrates electronic procurement practices with the Engineering Project Management Information System (EPMIS). This platform is designed to improve the efficiency and effectiveness of engineering management while supporting the company's Sustainable Development Goals (SDGs). By fostering a transparent and fair competitive environment, LCY strengthens stakeholder trust and enhances occupational health and safety (OHS) management within engineering projects, aligning fully with the social responsibility requirements outlined in the company's ESG report.

To ensure optimal performance and reliability of the platform, as well as to meet future sustainability-reporting requirements, LCY has moved the system's launch to the third quarter of 2025 to ensure the delivery of an enhanced user experience. For contractor management, the company uses Power BI to link and analyze bidding data. These data insights facilitate the precise identification of key project categories and cost distributions, thereby informing the selection of annual contracting agreements. At the same time, the company refined the process for arranging Erection All Risks Insurance following project contracting. LCY streamlines operational procedures with contractors, ensuring the optimality of insurance policy types and coverage limits. The company also fully accounts for flexibility in project changes, such as cost adjustments and extensions of completion deadlines. The aforementioned effort has effectively improved the efficiency and precision of management processes, reducing human error along the way. It also further strengthened our competitive advantage, enhanced partner satisfaction, and provided strong evidence of governance best practices for the ESG report.

LCY is committed to environmental sustainability and collaborates closely with contractors to establish a green supply chain of chemical products. In strict accordance with the ISO 20400 Sustainable Procurement Guidelines, the company has established Green Procurement Standards to ensure that construction activities minimize any negative impact of building materials on health and safety, natural resources, and the ecological environment. In 2024, LCY adopted eco-friendly building materials in the roof-waterproofing project at its Dashe plant, which effectively reduced environmental impact and significantly enhanced its green competitiveness. This achievement is documented in the relevant section of the ESG report on environmental impact.

Looking ahead, LCY will continue to advance the digital transformation of engineering project management, collaborating with partners to achieve an efficient, transparent, and green project-management model. The company remains dedicated to creating greater value for society and the environment, actively supporting the UN SDGs and pursuing its long-term target of net-zero emissions.

1.4.3 Supply Chain Audit

The Procurement Division is tasked with coordinating the annual supply chain audit for LCY's major suppliers. The determination of major suppliers is a collaborative effort involving the factory, quality control section, and procurement, considering the feedstock used throughout the year. All feedstock suppliers for medical-grade products fall under the category of major suppliers. The audit, assessing the five aspects of supply chain management, is conducted by the factory, quality control section, and Procurement Division. In the event of significant deficiencies, immediate improvements are mandated from the supplier, closely monitored and tracked by LCY. No further procurement is allowed until the necessary improvements are implemented. In 2024, there were 112 key suppliers, 98 of whom were audited, representing an 87.5% audit rate. Looking ahead, LCY will continue to review and manage key suppliers while expanding evaluations of other partners to include environmental management and social responsibility. These efforts aim to improve the overall quality of supply chain management, strengthen engagement with suppliers, and advance sustainability practices.

Note: The audited parties are suppliers for the Taiwan, Huizhou, AR, Copper Foil, and Zhenjiang Plants. Suppliers for the North American region will be incorporated in the future.

1.5 Information Security

1.5.1 Information Security Policies

Information security and the protection of sensitive data have always been a priority for LCY, one that is continually emphasized and strengthened. This commitment is a testament to our dedication to our clients and partners. LCY establishes and enhances systems and deploys information security tools based on differential analysis and risk assessment. LCY establishes and enhances systems and deploys information security tools based on differential analysis and risk assessment.

Category	2025 Targets
Information Security Management System (ISMS)	Strengthened and implemented management procedures at sites where the Information Security Management System (ISMS) is deployed. Conducted ISO 27001:2022 review to ensure alignment with evolving international standards. Establish an information security management framework among our affiliated companies to ensure the comprehensive implementation of the group's information security policies, ensuring smooth information exchange and maintaining the requisite flexibility required for the organization.
Cybersecurity	Upgraded the NIST Cybersecurity Framework (CSF) Maturity Assessment from version 1.1 to 2.0. This upgrade emphasizes the integration of information-security "governance and enterprise strategic planning" with corporate objectives. It also enhances controls across the Identify, Protect, Detect, Respond, and Recover functions. Enhance the security design of cloud services and establish robust procedures and standards. Improve endpoint security and response capabilities. Established and integrated a global cybersecurity risk-alert platform.
Data Protection	Maintain the existing sensitive data protection system by implementing data classification, categorization, labeling, and protection. Optimize the current data loss prevention (DLP) measures. Conducting evaluations of automated tools for sensitive data protection to prepare for future optimization of information protection measures.

1.5.2 Information Security Management Procedures

Our goal is to align information security governance with the organization's vision and goals. We integrate information security management across four key dimensions, starting with project implementation and establishing a security organization and framework. This enables us to meet our management commitments and provide adequate resources. By incorporating risk management and integrating resource processes, we can assess the most cost-effective approach to achieving organizational goals and enhancing customer confidence. To enhance personnel awareness of information security, LCY conducts annual cybersecurity awareness training for all employees. This training aims to promote company policies, increase understanding of current trends and techniques in cyber attacks, and enhance employees' ability to recognize social engineering attacks and phishing websites. The goal is to reduce the harm caused by errors in clicking, using, or entering information, ultimately boosting our defense against cyber threats. The company also elevates its ability to respond to cybersecurity risks through personnel and equipment upgrades. Regular social engineering drills, incident response exercises, and backup drills are conducted to enhance corporate resilience, shorten response times, and improve the company's ability to handle unexpected cybersecurity incidents. To stay ahead of emerging information technology and business-environment changes, LCY completed the ISO 27001:2022 transition in 2024 and will undergo recertification in 2025. This initiative is designed to meet current corporate information security requirements and objectives, ensuring the ongoing protection of both corporate and customer information.

Since 2021, LCY has been proactively identifying and managing business-sensitive data/documents from a data life cycle perspective. Continuous efforts have been made to improve data identification, labeling, and protection. In addition, LCY has implemented DLP measures to achieve effective protection, detection, and response. This approach aims to protect both corporate and customer-sensitive data, ensure competitive advantage, and foster customer trust. Notably, the company reported zero incidents or complaints related to data breaches or loss of customer data in 2024.

Four Areas of Information Security Management

Establish InfoSec Organizational Structure

- Establish an Information Security Committee, with the Chairman/CEO serving as chair. Convene regular committee meetings
- Establish an Information Security Response Team and conduct annual drills
- Establish a communication and management framework for information security among affiliated companies

InfoSec Risk Management

- Conduct regular audits and improvement tracking for the ISMS
- Perform risk assessment
- Regularly convene the information security supervisory committee

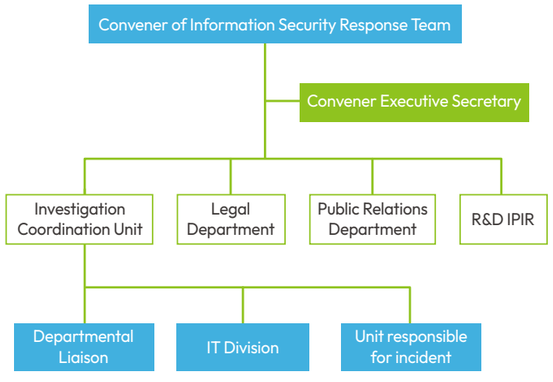
Enhance InfoSec Communication

- Appoint an information security liaison in each department; strengthen cybersecurity promotion and project execution

Personnel InfoSec Training

- Conduct annual cybersecurity awareness training for all employees
- Evaluate and improve results through social engineering drills

Information Security Response Team Organizational Structure



1.5.3 Information Security Implementation Results

- InfoSec newsletters and policy promotion > 80 times/year (10 sites)
- Education and Training: 2 times/year
- Education and training participants > 1,500
- Information security liaison > 120
- Social engineering drills: 16 times
- 100% participation rate in information security incident response drills
- Accounts involved in social engineering drills: > 2,380
- Access permission audits: 2 times/year
- Information security reports to senior management: > 1 time
- InfoSec risk assessment ≥ 1 times
- International InfoSec standard certification/verification ≥ 1 time
- Internal and external InfoSec audits ≥ 2 times

2.1 Cornerstone of Innovation 42
2.2 Sustainable Products and Services 43
2.3 Responsible Chemical Management 51
2.4 Digital Innovation 52

02

Leading Circular Innovation

LCY set up the first innovation hub in Asia for recycled materials in Nanzih, Kaohsiung as a platform for innovation, inspiration, and creativity. Devoting great effort to R&D innovation and increasing investments in equipment and facilities, we establish LCY Nanzih R&D Center as an international-grade innovation hub. At the same time, LCY also fosters R&D talent and employs almost 130 R&D professionals from fields such as chemistry, materials, chemical engineering, analysis, and even market development. Roughly 40% of the R&D Center staff hold doctorate degrees. Our employees aim for sustainability and circularity within the economy and the environment, and they are devoted as a whole to creating an industry value chain within the circular economy to ensure our vision for a greener future.

9% Revenue from green products reached NT$4,800,264,000, accounting for 9% of overall revenue

- Green Products

Achievements

	Previous: 2024 Targets	2024 Achievements
Annual sales of solvent recycling services	↑30%	↑65%
Growth rate of total water recovery from using MBR products on the market	+250%	+228%

Note 1: The base year for solvent recovery services is 2019, and the base year for MBR products is also 2019 (calculated from the order year; originally, 2020 was used as the base year for operating revenue).

Goals & Targets

As the previous short-term goals have expired, a new set of short-, mid-, and long-term goals have been redefined in this report:

	Long-term: 2030 Targets ←	Mid-term: 2027 Targets ←	Short-term: 2025 Targets
Annual sales of solvent recycling services	↑290%	N/A (adjusted based on downstream customer plant expansion schedule)	87%
Growth rate of total water resource recovery using MBR products	+510%	+380%	+290%

Note 1: The base year for solvent recovery services is 2019, and the base year for MBR products is also 2019 (calculated from the order year; originally, 2020 was used as the base year for operating revenue).

Note 2: Revisions to medium- and long-term targets for MBR products are based on: (1) Actual sales performance in 2024: With targets adjusted after reviewing reasons for under performance. (2) Intensified market competition: overall market capacity and pricing pressures were taken into account, resulting in more conservative growth planning.

Note 3: Adjustments to solvent recovery service sales targets reflect factors such as downstream customer plant expansions, requiring a reassessment of medium- and long-term goals.

2 Leading Circular Innovation

2.1 Cornerstone of Innovation

2.1.1 Innovative Management

Products R&D is primarily overseen by the LCY R&D Center. In addition to product development, the R&D Center also includes business units developing other branches of the product series. Innovative products aim to enhance resource efficiency for clients through product, process, and business model innovation. Our R&D management, spanning six stages, integrates considerations like environmental health and safety, technological development, market assessment, patent risks, and compliance. This approach fulfills the fundamental requirements for managing the schedule, budget, and compliance of product development. Additionally, LCY implements a six-stage R&D management process and has an intellectual property management system in place. When product development reaches a certain level, employees can register patentable and commercially valuable R&D results as patents or trade secrets through IP management. This not only protects the company's R&D achievements but also provides bonuses to inventors. A total of 148 patent applications have been filed, and over 100 employees have received IP bonuses from 2014 to 2024.

The Six Stages of LCY's R&D Management

0 / Concept & Analysis	• Conduct preliminary market research, competitive analysis, and capability alignment to understand customer needs and market opportunities. Perform Real-Win-Worth assessment analysis.
1 / Market & Technology Concept Validation	• Conduct detailed market research and competitive analysis to understand customer needs and preferences, and identify the target market and positioning of the product. • Perform initial technical assessment and feasibility analysis. • Conduct preliminary business assessment and financial analysis, forecasting indicators such as product cost, price, sales volume, and revenue.
2 / Product Development & Optimization	• Conduct prototype production, testing, modification, etc., to meet the customer's requirements for product specifications and performance. • Optimize the product, including improving quality, safety, production costs, etc. • Assess the feasibility of scaling-up production. • Conduct business model, value chain, and other analyses.
3 / Trial Production Verification	• Initiate trial production and obtain customer verification. Determine product specifications and confirm the design and feasibility of scaling up the production process. • Develop a plan for commercialized production. • Formulate market entry and launch plans.
4 / Commercialized Mass Production Validation	• Initiate commercialized mass production of the product and validate through customer verification. • Establish production facilities adhering to commercialized specifications (depending on the project). • Validate the market launch plan and establish a robust value chain.
5 / Product Market Realization	• Commercialize the product and submit the product project to the business unit. • The sales team devises a revenue acceleration plan. • Monitor whether sales revenue meets projected targets and conduct corresponding reviews.

Asia's First R&D Center for Recycled Materials

LCY has always been a proponent of innovation and the entrepreneurial spirit, and we prioritize value creation as our operational strategy to revolutionize resource use. We have invested significant momentum in R&D innovation, bringing together expertise across chemistry, materials, industrial management, environmental engineering, information systems, and business management. Our team of over 130 R&D professionals is backed by more than NT$3 billion in accumulated R&D spending from 2019 to 2024, including the establishment of the Nanzih R&D Center in 2019.

The design philosophy of the LCY Nanzih R&D Center incorporates safety, friendliness, creativity, and interactivity, serving as LCY's hub for circular material innovation. More than 60% of LCY's R&D staff in Taiwan are based at the Nanzih R&D Center. Nearly 70% of them hold a master's degree or higher, and about 30% hold doctoral degrees from Taiwan or overseas. Their strong academic foundation powers innovation, advancing the goal of economic and environmental sustainability, contributing to the circular economy value chain, and helping to realize our vision of a green future.

Co-Creation Platform Encourages Innovation

In addition to the R&D management described above, LCY has also launched a co-creation platform that brings together technical experts for discussion and idea sharing. The platform also encourage employees to explore their creativity, interact with each other, and gain a better understanding of everyone's roles to cultivate a culture of sharing. This platform not only provides opportunities for mutual learning but also serves as a starting point for new product development. The continuous process of experimentation and implementation in product development is challenging but equally filled with innovation and enjoyment. In addition, contributors are rewarded, and all researchers vote annually to select the Best Proposal Award.

2.2 Sustainable Products and Services

2.2.1 LCY's Sustainability 6R

LCY incorporates life cycle assessment into our product design process, guided by both domestic and international standards such as the Sustainability Accounting Standards Board (SASB), the Restriction of Hazardous Substances Directive (RoHS), and the Registration, Evaluation, and Authorization of Chemicals (REACH). Additionally, we consider the specific business units' product characteristics and developmental direction. We have established the LCY Sustainable 6R principles: Renewable, Recycling, Replace, Reduce, Repurpose, and Recover. These principles aim to maximize resource utilization during manufacturing, reduce environmental impact, and extend our influence on the consumer cycle. Leveraging our extensive R&D capabilities, we strive to redesign sustainable products that meet end-user needs, thereby redefining LCY's role and position in the industry. In 2024, revenue from green products reached NT$4,800,264,000, accounting for 9% of total revenue.

LCY's Sustainability 6R

Renewable

Bio-based materials

- Derived from natural and renewable sources such as plant starch, carbohydrates, and fibers.
- Polymeric materials synthesized via direct microbial fermentation.
- Can be biodegraded into carbon dioxide and organic matter under appropriate conditions after disposal.
- Compostable
- Carotenoid

Recycling

Converting waste into resources

- Materials or technologies for recycling and reuse.
- Designing recyclable processes.
- EIPA Dual Circular Economy Model - creating a circular economy to reduce waste for the semiconductor industry
- PCR polypropylene (GRS-certified product)
- PENTA-T1603 (waste-to-product solution)
- LCY Outsole Material (enabling full-shoe recyclability)
- Copper foil/100% recycled copper (UL2809-certified product)
- ISCC Plus-certified products

Replace

Replace/avoid/reduce the use of risky materials

- Use of raw materials abides by international directives on banned or restricted substances, e.g.: RoHS, REACH, etc.
- R&D, replacing/avoiding the use of toxic substances.
- SEP GP-8501U for 5G communications
- SEBS GP-9654D for medical-grade applications
- SBS GP3545 / SIS GP5562U for adhesive applications

Reduce

Reducing the environmental impact of processes

- Reduce air pollutant emissions, including sulfur oxides (SOx), nitrogen oxides (NOx), volatile organic compounds (VOCs), and hazardous air pollutants (HAPs).
- Reduce water consumption or improve water utilization.
- Reduce waste.
- Reduce energy consumption.
- Transparent energy-saving polypropylene ST860K, ST868K, ST869K
- EPPA-MBR technology
- TCAA/TCA key raw materials for alignment films

Repurpose

- Enable products to deliver new functions or applications for customers while providing superior characteristics, such as adhesion, elasticity, lightweight design, smoothness, electrical performance, weather resistance, and durability.
- Copper foil/reverse & thinning processes
- TPV for automotive lightweighting
- New SBS for bitumen modification GP-3760
- Footwear applications/EVA replacing GP-7720
- MA-functionalized SEBS GP-9901

Recovery

- Use energy recaptured from the manufacturing process.
- Convert energy waste (e.g., steam) into a product.
- Steam waste from China Steel Corporation (CSC) converted into LCY thermal energy

2.2.2 Innovation in Green Materials

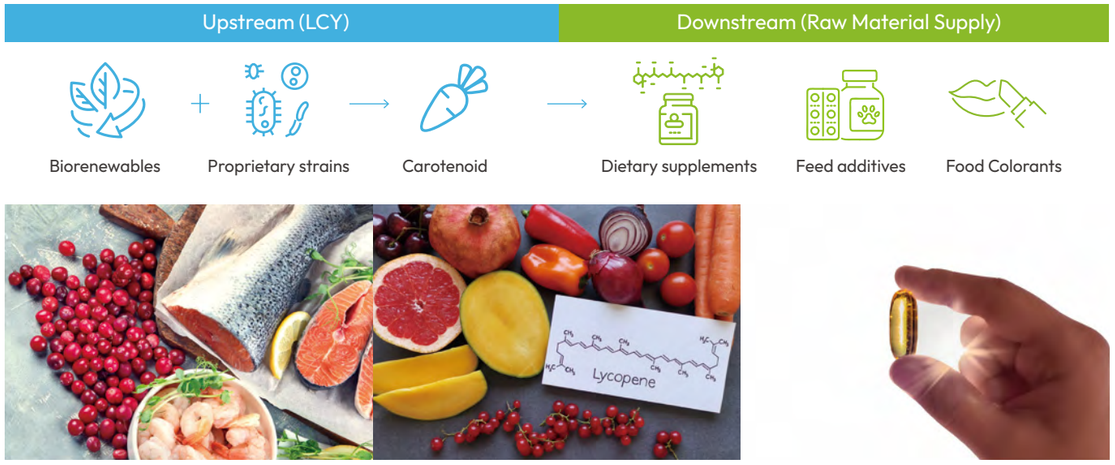
Renewable

Bio-based Carotenoids – Low-Waste, Low-Carbon Fermentation Process Using Yeast Platforms

Carotenoids are important bioactive compounds widely used as food colorants and in human, pet, and animal nutritional supplements. LCY employs an advanced yeast fermentation platform, utilizing glucose and edible oils as bio-based feedstocks to sustainably produce astaxanthin, lycopene, beta-carotene, and vitamin A.

Compared with traditional chemical synthesis, LCY's fermentation process does not require chemical catalysts, highly toxic reagents, or hazardous intermediates, making it both environmentally friendly and safe for production. Although tomatoes, algae, and fish liver oil are other potential bio-based sources of carotenoids, their natural concentrations are typically low, requiring large amounts of raw materials to achieve commercial yields—leading to high energy consumption and waste generation.

By contrast, LCY's patented technology enables the direct generation of high-concentration carotenoids in fermentation broth, significantly reducing raw material use and overall carbon footprint. This technology provides a cleaner, more efficient, and environmentally responsible solution for carotenoid production.

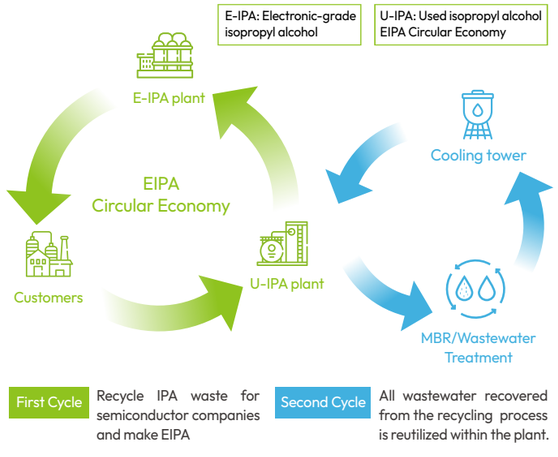


- Fermented Astaxanthin
- Fermented Lycopene
- Fermented Vitamin A

Recycling

EIPA Dual Circular Economy Model - creating a circular economy to reduce waste for the semiconductor industry

LCY is Taiwan's largest manufacturer of electronic-grade isopropanol (EIPA) and pioneered a dual-circular system that recycles waste IPA used for wafer cleaning. The feedstock is 100% sourced from customer waste streams, typically composed of about 10 wt% IPA and 90 wt% water. Using LCY's proprietary purification process, spent IPA is re-purified into electronic-grade IPA. In parallel, wastewater is processed through LCY's self-developed membrane bioreactor (MBR) and wastewater treatment system, separating it into industrial-use water for reuse. LCY's innovative waste recycling technology helps downstream clients recycle and reuse UIPA. UIPA is purified and reclaimed from waste liquids to become an industrial-grade product with 99.9% purity. The water produced from the purification process supplies the cooling towers at LCY's Linyuan Plant to maximize resource utilization.

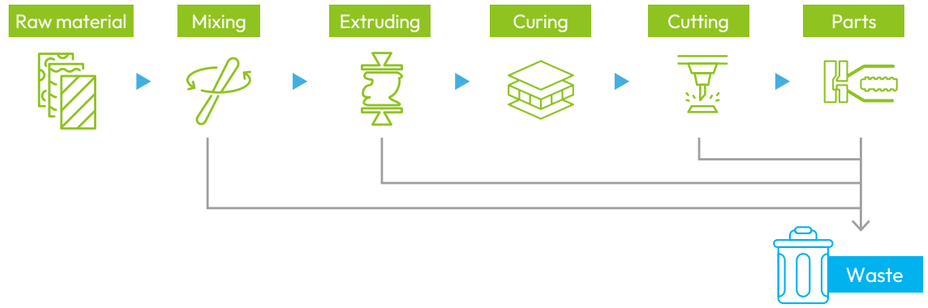


LCY Outsole Material - Recyclable, Next-Generation Outsole Material

LCY has developed an eco-friendly rubber, thermoplastic vulcanizate (TPV), whose process waste can be recycled and reprocessed, reducing process waste by 1-5%[1]. At the end of the footwear's life cycle, outsole components can be recycled, resulting in an estimated 30% reduction in waste and approximately 50% reduction in energy consumption[2]. Unlike traditional thermoset rubber materials, LCY Outsole Material can be molded using continuous injection molding to create products with complex shapes and a variety of colors, significantly reducing equipment and labor costs and saving energy.

Note 1: National Taxation Bureau of the Central Area, Ministry of Finance (April 18, 2019). Material consumption levels in the footwear industry for the 2018 fiscal year.
Note 2: Soochow Securities Research Institute (April 10, 2017). In-Depth Report on Thermoplastic Elastomer.

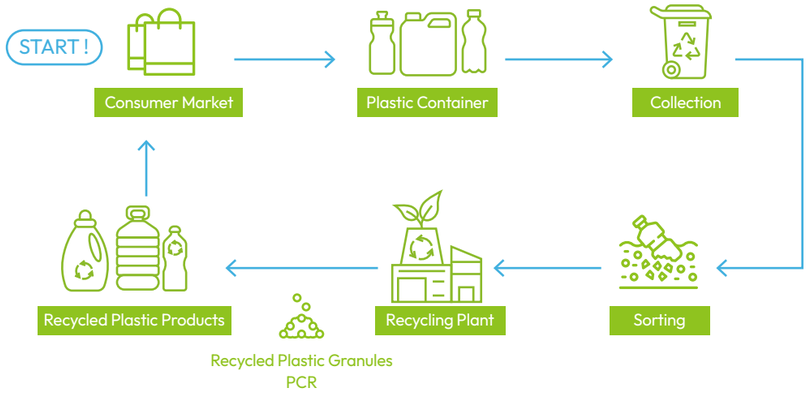
Traditional Thermoset Rubbers — Linear Value Chain

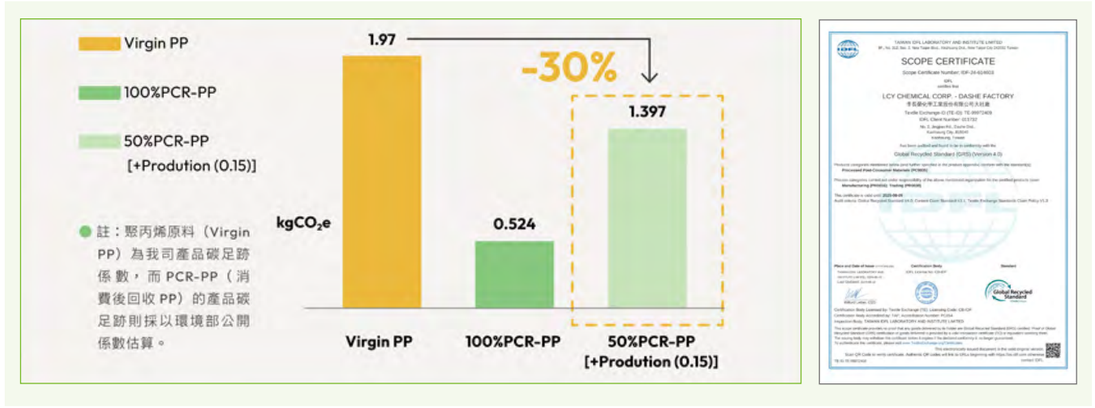


GRS Certified - Dashe Plant Polypropylene (PP) PCR Products

Polypropylene (PP) is an integral part of our lives. Post-consumer recycled polypropylene (PCR PP), created from properly recycled PP plastic, reduces reliance on virgin materials and conserves petrochemical resources. In 2022, the Dashe Plant established the Green PP team, consisting of members from advanced composite materials R&D, production, safety and environmental protection, facility department, storage terminal, and sales. The Dashe Plant obtained PCR PP product certification in 2022 and has continued to expand the variety of certified PCR PP products in 2024.

Amid the ESG movement, we are committed to reducing the energy consumption of product manufacturing. Our current PCR PP products, which contain 50% recycled PP, achieve a 30% reduction in carbon emissions (CO2). We will continue to advance our R&D efforts and adhere to GRS certification standards to ensure product quality, transparency, and traceability to minimize the carbon footprint of our products.

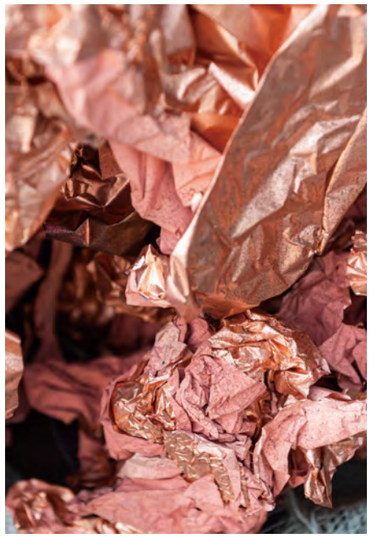




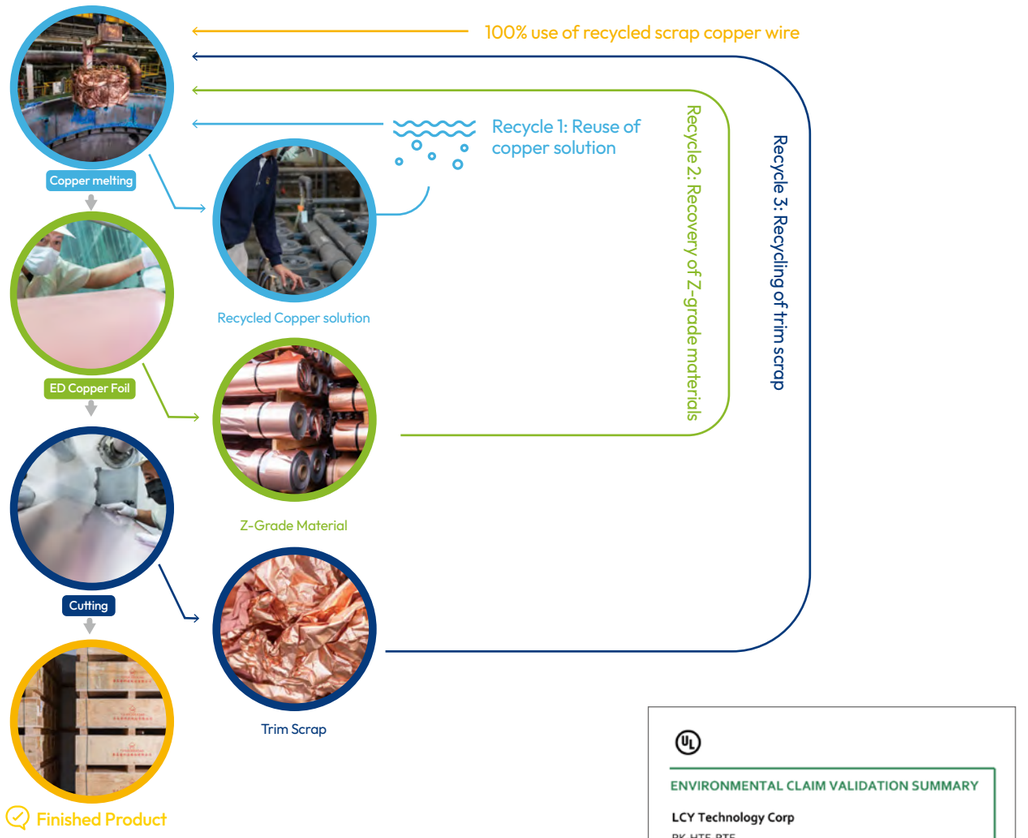
Note: Virgin polypropylene (Virgin PP) is used as LCY's baseline carbon footprint coefficient, while PCR-PP (post-consumer recycled PP) uses the coefficient from the Carbon Footprint Information Platform's 2019 data for recycled PP pellets.

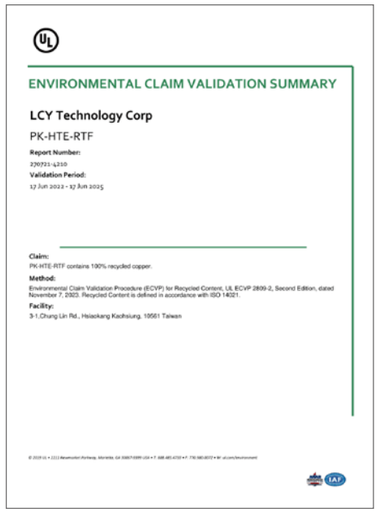
100% Recycled Copper Foil Production - 100% Recycled Content Validation - UL 2809

LCY's Copper Foil Plant uses 100% recycled copper wire as raw material to produce high quality, high strength green copper foil that has received UL 2809 (2022-2024) 100% recycled content validation. We maintain communication with our customers to ensure product quality and adopt more environmentally friendly manufacturing processes. When recycled copper wire enters the production process, key procedures such as smart manufacturing controls and self-developed water resource recycling are applied. Besides using 100% recycled copper wire, the plant also recycles copper from wastewater. The reclaimed copper from wastewater is processed by external facilities and then returned to the production line for copper foil manufacturing. This ensures the maximum utilization of resources and achieves a recycling rate of over 99%.



⇧ Using 100% recycled wire/cable and factory-recycled Z-grade materials/copper trim scrap as raw materials for copper melting maximizes the use of recyclable resources, improves product efficiency, exceeds customer expectations, and moves toward net-zero emissions.




ENVIRONMENTAL CLAIM VALIDATION SUMMARY

LCY Technology Corp

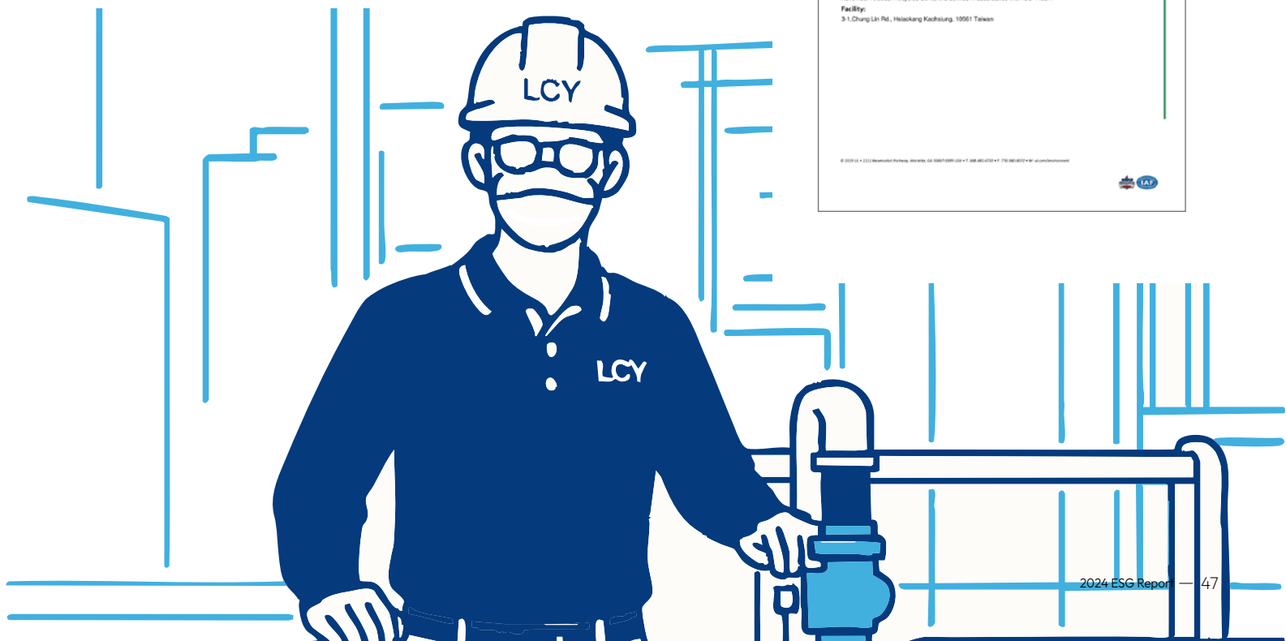
PK-HTE-RTF

Report Number:
Validation Period:
17 Jun 2022 - 17 Jun 2025

Claim:
PK-HTE-RTF contains 100% recycled copper.

Method:
Environmental Claim Validation Procedure (ECVP) for Recycled Content, UL ECVP 2809-2, Second Edition, dated November 7, 2023. Recycled Content is defined in accordance with ISO 14021.

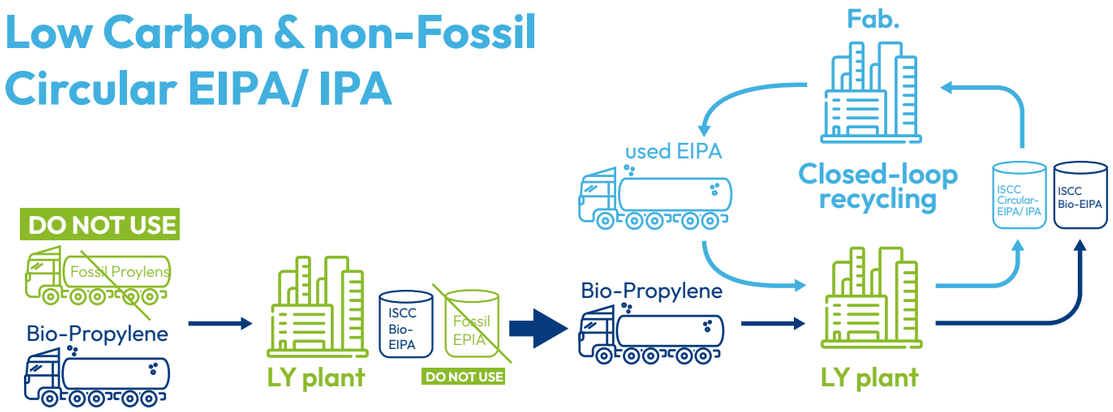
Facility:
3-1 Chung Lin Rd., Hsiaokang Kaohsiung, 10561 Taiwan



ISCC Plus Certified Materials – Bio-/Circular-Based Low-Carbon Materials

ISCC Plus certification focuses on verifying the traceability of bio-based and recycled raw materials to ensure supply chain transparency and environmental responsibility. As a global petrochemical industry leader, LCY actively promotes raw material substitution by adopting low-carbon and circular materials to build a green supply chain. As of Q1 2025, LCY's plants in Taiwan and China have obtained ISCC Plus certification. For example, the Linyuan, Dashe, and Xiaogang plants in Taiwan are certified for EIPA/IPA, PP, TPV, and TPE products. In China, the Huizhou plant and Huizhou AR plants have obtained certification for TPE and ESBR products. These certifications strengthen LCY's market competitiveness and underscore our commitment to sustainability.

LCY addresses the challenges of building a low-carbon supply chain with green supply-chain solutions using bio-/circular-materials combined with closed-loop recycling mechanisms. At our Linyuan Plant (LY), for example, we plan to substitute conventional petrochemical feedstocks with bio-based alternatives and obtain ISCC Plus Bio- & Circular-certified EIPA/IPA. This approach creates a fully closed-loop recycling system capable of producing low-carbon ISCC Plus Bio- & Circular-certified EIPA/IPA products that are independent of petrochemical sources and can be supplied to electronics manufacturers.



Green Milestones in Asia
Achieved ISCC PLUS certification
(three sites in Taiwan)

Green Milestones in Asia
Achieved ISCC PLUS certification at Second Huizhou Plant (China)

Replace

SEP GP-8501U for 5G Communications - A Safe Alternative for Chloroprene Rubber

SEP GP-8501U is used in 5G infrastructure, specifically in fiber optic cable fill gels and specialized polymer thixotropy. It serves as an advanced thickener and rheology modifier in grease and oil applications, effectively replacing animal-based thickeners that often fall short in performance. SEP GP-8501U is designed to maintain functionality under harsh environmental conditions and offers exceptional heat resistance. This provides end products with desirable properties such as longer life cycles, reduced energy consumption, and less waste. In addition, SEP GP-8501U improves the low-temperature impact strength of general-purpose plastics, making it an excellent replacement for chloroprene rubber (CR) and polyolefin elastomers (POE). Since chloroprene rubber contains halogens that pose health risks, SEP GP-8501U provides a safer alternative.

Wet Cleaning Solutions – Non-NMP, Non-TMAH, Non-DMSO Formulations

In semiconductor processes, wet cleaning agents play a critical role in cleaning and etching. However, because conventional wet cleaning solutions contain chemicals that may pose risks to the environment and human health, finding safe and effective alternatives has become essential. LCY has developed non-NMP, non-TMAH, and non-DMSO cleaning formulations that meet the specific requirements of the electronics industry, address the unique challenges of BEOL, FEOL, advanced packaging, and NIL applications, and comply with international directives such as REACH and RoHS. See the table below for more examples of successful substitutions.

Development of PFAS-free CPI Material for flexible displays	LCY's CPI is synthesized using alicyclic monomers instead of traditional fluorine-containing monomers to create a transparent substrate for transparent polyimide. It boasts excellent optical performance, high heat resistance, and outstanding mechanical strength without generating PFAS, making it eco-friendly. It can be used to replace traditional glass substrates in displays, particularly in applications like foldable and flexible displays.
Substitute for Talc to reduce health risks	Talc is used as a raw material for dedusting agents in the TPE-SIS product series. However, safety concerns in recent have raised questions about its potential risks to human health and the environment. To address these concerns, LCY has developed a method to completely replace talc in our products. We have not only avoided using similar raw materials but have also improved product functionality, fully replacing talc in all products within the SIS series.
Alternative for traditional PVC medical materials	SEBS GP-9645D offers high transparency and excellent flexibility, making it suitable for medical tubing and films (IV bags). Its halogen-free composition eliminates the need for plasticizers, allowing it to replace traditional PVC medical materials. This material is resistant to degradation and provides outstanding UV, ozone, and chemical stability.
Replacement of Toxic Potassium Dichromate and Potassium Chromate to Reduce Health Risks	High concentrations of Potassium Dichromate and Potassium Chromate, which are characterized as carcinogens, are commonly used in analytical formulations. The Linyuan Plant adjusted the analytical methods to avoid the use of listed toxic substances, effectively replacing their usage.
Development of Online Analytical Technology	LCY has incorporated Process Analytical Technology (PAT) in its processes to replace manual sampling and offline analysis, enhancing operational security and reducing material waste.

Reduce

New Catalyst - Reducing Activation Energy in Reactions

To increase the efficiency of chemical conversions, LCY is developing a new generation of catalysts aimed at reducing the required amount to just one-tenth of the original. Besides lowering the catalyst quantity required to be added, this innovation also enhances conversion efficiency, which simplifies the purification steps and leads to significant savings in materials and energy usage.

Analysis of C2-C6 Impurities in IPA Products - Increasing Efficiency and Reducing Energy Consumption

Developing efficient analytical methods. Using two analytical methods, multiple impurities (C2–C6) in IPA can be rapidly detected. This approach enables the analysis of nearly 20 impurities within 30 minutes, significantly reducing testing time and lowering energy consumption. With low-capital equipment, detection limits can reach the ppb level.

Process Simulation - Reducing Trial and Error Effort

By establishing mathematical models and performing simulations, we can predict the results of different variables and parameters in the manufacturing process. This optimization of the production process aims to reduce energy and material consumption while improving product quality.

Repurpose

LCD Display Alignment Films (TCA/TCAA) - Innovative Low-Carbon Technology

LCY is actively developing electronic materials and relevant products with high technological thresholds. The R&D team has successfully achieved mass production of TCA and TCAA, which are crucial raw materials for alignment films in LCD displays. Our innovative process uses lower-value petrochemicals as starting materials, resulting in a 21% reduction in hazardous waste during manufacturing compared to other methods, according to LCY studies. Additionally, our unique monomer design and patented formulation produce transparent polyimide products that do not require low-temperature storage. This innovation also lowers the operating temperature for customers and significantly reduces energy consumption.

High-Rebound SEBS elastomer for Functional Footwear - Advanced High Resilience/Lightweight Technology

LCY's high-rebound thermoplastic elastomer (SEBS) GP-7720 combines softness, low hardness, and high elasticity, greatly improving comfort and enhancing the functionality of EVA footwear. Developed as an innovative SEBS material to meet the requirements of running shoes and basketball shoes, it can also be recycled after use, supporting the principles of the circular economy. The high-rebound SEBS GP-7720 exhibits high fluidity and low energy consumption, ensuring compatibility with existing EVA injection molding equipment. This allows for the reduction in compounding temperatures and energy usage while improving processing efficiency. The manufacturing process can achieve a 20% reduction in energy consumption. Additionally, the material is suitable for physical and chemical foaming processes, minimizing the need for cross-linking agents and additives by nearly 30%. It also lowers the amount of volatile compounds and dust during processing, making it a next-generation high-performance material that prioritizes environmental sustainability and worker health.

Enhancing Road Durability with High-Additive Modified Asphalt – High-Performance Asphalt Modification Technology

SBS-modified asphalt technology has been used for over 50 years, with conventional 4–6% SBS improving asphalt's high-temperature strength and low-temperature flexibility. LCY's specially designed SBS GP-3760 enables loading above 8%, delivering performance significantly better than traditional SBS-modified asphalt. Research and field data show that high-loading GP-3760 modified asphalt not only offers greater load-bearing capacity but also reduces pavement thickness by 40%, extends road service life, and lowers maintenance frequency.

Although initial construction costs are higher, the overall life-cycle cost is lower than traditional road materials, in line with Life Cycle Cost Analysis (LCCA) principles. Reduced pavement thickness also cuts consumption of asphalt, concrete, and energy, while fewer maintenance cycles further reduce carbon emissions—making this a more sustainable next-generation construction material.

Customized Reverse Treatment Foil (RTF) & Very Low Profile (VLP) Thin Copper Foil – High-Performance Materials for 5G and Automotive Substrates

LCY's Copper Foil Plant focuses on the copper-clad laminate and printed circuit board markets, actively developing very low profile (VLP) reverse treatment foil (RTF) and ultra-thin 8 μm copper foil for high-frequency applications. These innovations are tailored to the needs of automotive electronics and 5G end products for high-frequency interference reduction and high-speed transmission. Successfully validated by customers, these products are suitable for high-speed multilayer PCBs and high-frequency signal transmission boards. VLP reverse treatment foil is also used in advanced flexible circuits for high-frequency transmissions, such as automotive collision systems, GPS security systems, and servers. These high-value products have three advantages: they meet customer needs, generate profits, and elevate the general quality of life for the overall society. The Copper Foil Plant is committed to reducing process waste and chemical consumption, saving over 100 tons of chemicals per month and reducing copper-containing wastewater sludge by 30%. LCYtech prioritizes environmental sustainability and continuously optimizes processes to embody the principles of waste reduction and circular economy, thereby enhancing sustainable competitiveness.

2.2.3 Industrial Solutions' MBR Wastewater Treatment Equipment – ESG Sustainability and Carbon Reduction

LCY is committed to advancing ESG-driven corporate sustainability. Our innovations in water resource management are described as follows:

Corporate governance

For water resource management, we focus on two directions: water use management and wastewater recycling and reuse. We have introduced AI-based intelligent management systems in both areas, while also developing next-generation smart MBR systems and cross-platform water management solutions. What began with internal group applications has expanded to adoption across industries in Taiwan, including electronics, memory, biomedical, food, and chemical sectors—among them leading domestic and international corporations. LCY's MBR wastewater treatment system earned the 2024 "Sustainable Water Award" from the Ministry of Environment, as well as the 2nd "Green Chemistry Application and Innovation Award" in 2020. From private-sector adoption to public infrastructure projects, LCY continues to demonstrate its determination to achieve corporate sustainability through ESG practices.

Environmental Protection

Through optimized MBR technology, we reduce packaging in logistics for reuse and zero-waste transportation, thereby lowering product carbon emissions. Localized production also eliminates carbon emissions from import shipping. The MBR solutions provided by LCY's Industrial Solutions BU enhance wastewater treatment efficiency while expanding water resource recycling and reuse.

Social Responsibility

We have introduced equipment financing and leasing programs to help SMEs ease capital pressures. Internally, a dedicated project team provides technical services and customized solutions for different industries, including: enhancing equipment processing efficiency, reducing operating costs, and extending service life. Through the application of biological acclimation technology in wastewater treatment plant operations, LCY has improved recycled water quality and increased water resource reuse and recycling.

Carbon Reduction

LCY leverages AI technology to optimize wastewater treatment processes, reducing electricity and chemical consumption. The application of AI-MBR systems further decreases power usage and industrial water demand, driving carbon reduction outcomes. With production bases in Taiwan, we use AI to minimize production waste and improve product quality, while also reducing carbon emissions from shipping—achieving high-quality, low-waste products that minimize environmental impact.

LCY's self-developed MBR membrane bioreactor systems filter wastewater for reuse as industrial water, and when integrated with the EIPA Dual Circular Economy technology, enable the dual regeneration of both isopropanol and water. This innovative solution underscores our commitment to green processes and net-zero emissions, and it earned the 2nd "Green Chemistry Application and Innovation Award."

By incorporating AI and cross-platform integration, LCY has built an intelligent MBR wastewater treatment system that significantly enhances efficiency while reducing energy consumption and sludge generation. At the same time, we integrate water resource systems to increase reclaimed water utilization rates from 33% to over 90%. With these achievements in smart management, LCY received the 2024 Sustainable Water Award - Smart Management Category.

2.3 Responsible Chemical Management

2.3.1 Chemical Management Protocols

Chemical management at LCY is controlled through two phases: Product R&D and Plant Management. For product R&D, LCY will evaluate alternatives and reduce high-risk/hazardous substances through management mechanisms before mass production. LCY also meets with industrial safety and environmental protection units at plants to conduct environmental and health hazard and safety assessments for the production process. The HQ Environmental Risk Management Department and occupational safety and environmental protection offices at each plant are the primary plant management units. The Environmental Risk Management Department formulates quality control guidelines for each of the five stages of the chemical life cycle, including needs-based application, incoming inspection, procurement labeling, storage and use, and disposal. We monitor changes in chemical regulations by the relevant authorities, clarify the impact on our plants, and discuss response measures to ensure that the use and management of chemicals at all plants comply with local laws and regulations. The aim is to safeguard the safety and health and employees using chemicals. In 2024, the revenue from products containing GHS Category 1 and Category 2 health and environmental hazard chemicals was NT$7,112,192,000, accounting for 13.9% of the company's consolidated revenue. All such products undergo a 100% hazard and risk assessment as required by the company.

Chemical Management Protocols

R&D		Plant Management				
Substance Use Evaluation	Experiment Process Design	Needs-based Application	Incoming Inspection	Procurement Labelling	Storage and Use	Disposal
High-risk/hazardous substances are evaluated for substitution and reduction in use.	The R&D unit designs the experimental process, lists the chemicals to be used, and collects safety data sheets.	The usage unit/ operations department confirms the type and quantity of chemicals.	The safety and environmental protection unit reviews and evaluates the characteristics of the chemical, and conducts hazard analysis using the national standard classification of the operational site and with the Management of Change (MOC) method.	Chemicals are procured according to the operational site's procurement standards, with suppliers required to provide safety data sheets and GHS labeling.	Complete records of chemical storage and labeling are maintained, and hazard information is communicated and usage records are kept.	Waste is properly disposed of and treated according to the regulations of the operational site.

LCY offers a wide variety of products. Apart from basic chemical raw materials like various solvents and methanol derivatives, other product lines such as high-performance plastics, TPE, and copper foil do not contain chemicals that have significant impacts on human health or the environment. Therefore, the risk and hazard evaluation of chemicals mainly focuses on plant management, controlling chemical risks through substance characteristics, EHS risks, and process hazards.

Chemical Hazards and Risk Assessment

Chemical Properties

- Categorize and manage chemicals according to chemical control banding (CCB) and risk levels.
- Compliance assessment of international banned/restricted substances directives such as RoHS, REACH, etc., safety data sheet update check, and chemical incompatibility check.

EHS Risks

- ISO 45001 Risk Assessment and ISO 14001 Environmental Consideration: We regularly assess the risk level of possible sources of risks in our daily operations every year and prepare corresponding management measures.

Process Hazards

- Process Hazards Analysis (PHA): We use the HazOp (hazard and operability analysis) method to identify, assess, and control process hazards associated with the manufacturing, use, and storage of hazardous substances within plants.

2.3.2 Responsible Chemical Research

The use of chemical substances has long been closely related to human daily life. In response to current concerns about the safety of various chemical substances, LCY aims to leverage its excellent R&D capabilities through two main strategies: the development of substitutes and process innovation. These strategies aim to gradually reduce the use of high-risk and high-concern substances in our products and facilities. Additionally, we collaborate with our customers to help them develop substitutes, thereby reducing the potential impact of various substances on human health and the environment.

2.3.3 Smart Chemical Management

The R&D Center adopted an online chemical management system in 2019 and has been steadily expanding system functions every year. The system utilizes AI technology and currently holds information on the properties of over 20,000 chemicals, allowing users to quickly look up the latest status and management of all chemicals held within the R&D center. The system's PDA and APP functions allow for quick and easy access to records, queries, and reviews of chemical operations, and a QR code function allows users access to information on the type, quantity, distribution, and hazards of all laboratory chemicals, anywhere at any time. By integrating this system with chemical control banding (CCB), we can effectively manage chemicals and exposure risks. We are streamlining the management hierarchy to have a more direct and real-time understanding of chemical operations within the factory, aiming to enhance productivity and allow the company to adapt swiftly to dynamic market environments. The early warning system allows us to monitor chemical manufacturing parameters in real time.

2.4 Digital Innovation

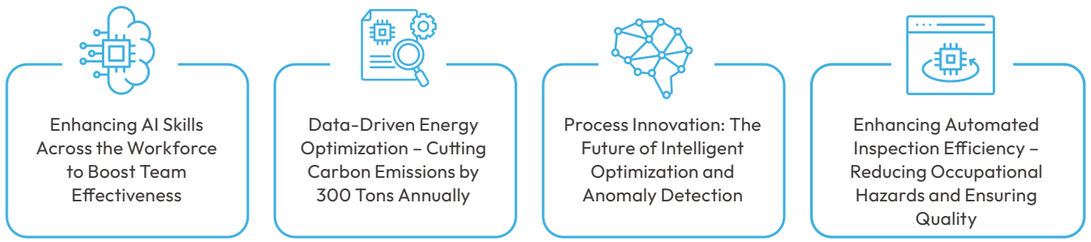
2.4.1 Digital Transformation Strategy

Since 2014, LCY has actively advanced digital transformation, emphasizing employee empowerment and instilling a digital-first mindset from top to bottom. We have been committed to integrating technology tools and applying data analytics with agility. In 2024, LCY's AI team further promoted generative AI across the entire Group, enabling every employee to benefit from this technology.

2024 marked a breakthrough year for generative AI technologies, as major U.S. tech companies launched proprietary large language models to compete in the market, while software vendors and startups developed a wide range of generative AI applications and frameworks. Against this backdrop, LCY's AI team proactively explored and identified tools most suited to our company, reflecting foresight and innovation in our digital journey. To address departmental pain points, we developed tools such as an intelligent search engine for R&D and patent teams, an ISO document Q&A chatbot, and utilities for long-text summarization and mind mapping.

In addition, to equip all employees with fundamental AI knowledge, we used the open-source Open Web UI to build a dedicated internal generative AI platform. This platform integrates cloud and on-premise models, and employees can also create their own GPTs (personal assistant bots), enhancing the practicality and usability of AI. Through this platform, we encourage employees to deepen their learning and application of AI technologies.

We regard these achievements as a firm commitment to our future development direction, continuing to drive digital transformation and laying a solid foundation for sustainable corporate development. Through these efforts, we have not only improved our company's operational efficiency and product quality but also strengthened our social and environmental responsibilities, actively contributing to sustainable development in the economy, society, and environment.



Enhancing AI Skills Across the Workforce to Boost Team Effectiveness

Generative AI has vast applications. At LCY, we have integrated it into internal operations to support employees in quickly reading documents, generating summaries, and creating mind maps. At the R&D Center, we built a document knowledge-base search engine for R&D teams. In the Patent Department, AI tools assist in rapidly reviewing large volumes of patent literature and organizing them into mind maps, enabling users to extract core information through keyword searches. To ensure all employees become proficient in using generative AI, we created a platform similar to OpenAI ChatGPT, integrating model APIs with leading large language models in the market, as well as on-premise models. This allows employees to access high-performance models without individual subscriptions. Employees are also actively learning to build personalized GPT assistants to further improve efficiency.

Data-Driven Energy Optimization – Cutting Carbon Emissions by 300 Tons Annually

At the copper foil plant, electrolysis is a key process, and electricity is a major cost driver. With rising power prices and ESG considerations becoming increasingly important, energy efficiency has become a top priority. We completed an ED (electrodeposition) power consumption analysis and improvement project, collecting consumption data from ED equipment, visualizing it for analysis, and comparing different ED machines to identify key factors affecting electricity usage. Through these measures, we expect to reduce electricity consumption by approximately 1.2 million kWh annually. We also developed operational guidelines for ED energy savings, using data visualization dashboards to monitor electricity usage in real time. At our Huizhou Plant, we implemented energy optimization measures in distillation systems by applying data analytics to determine optimal steam usage parameters. This successfully reduced steam consumption by 2% per year, cutting 300 tons of CO_2 emissions. These efforts highlight our continued progress in energy conservation, carbon reduction, and sustainable operations.

Process Innovation: Intelligent Optimization and Image-Based Anomaly Detection

In 2024, image recognition and detection technologies achieved high maturity and were widely applied throughout manufacturing—from production processes to packaging and even in R&D. Advanced imaging technology enabled real-time alerts, such as detecting anomalies in centrifuge dehydration, assessing coating uniformity on membrane fibers, and identifying defects in cutting operations. These innovations not only addressed inconsistencies in traditional manual inspections but also provided 24/7 real-time monitoring to ensure stable quality and reduce waste caused by quality control issues. By enabling accurate and timely anomaly detection, we can identify problems earlier and implement immediate adjustments to avoid raw material and energy waste. This approach improves operational efficiency while demonstrating LCY's commitment to environmental responsibility by minimizing defective output and unnecessary resource consumption. We will continue leveraging innovative technologies to build a more sustainable, efficient, and environmentally responsible future.

Enhancing Automated Inspection Efficiency – Reducing Occupational Hazards and Ensuring Quality

LCY's Kaohsiung Industrial Solutions business unit is dedicated to sustainable operations in ecological green energy and aims to develop world-class, high-performance membrane filtration systems for wastewater treatment and recycling. In membrane production, defect inspection of membrane fibers was previously conducted manually. Because defects are small and require strong lighting for detection, the process placed heavy strain on employees' eyes. To overcome these challenges, we introduced AI image recognition to replace manual inspection. The technology not only automates defect labeling but also significantly reduces the burden on inspectors while improving product quality. This innovation earned LCY the 2024 Sustainable Water Award - Smart Management Category from the Ministry of Environment. The recognition validates our past efforts and motivates us to expand our expertise and creativity into more areas, delivering greater positive impact to society.

環境部
Ministry of Environment

智慧管理類：李長榮化學工業股份有限公司高雄廠

一、企業簡介

李長榮集團秉持綠能永續經營理念，成為提供差異化產品的世界級先進化學公司。集團的使命在於以突破創新、靈活彈性、高端優質的產品與服務，並以優於業界的營運模式和完善製造技術，替全世界各行各業創造新的營運價值。

李謀偉先生自1990年起接任總經理，透過不斷創新與轉型，不僅發展出最完整涵蓋碳1至碳5的化學產品系列，並以併購及轉投資擴大事業版圖，橫跨化工、塑膠、橡膠、電子化學品、銅箔、太陽能等領域。如今李長榮集團足跡已遍及台灣、中國大陸、美國及中東，成功發展為跨領域及全球化經營的企業。旗下產品被廣泛應用於醫療、工業及家庭等方面，除了內銷台灣，同時也外銷供應全球各地，並擁有自有碼頭及船隊等配合生產營運作業。

李長榮化學工業股份有限公司高雄廠位於高雄市臨海工業區，為李長榮集團成員之一。主要產品為異戊四醇、雙異戊四醇、甲酸鈉、福美林及氫氣。

二、淨水永續應用

➢ 智慧化MBR廢水處理系統

近年來智慧製造如同一波工業革命推進產業優化與升級，將數據分析、人工智慧及機器學習之整合，運用PI系統跨平台收集資訊的功能，首先資料平台整合。將PLC、DCS、圖控軟體、水質分析監控數據集在同一界面輪轉運算，建立一整套從製程廢水減量、廢水水質監控、處理流程優化(節能、減廢、減碳排)到處理後回收再利用的智慧化低碳排系統。

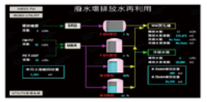
➢ 系統目標

1) AI模型建立最佳化活性污泥池溶氧值，用控制及降低曝氣溶氧的耗電量。
2) MBR膜組運轉模型，預測最佳化污泥回流比例及曝氣攪動強度。
3) 活性污泥智能化馴養模型，最佳化控制食微比、污泥活性及污泥齡，減少廢泥量。
4) 整合型面板追蹤再生水系統、冷卻水系統及冰水系統之跨部門控制，提升循環及節電效益。

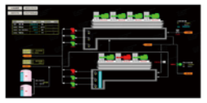
	傳統型廢水處理場	智慧型低碳排廢水處理場
預期目標	將事業產生之廢水經處理單元後，將污染物去除，使水質達到納管標準後，納管排放至工業區內聯合汙水處理廠。	A. 從源頭管理，減少廢水中的污染物。 B. 運用AI機械學習建立廢水場營運模型 C. 運用AI邊緣運算技術建立運轉模型基線 D. 滾動式追蹤污染物發生原因及追蹤改善成效。 E. 建立可靠、節能、減廢的運轉模式，進而將處理水回收再利用。 F. 建立跨平台的整合智能面板將提升回收水循環利用之經濟性。
技術運轉原理	A. 廢水經收集後➔水質分析➔規劃處理 B. 生物馴養➔降解污染物➔排泥脫水移除 C. 曝氣溶氧➔生物呼吸消耗➔觀察水體殘氧	A. 跨平台資料收集與智能化整合分析。 B. 增設自動化連續監控設備，提供連續性、即時性及聯結性資料庫。 C. 建立模型後，對於處理方式、過程及結果做出預測，以利擬定處理方式及策略。整合型面板，將資訊整合及成效追蹤。

➢ 系統架構

1) 再生水系統

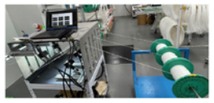


2) 冷卻水系統



3) 冰水系統

4) 生產製造運用AI影像辨識提升產品品質
LCY AI團隊自行開發瑕疵檢測系統，減少人力抽樣檢測頻率問題、降低漏檢率、改善人員檢驗品質不一問題。



➢ 響應政府推動水資源循環政策

申請使用高雄市臨海再生水處理廠之再生水用水計劃，申請量為每日1200M3，因再生水水質優於工業水，使用再生水比例由現行33%將再提生至90%以上。

三、淨水永續成效與推廣

➢ 智慧淨水與跨平台智能平台具體成效

李長榮化工高雄廠設有一座批式活性污泥廢水處理場(SBR)，設施中有兩座活性污泥池，104年開始規劃挪用其中一座活性污泥池改建成薄膜生物處理場(MBR)，並於105年2月建造完成，同年8月試車完成開始營運，對工廠的好處共計有三：(一)以現有占地面積之廢水日處理能力由800CMD提升至1400CMD。(二)製程工廠產生的廢水經過MBR處理後，處理水全回收再使用於焚化爐洗滌水及冷卻水補充水。(三)減少工業水耗用量，105~112年累計減少耗用2,634,960M3。

➢ 廢水處理生態教室Open House

建立MBR廢水處理導覽示範廠，解說廢水從工廠端來源到處理水回用流程。設置處理水生態養殖池，設置以來各界踴越參觀。
參觀過的單位共計46個，例如：

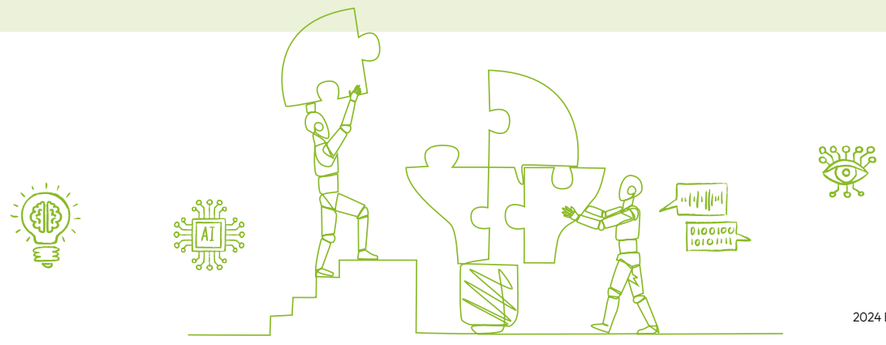
- 學界：中山大學環境工程研究所師生、義守大學化學系師生、高雄大學化材系師生等
- 產業界：中國鋼鐵公司、中鋼鋁業公司、日月光半導體公司水務組、永光化學公司、力麗紡織公司、中國石油化學公司、長春石化公司苗栗廠等32間公司

2.4.1 Digital Innovation Impact: Applications and Future Prospects of AI in the Petrochemical Industry

AI technology is being applied in the petrochemical industry to help operations run more efficiently. Looking ahead, LCY will continue to pursue transformation by introducing new technologies, enabling industrial upgrading and establishing new benchmarks in smart factory automation. We are also building bridges in the AI field between industry and academia, sharing practical experience with AI across sectors to foster knowledge exchange.

2024 Southern Taiwan Industry Strategy Forum: LCY organized a cross-industry AI alliance for the petrochemical sector to enhance efficiency and innovation capabilities through AI. Chairman Bowei Lee took the bold initiative to integrate resources and promote technology sharing, giving Taiwan the opportunity to strengthen its industry and address talent shortages. He emphasized that without AI, the petrochemical industry will inevitably be eliminated.

Since 2020, the LCY information team has been continuously sharing and exchanging insights with major universities on the practical applications of AI digital technology in the chemical industry. LCY has organized at least 20 such events, seeing over 1,200 participating students.This initiative also helps students experience innovation and transformation within traditional industries.



3.1 Environmental Policies 60
3.2 Climate Strategy 61
3.3 Carbon & Energy Management 64
3.4 Air Quality Management 75
3.5 Water Management 77
3.6 Waste Management 80

03

Green Operations: Leading Low-Carbon Transition

LCY actively promotes GHGs inventory and product carbon footprint verification, comprehensively evaluating energy and raw material use and associated carbon emissions across every stage of production. Based on these results, we systematically and strategically establish short-, mid-, and long-term carbon reduction targets to guide business decisions and steadily move toward our 2050 net-zero vision.

We continue to deepen the promotion of sustainable processes, focusing on improving energy efficiency and requiring all plants to gradually increase the proportion of renewable energy used. In addition, all plants have adopted the ISO 50001 energy management system to build a more resilient low-carbon operational model.

↓ 31%

Combined carbon emissions from LCY locations in Taiwan, China, the US, and Canada decreased by 31% compared to the base year (2021), and carbon intensity reduced by 4.3% compared to the previous year (2023).

↓ 20.9%

Total energy consumption from LCY locations in Taiwan, China, the US, and Canada decreased by 20.9% compared to the base year (2021), while energy intensity decreased by 0.34% compared to the previous year (2023).

↓ 23%

Total SOx unit product emissions from LCY locations in Taiwan, China, and the US decreased by 23% compared to the previous year (2023)

- GHG Emissions
- Energy Management
- Air Quality
- Water Management

Achievements

In response to changes in business strategy and organizational development, LCY has reviewed and revised its environmental management base years and key targets. This report updates the framework for GHG emissions, energy use, water resources, and waste management targets accordingly.

Category	KPI [Note 1]		2024 Targets	Performance in 2024	Short-term: 2025 Targets	Mid-term: 2027 Targets	Long-term: 2030 Targets
GHG Emissions	GHG (Scope 1, 2) emissions	Base year: 2021 1,106.1 KtonCO_2e	15%	31%	32%	36%	42%
Energy Management	Reduction of energy intensity (consumption per unit of product) compared to the base year	Base year: 2021 5.81 GJ/ton of product	2%	increased 21.9%	3%	5%	8%
	All LCY Taiwan plants will use a certain percentage of renewable energy	Base year: 2021 0.02% Green Energy	1.2%	1.26%	1.3%	-	15%
VOC Emissions	Taiwan plants to reduce VOC emissions vs. base year	Base year: 2021 191.47 tons	Linyuan Plant: Through process improvements, equipment component upgrades, and pollution control enhancements. 2025: Prioritize process improvements, with an expected reduction of 1.8 tons of VOC emissions. 2027-2030: Continue reduction, with rolling adjustments based on actual operational performance. Xiaogang Plant: Improve process operations to enhance enclosure and collection efficiency 2025: Complete one-fifth of the project in phases. 2027-2030: Complete the full improvement project and apply to the Environmental Protection Bureau for recognition of collection efficiency.				
Water Management (Wastewater Recycling)	Higher wastewater recycling rates at designated Taiwan plants	Base year: 2021 13.9%	15%	11.9%	Maintain 15% annual recycling rate		
Waste Management	Taiwan plants reduce waste output vs. base year	Base year: 2021 20,730.66 tons	10%	11.3%	Maintain 10% annual reduction compared with base year		

Note 1: The base year for environmental KPIs has been adjusted from 2019 to 2021.

Note 2: The original 2024 GHG emissions reduction target was an 8% reduction from the 2019 base year; recalculated with 2021 as the new base year, this equates to a nearly 15% reduction.

Note 3: Mid-term renewable energy targets will be revised on a rolling basis according to each plant's or business unit's green power procurement strategy.

Note 4: In 2024, LCY reassessed and revised its environmental indicators for air quality, water management, and waste management, prioritizing Taiwan plants that account for the largest share of emissions.

Note 5: **Designated plants in Taiwan** - only the Kaohsiung and Linyuan Plants are equipped with wastewater treatment facilities.

Wastewater recycling inside the plants refers to the process where wastewater, after being treated in these facilities, undergoes further filtration to be reused instead of being discharged.

Wastewater recycling rate = (recycled wastewater/total water withdrawl)*100%. The wastewater recycling rate was only 11.9% in 2024 because process modifications required retraining microbial cultures in wastewater treatment, temporarily reducing recycling volumes.

Note 6: Water and waste management: In recent years, plants have been focused on wastewater recycling and waste reduction. As processes have stabilized, annual targets remain at a 15% wastewater recycling rate and a 10% waste reduction rate.

3 Green Operations: Leading Low-Carbon Transition

3.1 Environmental Policies

3.1.1 Environmental Protection Policies

To strengthen sustainable governance and environmental management, LCY established the ERM & Sustainability Department as a dedicated first-level unit under the highest-ranking executive. The division comprises the Sustainability Development Department and the Environmental Risk Management Department, which are respectively responsible for formulating corporate sustainability strategies, promoting social responsibility, and identifying and controlling potential environmental risks in operations, while also overseeing the occupational safety and environmental protection offices at each plant. Each plant's occupational safety and environmental protection office is tasked with implementing and supervising workplace safety and environmental management matters, ensuring that environmental protection is embedded as a core principle of the management system. Through the adoption and promotion of an accountability system, LCY continuously improves environmental management practices to ensure that all plant operations comply with relevant regulations and standards, thereby sustaining long-term, stable development of in-plant activities.

All LCY plants have fully implemented the ISO 14001 environmental management system and obtained third-party certification. By institutionalizing management mechanisms, we strengthen monitoring and improvement of environmental issues in daily operations, ensuring compliance with environmental requirements and carbon reduction management.

As a member of the chemical industry, LCY actively assumes environmental responsibility by establishing comprehensive systems and performance indicators for carbon management, energy efficiency, air quality, water resources, chemical management, and waste management. These systems systematically reinforce environmental governance and steadily advance sustainable operations.

Environmental Protection Policies

3.1.2 Environmental Regulatory Compliance

In 2024, LCY recorded 10 environmental violations, with total fines amounting to NT$1.425 million. The majority of violations were related to provisions under the Air Pollution Control Act. In response, the company immediately activated a comprehensive review mechanism to analyze root causes and establish corrective measures. In addition to strengthening employee training on regulatory compliance and sustainability awareness, LCY also optimized internal management processes and monitoring mechanisms to prevent recurrence.

LCY is committed to achieving a "zero violations" target, continuously improving environmental management performance, and holding itself to higher standards to fulfill its environmental responsibilities

Environmental Violations in 2024

Type	No. of Violations	Fine (NT$)
Waste pollution	0	0
Air pollution	10	NT$1.425 million
Water pollution	0	0
Toxic chemicals pollution	0	0
Total	10	NT$1.425 million

3.2 Climate Strategy

3.2.1 Governance & Policies

To address climate challenges and enhance sustainability resilience, LCY established the Green Transformation Team under the ESG Sustainability Strategy Committee. Within it, the Green Operations Team is responsible for overseeing climate risk management and opportunity assessments, while integrating day-to-day management practices on climate and energy issues across all production sites.

Climate-related issues are consolidated according to the company's risk management framework and submitted to the Green Transformation Team for evaluation and review. Approved mitigation and adaptation measures are reported regularly to the Board of Directors to ensure oversight and guidance from the highest level of governance.

In terms of strategy, the company has comprehensively identified potential risks and opportunities posed by climate change to operations, employees, customers, supply chains, products and services, and brand reputation. LCY also conducts systematic risk assessments under multiple regulatory and policy scenarios (e.g., total GHG emission controls, carbon fee systems) to inform climate action planning.

Climate Risk and Opportunity Management Framework

01 Governance

- Dedicated governance body: Established the Green Transformation Team to oversee climate risk management and opportunity identification as the core climate governance unit.
- Integrated daily management: Consolidate routine climate and energy management activities across all production sites; conduct regular risk assessments and plan reviews under the company's risk management system.
- Strengthened board oversight: Climate-related issues and progress are reported regularly to the Board of Directors to enhance high-level supervision, ensure transparency, and enable active participation in decision-making.

02 Strategy

- Comprehensive risk mapping: Evaluate potential risks and opportunities of climate change across business models, employee safety, customer relationships, supply chain stability, products and services, and market reputation.
- Matrix-based prioritization: Use matrix tools to identify and prioritize five representative climate risks and three potential opportunities.
- Quantified risk assessment: Assess potential impacts of climate change on supply chain stability, production operations, and cost structure based on risk scenarios, timing, and severity, and adjust strategies accordingly.

03 Risk Management

- TCFD-based risk identification: Follow the TCFD framework to integrate climate data and systematically identify short-, medium-, and long-term risks and opportunities.
- Risk matrix and mitigation: Rank climate risks by likelihood and impact to build a risk matrix, which informs the development and implementation of mitigation and adaptation measures.
- Dynamic strategy adjustment: Continuously evaluate operational impacts of climate risks, adjusting strategies to reduce negative effects while leveraging opportunities to improve efficiency and foster product innovation.

04 Metrics & Targets

- 2021 as baseline year for all environmental KPIs

Key indicators:
- Reduction of GHG emissions (Scope 1 and 2)
- Reduction of energy intensity per unit of product
- Increased proportion of renewable energy use
- Reduction of VOC emissions
- Increased wastewater recycling rates
- Reduction of waste generation

- Data-driven management: All indicators are incorporated into annual action plans and management mechanisms. Execution and progress are regularly reviewed to support continuous improvement and strategy adjustment.

3.2.2 Climate Risk and Response

In response to the increasing risks posed by climate change, LCY references relevant climate change information and the TCFD framework to identify short-term, medium-term, and long-term climate change risks and opportunities. We prioritize these risks and opportunities based on their Impact Level and Likelihood of Impact, creating a risk matrix. Corresponding measures are then developed and implemented. Through executive meetings, the rankings are adjusted according to the relevance of these risks and issues to LCY's business and operations, ensuring appropriate responses are in place. In 2020, LCY identified the top three risks in the risk matrix as follows: Policy and regulatory risks, which include general environmental regulations and the increase in GHG emissions costs; and Transition risks, which involve the costs related to the replacement of products and services by low-carbon technologies. Appropriate management and response measures have been developed to address these risks. Looking ahead, we will continue to strengthen our multi-faceted approach to evaluating and reviewing the potential impacts of climate risks on our company. In addition to adopting adaptive strategies to mitigate the effects of climate risks, we are actively leveraging opportunities to enhance production efficiency and innovate product development. We have established relevant carbon reduction metrics and targets in response to climate risks. For more details, please refer to Section 3.3 Carbon & Energy Management.

Climate Risk Identification Process

Establish Risk List

Compile a list of risks based on TCFD recommendations to assess the impacts of climate change on LCY operations, employees, customers, suppliers, products and services, and reputation

Identify and Rank Risks

Evaluate and rank risks according to their likelihood and impact level and create a risk matrix

Confirm Major Risks

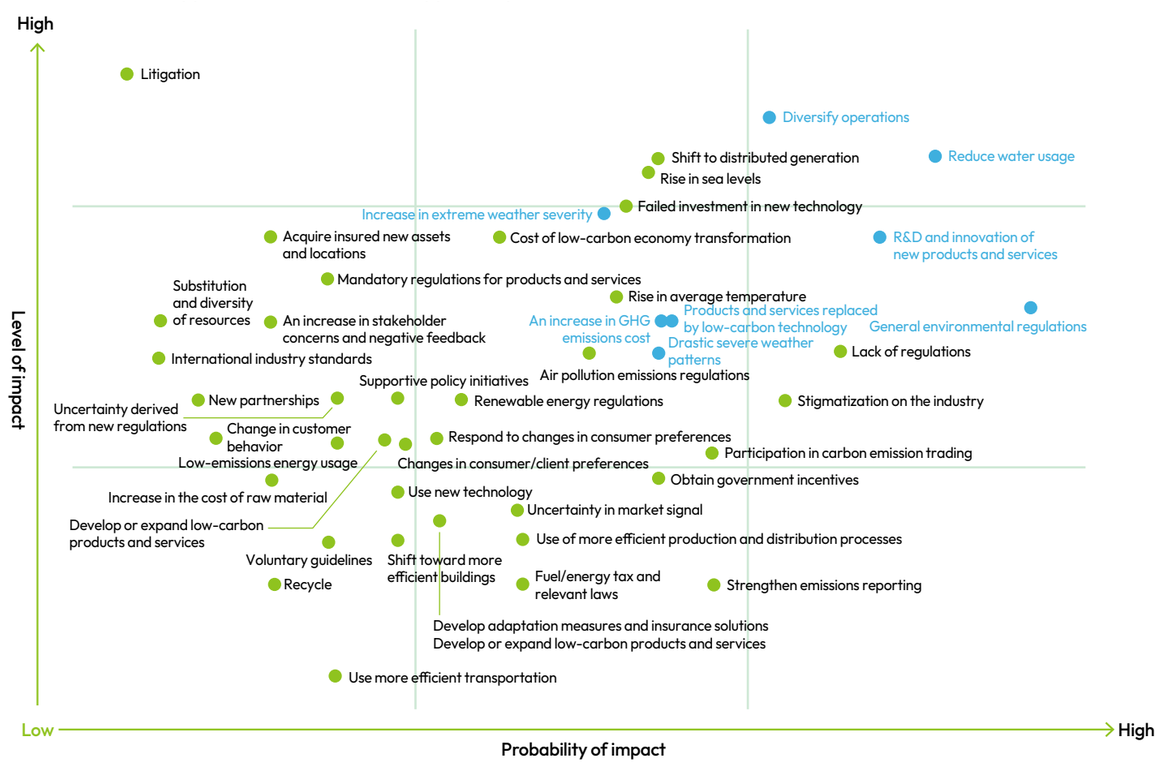
Examine critical risks according to ranking to identify three categories and a total of five major risks

Quantify Financial Impact of Major Risks

Conduct scenario-based financial quantification analyses for significant policy and regulatory risks

Risk Matrix

Using the TCFD-recommended risk list and the Risk Pathways method, we preliminarily identify potential impact pathways. Through internal department interviews and evaluation forms, we confirm the substantive impacts, scenarios, and quantification methods. Risks are then ranked based on their opportunity level (impact level × likelihood), which narrows down major climate-related risks and opportunities into a risk and opportunity matrix.



Climate Risk Identification

Type	Risk	Operational Impact	Financial Impact	Mitigation & Adaptation
Transition Risk	Stringent Environmental Policies and Regulations	Imposition of water consumption fees and carbon fees at Taiwan plants	Increase in operational cost	1. LCY's Taiwan plants are participating in the Kaohsiung City Government's water recycling facility project. We contribute by procuring reclaimed water from domestic wastewater, reducing overall water consumption. 2. Install process water recycling and rainwater harvesting units within the plant, maximizing the reuse of recycled water. Promote water-saving initiatives and actively enhance water efficiency to reduce overall water resource consumption. 3. Implement energy-saving and carbon-reduction initiatives across all facilities. Green Transformation Team (GTT) consolidates efforts, manages carbon emissions modeling (including cost predictions), and redefines LCY's short- to mid-term goals. Integrate resources and establish ongoing tracking for carbon reduction progress.
	Increasing cost of GHG emissions	Investment costs for controlling GHG emissions (e.g., renewable energy certificate purchases, carbon credit acquisitions, carbon reduction technology investments, and the procurement of energy-efficient equipment)	Increase in operational cost	1. Incorporate ISO 50001 energy management system together with a digital energy monitoring system for energy use insights. 2. We conduct annual greenhouse gas (GHG) inventories to identify emission sources and hotspots, and to implement energy-saving and carbon-reduction initiatives aimed at reducing overall energy consumption. 3. Collaborate with the value chain to procure waste steam from external entities, promoting efficient energy recycling.
	Products and services replaced by low-carbon technologies	Higher costs for low-carbon, bio-based, or eco-friendly raw materials, and limited availability in the supply chain Unable to meet client product requirements, leading to a decline in sales	Increase in operational cost and decrease in revenue	R&D is actively developing low-carbon products, incorporating carbon emissions or footprint calculations at the development stage to enhance product competitiveness
Physical Risk	Extreme weather events	1. Flood, disruption of factory operation, damages to plants 2. Blackout or energy rationing at plants	Increase in operational cost	1. All plants have implemented raised foundations and drainage facilities during construction to prevent flood-related damages. When selecting future sites, LCY will conduct natural disaster assessments and plan flood control facilities to enhance disaster resilience. 2. All business units have business continuity plans (BCP) in place. In addition to inventory planning for a continuous supply chain, LCY has global production sites and logistics facilities to address potential power outages or energy rationing events.
	Shifting Weather Patterns	Water shortage, increase in production cost	Increase in operational cost	1. Develop water shortage contingency plans to prevent operational disruptions caused by water shortages. 2. Promote water conservation projects and enhance efficient use of water to reduce consumption of water resources.

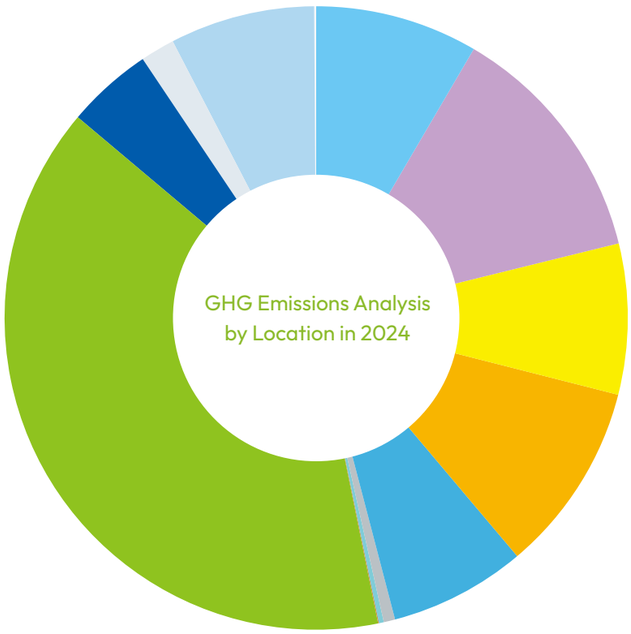
3.3 Carbon & Energy Management

3.3.1 Carbon Management

Since 2004, LCY has progressively implemented GHG inventories across all operations, verified by third parties in accordance with ISO 14064-1:2018 to track emissions across all LCY plants. LCY is also actively exploring diverse carbon reduction and low-carbon transition solutions. LCY's Taiwan plants follow the Ministry of Environment's GHG Inventory Guidelines, while China sites conduct inventories and third-party verification under ISO 14064-1:2018. The Taipei office, R&D Center, Kaohsiung Terminal Station, and Central Taiwan Science Park (CTSP) Huwei Plant also conduct voluntary inventories under ISO 14064-1:2018. U.S. and Canadian operations currently follow local regulatory requirements, with plans to gradually adopt ISO 14064-1:2018 verification for greater consistency and international alignment.

In 2024, total GHG emissions across LCY locations in Taiwan, China, the US, and Canada amounted to 762,724 tCO_2e, with a carbon intensity of 0.731 tCO_2e per ton of production. Compared to 2023, total emissions decreased by 6,836 tons, representing a 4.3% reduction in carbon intensity. From the base year (2021), LCY has reduced a cumulative total of 343,405 tons of carbon, reaching a reduction rate of 31%.

To advance sustainable development while balancing operational performance and environmental impact, LCY will continue to implement diverse energy-saving and carbon-reduction initiatives, steadily fulfilling its GHG reduction commitments. For related actions, please see Taking Action: Successful Case Studies for Reducing Carbon Emissions and Energy Use.



Sarnia Plant	0.1%	Taipei Office	0.04%	Dashe Plant	8%
Baytown Plant (US)	8%	Kaohsiung Terminal Station	0.01%	Xiaogang Plan	13%
Zhenjiang Plant	2%	R&D Center	0%	Linyuan Plant	8%
AR Plant	4%	CTSP plant (Central Taiwan Science Park)	1%	AR Plant	10%
Huizhou Plant	39%	Copper Foil Plant	7%		

TAIWAN ↓ 184,764 ton CO_2e

\+

CHINA ↓ 129,234 ton CO_2e

\+

US ↓ 975 ton CO_2e

=

762,724 ton CO_2e

Carbon reduction 343,405 ton CO_2e

Carbon emissions ↓ 31 %

Given the differences in product types and characteristics compared with traditional petrochemical industries, LCY's greenhouse gas emissions are primarily indirect emissions (Scope 2), which account for approximately 82% of total emissions, while direct emissions (Scope 1) account for about 18%. Accordingly, LCY's carbon reduction strategy focuses on conserving and improving the efficiency of electricity and steam use, with the steady goal of achieving a 42% reduction from the 2021 base year by 2030 and net-zero emissions by 2050.

LCY's carbon reduction actions are pursued along two main pathways: continuous optimization within plants and deeper collaboration with the supply chain. At the plant level, we enhance energy efficiency through process improvements, heat integration, and replacement of energy-saving equipment. At the same time, production capacity allocation and scheduling are flexibly adjusted in line with market demand and sales strategies to further improve overall energy performance.

On the supply chain side, LCY works closely with steam and power suppliers to optimize energy sources, thereby lowering the carbon emission factor of supplied steam year by year. We also adopt resource recycling practices, such as utilizing waste steam from suppliers as renewable energy, which further reduces the intensity of indirect emissions. In addition, we continue to assess opportunities for cooperation with suppliers in areas such as energy structure optimization, adoption of energy-saving technologies, and deployment of renewable energy, with the goal of amplifying carbon reduction outcomes across the value chain.

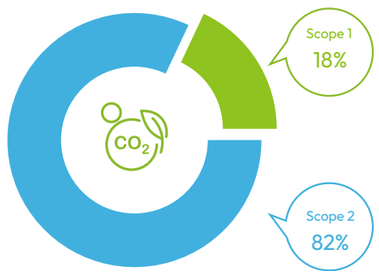
Looking ahead, LCY will continue to advance process improvement projects targeting Scope 1 emissions, focusing on reducing exhaust gas and direct fuel use. These initiatives will further strengthen plant-level carbon management, support a steady transition to low-carbon operations, and realize our long-term vision for sustainable development.

After establishing a GHG inventory system, LCY progressively advanced product carbon footprint inventories and third-party verifications at each plant, embedding carbon management into daily operations and strengthening overall environmental governance. While continuing to refine inventory practices, we actively planned for renewable energy adoption and launched in-house energy-saving and carbon-reduction projects. In 2024, LCY conducted a comprehensive review of operational conditions and carbon reduction performance, significantly expanding management targets to include operations in China, the United States, and Canada. At the same time, we reset 2021 as the carbon base year and raised our Scope 1 and Scope 2 carbon reduction target for 2030 to 42%. Guided by these more ambitious targets, LCY is firmly advancing toward its 2050 net-zero vision.

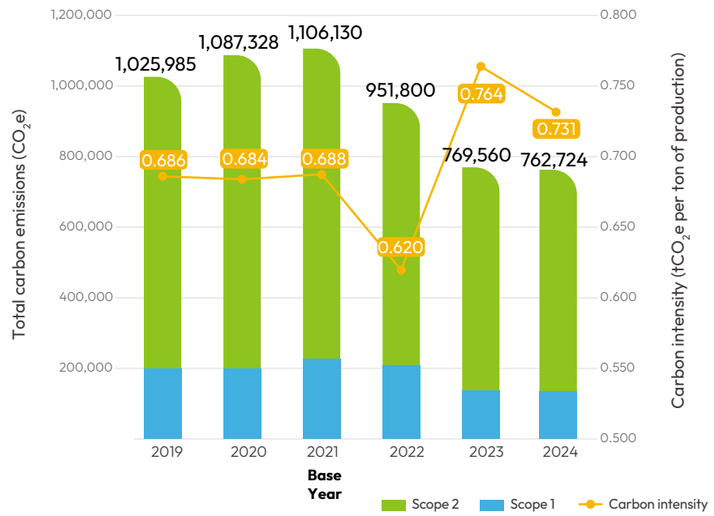
Category	GHG Emissions
Metrics	Reduction of GHG emissions compared to the base year (2021)
Short-term	2025 Targets 32%
Mid-term	2027 Targets 36%
Long-term	2030 Targets 42%

Note: The carbon base year has been adjusted from 2019 to 2021, reflecting a key milestone in LCY's expansion to overseas operations.

GHG Emissions Breakdown



LCY GHG Emissions



		2019	2020	2021 (Base Year)	2022	2023	2024
Performance Materials BU	Dashe Plant	96,634	91,161	90,392	80,963	67,028	64,474
	Xiaogang Plant	158,343	156,346	173,025	100,867	77,931	95,831
	Huizhou Plant	290,904	361,407	322,165	306,454	311,124	300,423
	AR Plant	40,485	34,060	34,431	32,961	34,254	34,126
	US Plant	55,543	59,868	58,354	52,898	51,055	57,379
Interconnect Solutions	Copper Foil Plant	68,963	67,389	69,560	61,589	58,857	54,120
Electronics Materials	Linyuan Plant	59,068	60,771	73,810	77,554	67,376	59,694
	CTSP Branch	-	-	-	83	428	4,515
	Zhenjiang Plant	116,809	112,198	120,796	116,557	16,558	13,609
Industrial Solutions BU	Kaohsiung Plant	136,954	123,168	127,231	90,047	81,705	75,470
Biosciences & Nutrition Solutions BU	Sarnia Plant	-	18,254	33,757	29,128	631	810
Other Functional Units	Taipei Headquarters	320	299	276	277	274	306
	Nanzih R&D center	1,050	1,416	1,412	1,530	1,805	1,858
	Qianzhen Logistics Center	912	991	920	892	533	109
Scope 1 (tCO_2e)		199,623	199,267	227,116	208,415	137,035	134,817
Scope 2 (Market-based emissions) (tCO_2e)		826,361	888,061	879,013	743,385	632,525	627,907
Scope 2 (Location-based emissions) (tCO_2e)		826,361	888,061	879,013	743,385	634,398	629,825
Total (tCO_2e)		1,025,985	1,087,328	1,106,130	951,800	769,560	762,724
Carbon intensity (tCO_2e per ton of production)		0.686	0.684	0.688	0.620	0.764	0.731

Note:

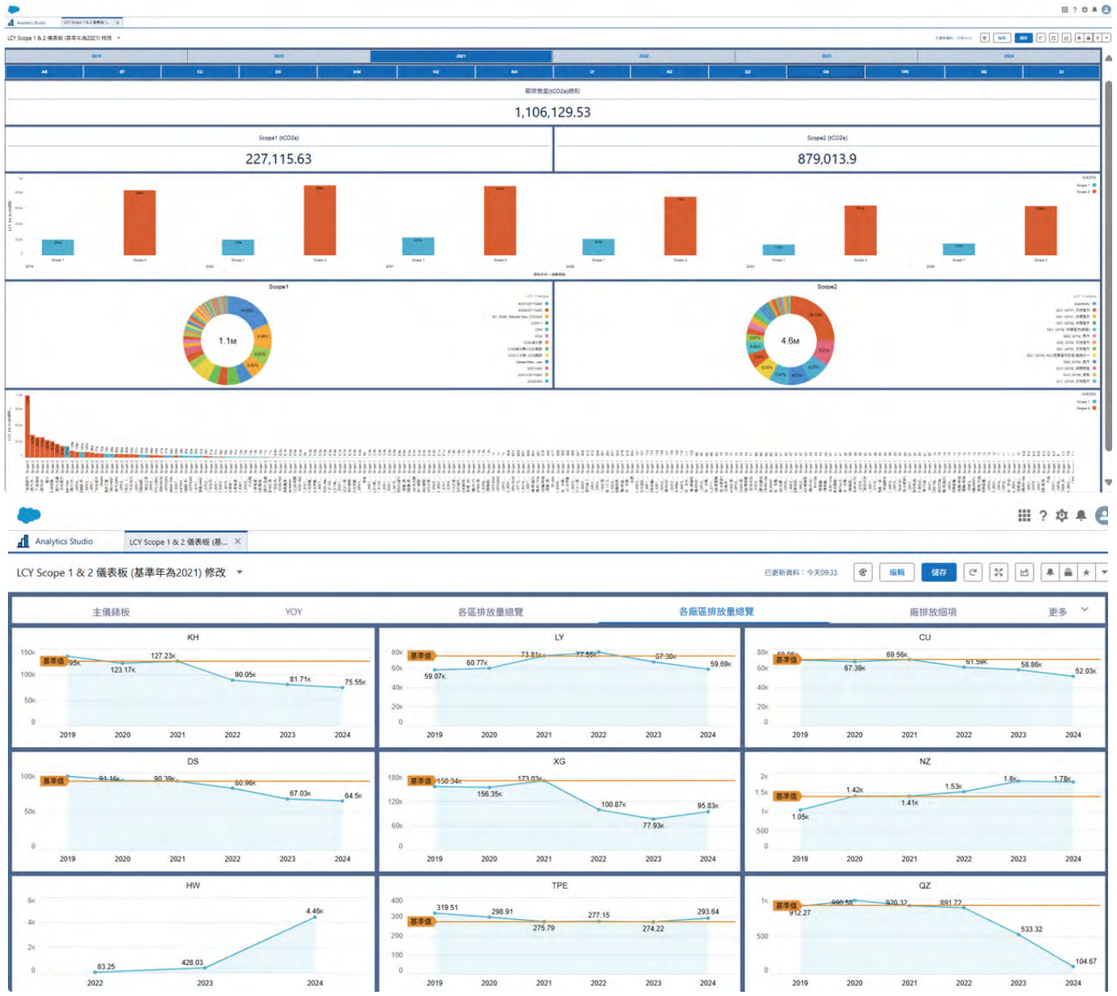
1. The total carbon emissions include Scope 1 and Scope 2 GHG emissions from LCY's operations in Taiwan, China, the United States, and Canada. Scope 2 emissions are calculated using the market-based method. GHG types covered include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).
2. Emission factor data sources for Taiwan: The Ministry of Environment (MOENV)'s Greenhouse Gas Emission Factor Table (6.0.4) and the electricity emission factor released by the MOEA Energy Administration in 2024. For the Zhenjiang Plant, data was based on the Announcement on the Release of 2023 Electricity Carbon Footprint Factor Data (Ministry of Ecology and Environment, PRC). For the Huizhou and AR Plants, calculations followed the 2022 National Average Electricity Emission Factor (Ministry of Ecology and Environment, PRC). For the U.S. Baytown Plant, the latest electricity emission factors announced by the U.S. EPA (2025 GHG Emission Factors Hub, eGRID: ERCT) were applied.
3. The emissions from each location are aggregated using the operational control approach. Emissions from each location were aggregated using the operational control approach. Taiwan sites (Kaohsiung, Xiaogang, Copper Foil, Linyuan, and Dashe Plants) follow Taiwan EPA's GHG Inventory Guidelines. China sites (Zhenjiang, Huizhou, and AR Plants) follow ISO 14064-1:2018, apply Global Warming Potentials (GWPs) from the IPCC Sixth Assessment Report (2021), and are verified by third parties. The R&D Center, Kaohsiung Terminal Station, Taipei Office, CTSP Branch, and Sarnia Plant conduct self-inventories under ISO 14064-1:2018. The U.S. plant conducts self-inventories per local regulatory requirements, applying GWPs from the IPCC Fifth Assessment Report (2014).
4. The carbon base year has been adjusted from 2019 to 2021, reflecting a key milestone in LCY's expansion to overseas operations.

Carbon intensity = total carbon emissions (Scope 1+Scope 2) / total production (tons).

LCY Carbon Management System

LCY has established a digital ESG platform to systematically track carbon emissions across all plants, monitor emission trends, and drive carbon reduction initiatives. The platform consolidates greenhouse gas (GHG) inventory data from each site, covering fuel types, electricity, steam, process gases, and refrigerants, and combines emission factors with activity data to precisely calculate emissions by unit. Each production plant conducts annual third-party verification of its GHG inventories to ensure that reported emissions accurately reflect actual conditions.

In preparation for the government's planned implementation of a carbon fee in 2025, LCY's Taiwan facilities are simultaneously planning energy-saving and carbon-reduction measures and applying for voluntary reduction programs. In addition, LCY intends to introduce an internal carbon pricing mechanism between 2026 and 2027, adopting a "shadow pricing" model to assess the impact of carbon emissions on operating costs and the benefits of reduction. This mechanism will serve as a reference for investment evaluations, risk management, and long-term strategic planning.



Product Carbon Footprint Inventory, Management, and Training

In response to global climate change and corporate carbon reduction responsibilities, LCY actively promotes product life cycle assessments (LCA) and carbon footprint inventories, covering emissions from raw material extraction to the manufacturing stage (including on-site waste treatment). In 2024, LCY completed carbon footprint verification for 34 major products and plans to expand coverage to overseas facilities in subsequent years, along with setting audit frequency, review processes, and update mechanisms. To enhance the efficiency and accessibility of carbon footprint assessments, LCY will introduce SimaPro, a life cycle assessment software, in 2025, enabling site managers to conduct queries and operations. Training programs will also be provided to strengthen the practical skills and expertise of internal staff in carrying out product carbon footprint inventories.

Taking Action: Successful Case Studies for Reducing Carbon Emissions and Energy Use

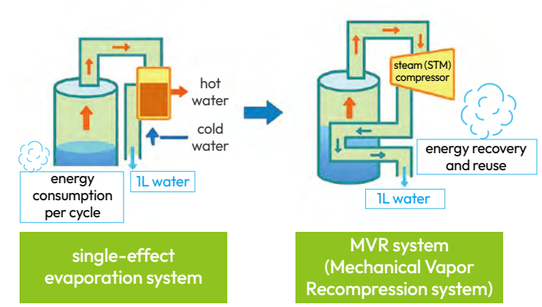
Heat Integration | Kaohsiung Plant

Improvements

The PE plant installed a Mechanical Vapor Recompression (MVR) system.

In the PE production process, large amounts of steam are required for dewatering. Previously, a traditional single-effect crystallization evaporator was used, which resulted in significant energy waste. The MVR system compresses and recirculates the process fluid as a refrigerant, reusing the latent heat from the secondary steam generated during the evaporation and concentration process as the heating source. This reduces reliance on external steam during evaporation and concentration.

- Annual Steam Conserved: 27,720 tons/year
- Annual Carbon Reduction: 4,923 tons/year (Scope 2)



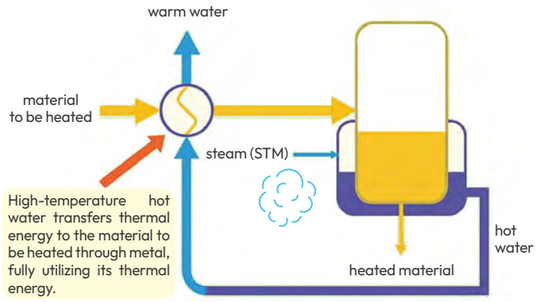
Heat Integration | Kaohsiung Plant

Improvements

In the PE process, energy efficiency was improved by using steam condensate from the stripper tower reboiler to preheat the stripper tower feed.

By recovering the steam condensate to raise the feed temperature, steam consumption was reduced.

- Annual Steam Conserved: 5,971 tons/year
- Annual Carbon Reduction: 1,893 tons/year (Scope 2)



Process Optimization | Kaohsiung Plant

Improvements

Reduction and Recycling of PE Plant Wastewater Effluent

The PE plant generates approximately 10,963 tons of wastewater annually. By applying cooling crystallization technology, PE and SF are recovered from the effluent, effectively reducing total discharge volume. This also decreases the amount of natural gas required for incineration. It is estimated that about 13% of wastewater resources can be recovered, resulting in both operating cost savings and reduced energy consumption.

- Annual Carbon Reduction: 1,154 tons/year (Scope 1)

Discharged Waste Liquid

Waste Liquid Cooling Crystallization and Separation

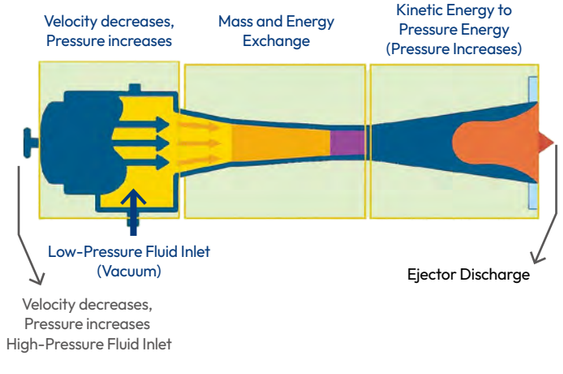
Heat Integration | Xiaogang Plant & Huizhou Plant

Improvements

Installation of an E-jector system for secondary steam recovery

An E-jector was installed to mix high-temperature, high-pressure steam with low-pressure steam, generating steam at the required temperature and pressure for production. Compared to using a conventional pressure-reducing valve, this approach is more energy-efficient. In addition, the steam jet can draw in cold water, heat it to the required temperature, and supply it to process areas for heating and industrial water use.

- Annual Steam Conserved: 11,328 tons/year
- Annual Carbon Reduction: 3,170 tons/year (Scope 2)



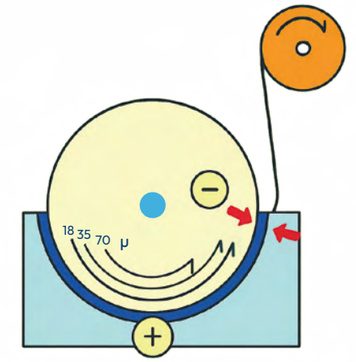
Process Optimization | Copper Foil Plant

Improvements

Optimization of ED Electroplating Anode–Cathode Gap

At the Copper Foil Plant, the anode–cathode gap in the ED electroplating process was reduced to 10–12 mm, lowering cell voltage by approximately 0.3 V and achieving measurable energy savings.

- Annual Energy Savings: 3,324,240 kWh/year
- Annual Carbon Reduction: 1,692 tons/year (Scope 2)



Low-Carbon Fuel Transition | Dashe Plant

Improvements

Low-Carbon Transition and Enhanced Environmental Resilience for Steam Boiler

At the Dashe Plant, the steam boiler fuel system was converted from heavy oil and process gas co-firing to natural gas, significantly reducing CO_2, SOx, and NOx emissions. An SCR denitrification system was also installed to strengthen air pollution control. In addition, a backpressure steam turbine generator was introduced to recover residual energy from pressure-reducing steam, thereby improving overall energy efficiency and enhancing environmental resilience.

- Annual Carbon Reduction: 7,012 tons/year (Scope 1)
(Verified through a DNV GHG offset project)


DNV

溫室氣體抵換專案
查證聲明書

李長榮化學工業股份有限公司大社廠

Process Optimization | Linyuan Plant

Improvements

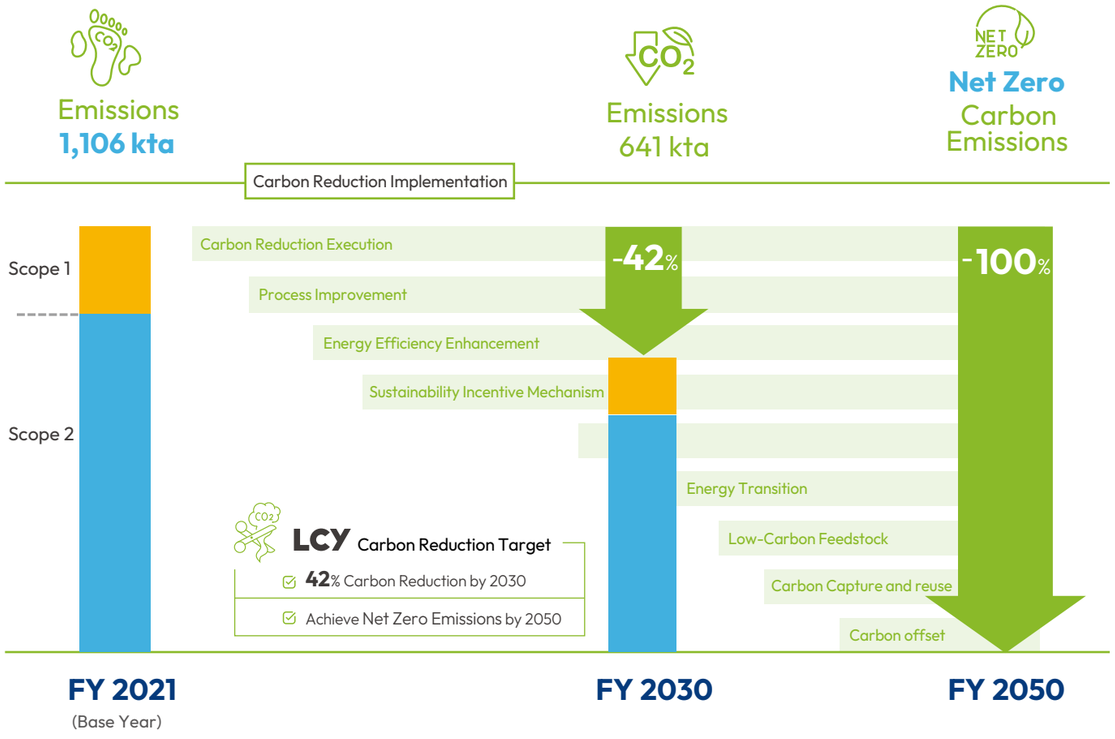
High-Efficiency Heat Exchange: Powering Energy Saving and Carbon Reduction

At the Linyuan Plant, the bottom reboiler heat exchanger of the distillation column was replaced with a high-efficiency plate heat exchanger. This upgrade significantly improved heat recovery efficiency at the column bottom, reducing natural gas consumption for heating, enhancing overall process energy utilization for carbon reduction.

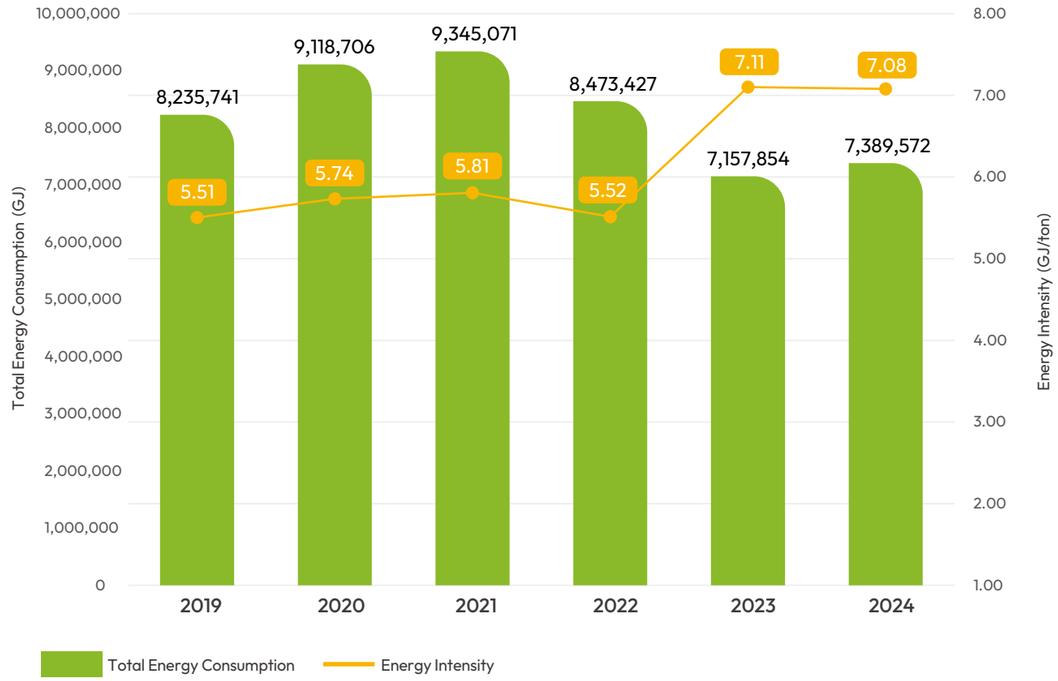
- Annual Natural Gas Savings: 691,222 M^3/year
- Annual Carbon Reduction: 1,435 tons/year (Scope 2)

Note:
Carbon reduction benefits are estimated using the following formula:
Estimated Energy Savings (activity data) × Emission Factor × GWP (Global Warming Potential)
Sources of emission factors for each energy type are as follows:
* Steam: Based on the latest emission factor announced by the steam supplier. For Kaohsiung and Xiaogang Plants, the CSC (China Steel Corporation) steam factor of 0.1985959425 tCO_2e/ton of steam is applied.
* Electricity: Taipower's 2024 published grid emission factor of 0.474 kgCO_2e/kWh.
* Natural Gas: Emission factor listed in the Taiwan Ministry of Environment's Greenhouse Gas Emission Coefficient Management Table 6.0.4 version

LCY Carbon Reduction Roadmap & Target Emissions



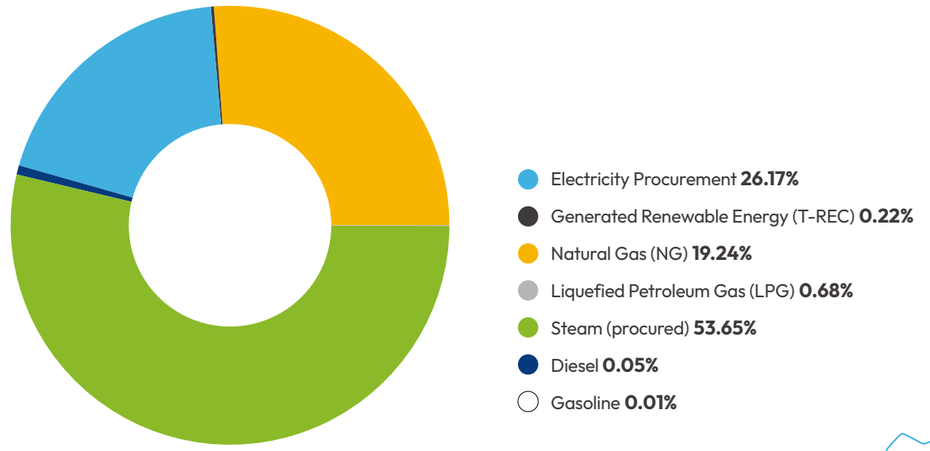
LCY Energy Consumption



3.3.2 Energy Management

Since 2012, the Dashe Plant has served as a demonstration site for ISO 50001 Energy Management System implementation, an initiative subsequently extended to other production sites. By the end of 2024, all production plants in Taiwan and China had achieved 100% adoption and third-party certification of ISO 50001, with regular maintenance and performance reviews to ensure effective operation of the system. LCY actively promotes energy management through systematic data monitoring and cross-department collaboration mechanisms. We continuously review production processes and optimize operating parameters to enhance overall energy efficiency. Each plant also conducts regular inventories of energy-intensive equipment and identifies potential energy-saving opportunities. High-efficiency equipment and smart control systems are introduced to steadily reduce energy consumption per unit of product, moving toward the goal of high-efficiency, low-carbon sustainable operations.

In 2024, LCY's operations in Taiwan, China, the United States, and Canada consumed a total of 7,389,572 GJ of energy. Compared with 2023, total energy consumption increased by 3.2%, while energy intensity decreased slightly by 0.34%. Relative to the 2021 base year, total energy consumption decreased by 20.9%, but energy intensity rose by approximately 21.9%. This shift was mainly due to a 3.6% increase in production output compared with 2023, and a 35% decrease compared with the base year. However, the basic level of energy required to sustain continuous operations did not significantly change, resulting in a relative increase in energy intensity per unit of product. LCY's energy use is primarily composed of steam (53.7%) and electricity (26.2%). To reduce both the costs and environmental burden of self-produced steam, LCY has, since 1994, been purchasing waste steam from China Steel Corporation, pioneering industrial resource recycling. Combined with process heat integration, equipment replacement, and the introduction of energy-saving technologies, these measures have effectively improved energy efficiency, advancing LCY's low-carbon transition and long-term net-zero goals.



LCY's Energy Consumption from 2019 to 2024

unit: GJ

Type	2019	2020	2021 (Base Year)	2022	2023	2024
Natural Gas (NG)	1,542,205	1,627,646	1,617,921	1,479,354	1,265,761	1,421,500
Liquefied Petroleum Gas (LPG)	13,963	13,002	49,373	102,893	65,427	50,394
Steam (procured)	4,588,031	5,222,464	5,367,312	4,728,518	3,905,787	3,964,143
Diesel	11,328	8,281	6,782	5,260	3,802	3,415
Gasoline	2,389	1,556	1,387	1,266	1,221	495
Electricity procurement	2,077,609	2,245,450	2,302,012	2,155,848	1,901,546	1,933,736
Generated renewable energy (T-REC)	214	307	284	289	14,311	15,889
Total Energy Consumption	8,235,741	9,118,706	9,345,071	8,473,427	7,157,854	7,389,572
Energy intensity per unit of product	5.51	5.74	5.81	5.52	7.11	7.08

Note:

1. Total energy consumption includes operating sites in Taiwan (Kaohsiung Plant, Xiaogang Plant, Copper Foil Plant, Linyuan Plant, Dashe Plant, CTSP Branch, R&D Center, Kaohsiung Terminal Station, Taipei Office), China (Zhenjiang Plant, Huizhou Plant, AR Plant), as well as plants in the US and Canada.
2. The base year for energy consumption has been adjusted from 2019 to 2021, reflecting LCY's milestone expansion into overseas operations.
3. Energy intensity (GJ per ton of product)
4. Sources of fuel calorific values:

   The calculation of LCY's energy consumption is based on the following sources of fuel calorific values:

   For Taiwan operations, calculations are based on the 2020 Energy Statistics Handbook published by the Bureau of Energy, Ministry of Economic Affairs, and relevant announcements from the Ministry of Environment. For the three plants in mainland China, the reference is GBT 2589-2020 General Rules for Calculation of the Comprehensive Energy Consumption. For the U.S. operations, data are based on calorific values announced by the U.S. Energy Information Administration (EIA). For the Canada operations, calculations follow data released by the competent authority's Fuel Life Cycle Assessment Model.

3.3.3 Promoting Renewable Energy

In light of the global shift towards renewable energy and the policies of the Taiwan government, LCY is actively expanding renewable energy facilities and equipment. LCY implemented solar power generation equipment at both the Dashe Plant and the LCY Nanzih R&D Center, generating 1,222GJ and 126GJ of electricity respectively. Taiwan Renewable Energy Certificates (T-RECs) have also been obtained. In addition, in response to the Regulations for the Management of Setting up Renewable Energy Power Generation Equipment of Power Users above a Certain Contract Capacity (commonly referred to as the "Large Electricity Consumers Article" in Taiwan), the Renewable Energy Development Act, and the Regulations on Energy Users' Conservation Targets and Implementation Plans for 2025–2028, LCY's Green Transformation Team has coordinated with relevant plant units to plan and implement renewable energy usage starting in 2023, in line with statutory requirements. We integrated the company's short-, mid-, and long-term measures for carbon reduction and determined targets for renewable energy use to reduce dependency on fossil fuels and mitigate the impact of energy consumption on climate change. In 2024, LCY's renewable energy usage rate increased from 0.003% in the base year to 0.22%, representing a growth of nearly 70 times.

3.4 Air Quality Management

3.4.1 Air Quality Policies

CY continuously improves air quality management across all production sites. Each business unit regularly reports the current status and improvement measures to the management team during monthly KPI meetings. These reports include a review of air pollution emission trends and the improvement efforts at each plant. The Environmental Risk Management Department collaborates with the occupational safety and environmental protection office personnel from each plant, as well as external scholars and experts, to strengthen the routine promotion of pollution prevention activities through cross-plant personnel integration and audits. Primary management strategies include regular monitoring, equipment optimization, and information transparency. Continuous monitoring with dual dimension (time and space) management. For the spatial dimension, LCY uses the Fourier Transform Infrared Spectroscopy (FTIR) around the entire plant perimeter and establishes an odor fingerprint map for the factory perimeter. Additionally, with the aid of OP-FTIR, we continuously develop emission fingerprint identification for tracking and improvement. In the event of an abnormal warning, we can immediately trace the source and perform data-driven and scientific assessments. For the temporal dimension, LCY conducts daily self-monitoring supplemented with weekly inspections by the EYE-C-GAS team using infrared cameras. Quarterly, we engage external parties for inspections, and at least once a year, we conduct stack testing to ensure all air pollutants comply with regulations. We also combine AI tech with our air quality monitoring and warning system, obtaining real-time air quality data from external sources such as the Ministry of Environmental and municipal governments, and integrating it into our database. If the air quality exceeds regulatory standards, the system immediately issues alerts, ensuring the quality of the production sites.

Regular monitoring and testing

We implement dual-dimensional management of time and space to monitor and establish potential odor fingerprint maps around the plant perimeter. If an abnormal warning occurs, we can immediately determine and track the source.

- Integration with AI Factory
- Regular Monitoring: Daily self-monitoring, weekly inspections using infrared imaging by the EYE-C-GAS team, and quarterly external inspections
- Utilizing FTIR for autonomous monitoring

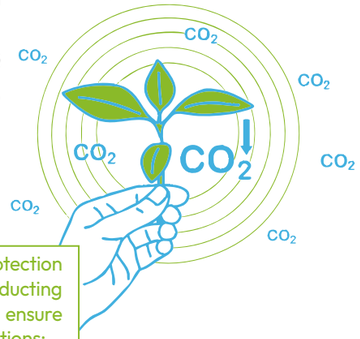
Active reduction efforts

In response to various global regulations, LCY plants in Taiwan, China, and the US conduct strict self-management.

- Phased replacement of equipment and components
- Optimization/installation of advanced prevention and control equipment
- Management by Walking Around (MBWA)
- Regular review of reduction performance

Information transparency

We disclose emissions data honestly and transparently, strengthening internal improvements through external supervision. We also monitor regulatory updates and conduct compliance evaluations to ensure adherence to legal standards.



Each operational site's occupational safety and environmental protection teams are responsible for collecting relevant regulations, conducting compliance evaluations, and providing training and advocacy to ensure pollutant emissions remain within standards. Pollutant emission regulations:

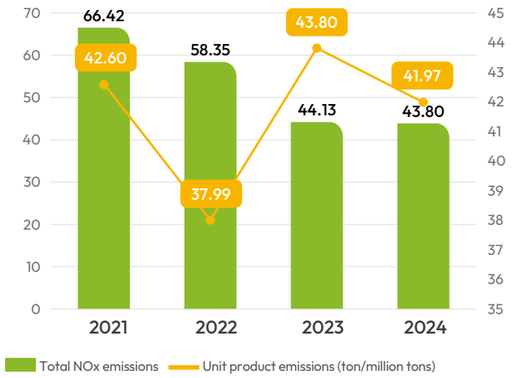
Taiwan	All plants have adopted regulatory identification procedures set forth by the air pollution emission control regulations for Kaohsiung-Pingtung area.
China	Emissions standards are established under the Atmospheric Pollution Prevention and Control Law, mandating industrial sectors in each region to establish total emission control targets. Standards encompass particulate matter, sulfur dioxide, nitrogen oxides, and volatile organic compounds.
US	The Environmental Protection Agency (EPA) primarily establishes emission standards for industries under the Clean Air Act. These standards are designed to regulate the release of harmful substances into the atmosphere, including sulfur dioxide, nitrogen oxides, volatile organic compounds (VOCs), and particulate matter such as PM2.5 and PM10.

3.4.2 Air Pollution Reduction Measures

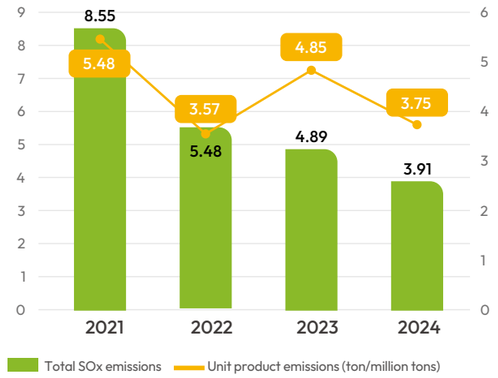
LCY continuously undertakes phased replacement of equipment parts, installation of Selective Catalytic Reduction (SCR) facilities, process equipment adjustments, and the setup of exhaust gas collection and treatment facilities to reduce VOC emissions and decrease NOx levels. Internally, we hold regular meetings to review emission data and the improvement status of each plant. We also enhance equipment inspection management and provide education and training to minimize the environmental risks and hazards posed by specific air pollutants. In 2024, NOx emissions per unit of product decreased by 4% compared with the previous year, SOx emissions decreased by 23%, and VOCs decreased by 1%.

For target-setting, VOC reduction has been prioritized, with Taiwan plants—where emissions are most significant—set as the focus. The strategy is to reduce VOC emissions through process optimization, source-level improvements, and upgrades to pollution control equipment. By 2030, VOC emissions from Taiwan plants are targeted to be 15% lower than the 2021 base year. Due to lower overall plant utilization in 2024, VOC emissions at Taiwan facilities were also significantly reduced, reaching a 17.9% decrease compared with the 2021 base year.

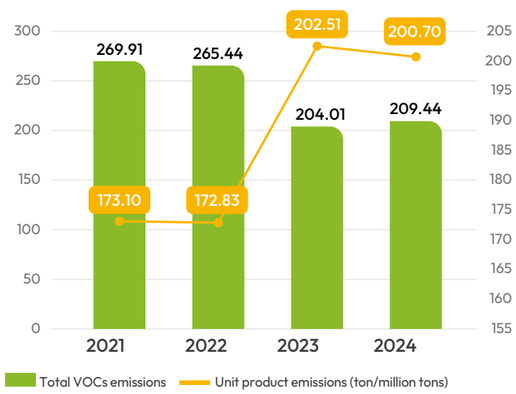
NOx Emissions & Unit Product Emissions



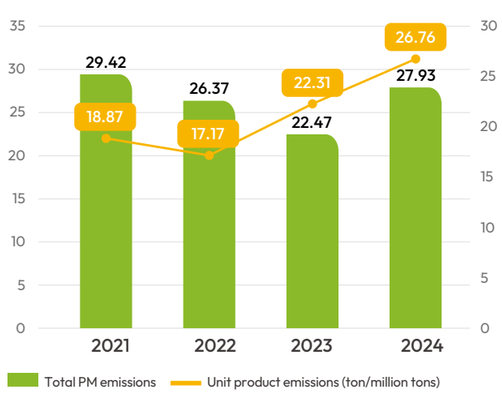
SOx Emissions & Unit Product Emissions



VOCs Emissions & Unit Product Emissions



PM Emissions & Unit Product Emissions



2024 LCY Air Pollutant Emissions Data (Unit: ton/year)

Region	Unit: Ton	NOx	SOx	VOCs	PM	Hazardous Air Pollutants (HAPs)
Taiwan	Dashe Plant	6.65	0.37	9.42	3.45	0.33
	Kaohsiung Plant	6.98	0.71	39.26	0.77	0.31
	Linyuan Plant	3.12	0.10	26.04	0.09	0.13
	Xiaogang Plant	2.60	1.01	76.71	0.54	70.87
	Copper Foil Plant	0	0	4.30	3.36	0
	Kaohsiung Terminal Station	0	0	0.63	0	0
	R&D Center	0	0	0	0	0
	CTSP Branch	1.82	0	0.86	0	0
China	Huizhou Plant	7.43	0.91	34.21	7.15	-
	Zhenjiang Plant	0	0	0.53	0	-
	AR Plant	2.74	0.59	3.86	0.30	-
US	US (Baytown) Plant	12.47	0.22	13.62	12.28	-
Canada	Sarnia Plant	0	0	0	0	-
	Total	43.80	3.91	209.44	27.93	71.65

Note 1: Emission quantities of air pollutants at each location are calculated based on testing data, considering only production processes and not accounting for mobile sources.

Note 2: Disclosure for HAPs data from China plants and the US (Baytown) plant is not required and therefore, the data is not currently disclosed.

3.5 Water Management

3.5.1 Water Policies

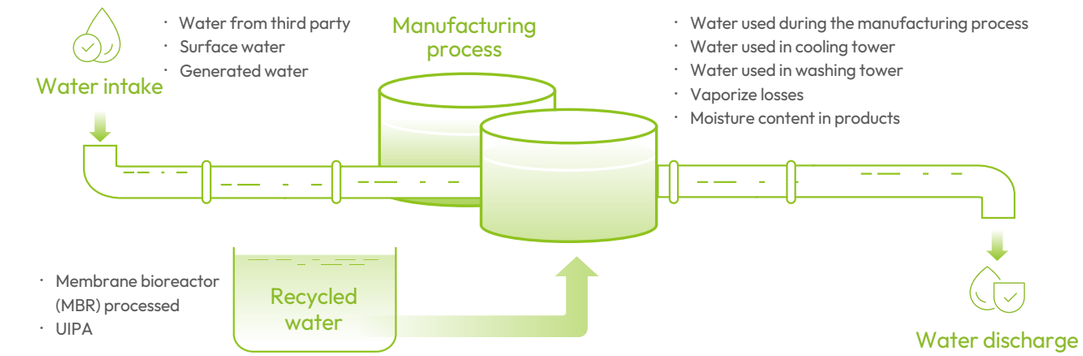
We have identified water resource risks in our main production locations with WRI's water assessment tool, Aqueduct Water Risk Atlas. Plants in Kaohsiung (Taiwan), Huizhou (China), AR (China), and Zhenjiang (China) are in regions of low baseline water stress; and Baytown (US) has low-to-medium baseline water stress. No LCY plants are located in regions with high or extremely high baseline water stress. In spite of this, each LCY plant continues to actively manage water resources internally and through external collaboration to mitigate the impact of potential water shortages.

The UN World Water Development Report 2020 highlighted the cross-sectoral influence of water resources. In response, we signed a reclaimed water usage contract with the MOEA Industrial Development Bureau for the Kaohsiung Linhai Water Resource Centre. In alignment with government policies, we agreed to use 2,000 tons of reclaimed water per day from the Linhai Reclaimed Water Plant for plant operations starting in 2022. This project integrates the capabilities of sewage treatment and reclaimed water plants, pooling resources from the private sector, government, and corporations to transform municipal wastewater into reclaimed water. Five companies, including LCY, have joined this initiative, combining resources, manpower, and technology to optimize water resource efficiency. Additionally, Taiwan's unique geographical factors result in significant differences in reservoir water supply between dry and wet seasons. To address water shortages during dry periods, we plan to enter long-term agreements with external water truck suppliers to maintain a water supply. In 2024, the company's total water withdrawal was 4,976.6 million liters, and total water discharge was 2,284.7 million liters.

Water is a critical component in chemical production, used for cooling, steam generation, and raw material processing. Consequently, LCY prioritizes water resources as a key risk factor and implements proactive management measures to enhance the importance of water resource issues from governance, strategic, and technical perspectives. The governance aspect includes elevating the importance of water management and setting water conservation goals; The strategic aspect includes 1) increasing the amount of water recycled at the plants by recycling steam condensate, using MBR technology to treat wastewater at plants, and 2) installing water conservation facilities to reduce water withdrawals and working with external parties to implement a water reclamation program; and the technical aspect includes research, development, and optimization of MBR technology and other technologies that improve water use efficiency. Therefore, in-plant wastewater recycling is regarded as a key indicator. It refers to wastewater that, after treatment in the sewage treatment plant, would otherwise be discharged but is instead further filtered and reused. At LCY's Taiwan operations, wastewater recycling is carried out at the Linyuan and Kaohsiung plants, where MBR technology and additional wastewater reuse facilities have been implemented. In 2024, a total of 187,612 tons of wastewater were recycled, representing a recycling rate of 11.9%.

Occupational safety and environmental protection teams at each plant are responsible for collecting wastewater discharge regulations, conducting compliance evaluations, and promoting adherence to these standards. Water quality is continuously monitored at discharge points. By developing water treatment equipment, optimizing equipment performance, and installing filter sand systems, we effectively reduce harmful substances in the effluent, thereby improving the quality of the receiving water bodies and ensuring that wastewater discharge meets or exceeds regulatory standards.

- For LCY Taiwan facilities, the national Effluent Standards are the primary regulation. We also strictly control the quality of factory discharge water according to the regional effluent standards specific to the industrial zones where our operations are located.
- For our China facilities, we comply with the Water Law of the People's Republic of China as the primary regulation and adhere to the Class III discharge standards, rigorously following these to minimize the impact of pollutants on the environment.
- LCY US facilities comply with the relevant regulations of the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ).



Elevate Water Resource Governance and Set Water Conservation Targets

- Aim for recycled water usage to account for 20% of total water usage by 2030
- Establish an Energy & Water Conservation Committee to conduct cross-departmental meetings with plant managers and business units
- Develop an emergency response plan for water shortages.

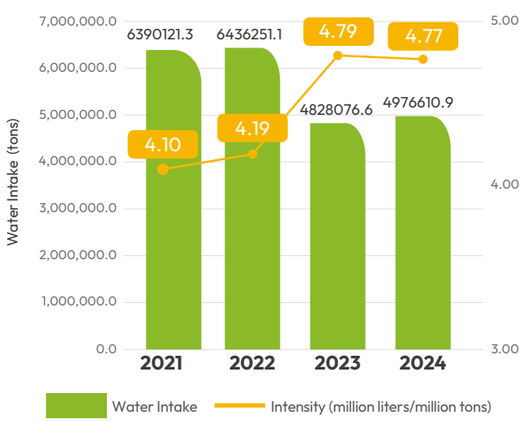
Enhance water recycling and reduce water withdrawal

- Increase water recycling: Implement internal management strategies (process water recycling, including steam, condensate, and wastewater) and collaborate externally for reclaimed water, integrating municipal wastewater recycling
- Reduce water withdrawal: Install water-saving hardware, such as stormwater interception systems, summer sprinkler water collection systems, larger pump systems for increased circulating water, and reuse water from scrubbing towers
- Optimize water treatment equipment by integrating MBR technology

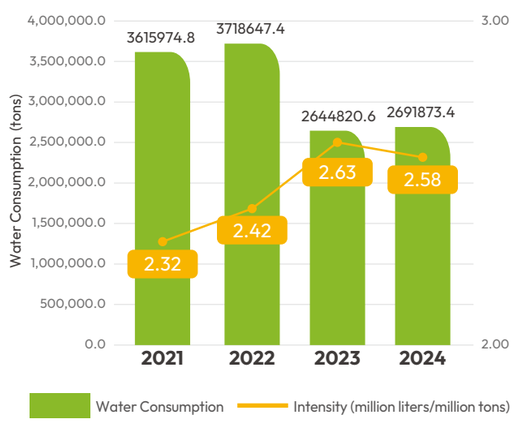
Develop climate adaptation technologies to reduce pollution/manage diversions

- LCY's self-developed nano-scale MBR 3.0
- Enhance industrial water use efficiency
- Improve the efficiency of centralized water treatment systems

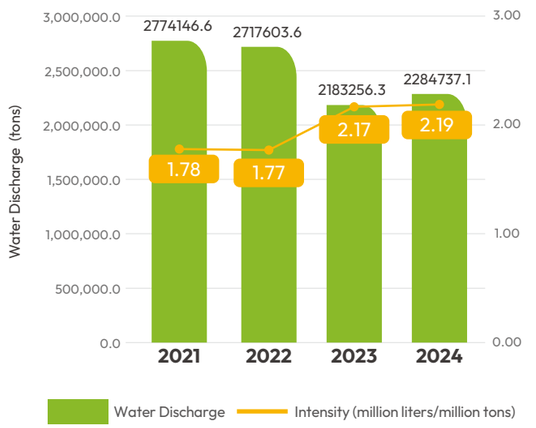
Water Intake and Unit Water Intake



Water Consumption and Unit Water Consumption



Water Discharge and Unit Water Discharge



Total Water Intake (Categorized by Source)

Source	2024 Water Withdrawal (Unit: million liters)
Surface water	372.7
Water from third party – tap water	2,465.7
Water from third party – purchased reclaimed water	669.7
Generated water	1,452.2
Rainwater	16.3
Total water withdrawal	4,976.6

Note 1: LCY's water intake does not include seawater; all water intake falls under the category of freshwater with total dissolved solids ≤ 1,000 mg/L

Note 2: Generated water output includes condensed water from externally purchased steam (calculated at 1 ton of generated water per 1 ton of steam produced) and condensed water after purification of UIPA.

Water Discharge in 2024		(Unit: million liters)
Categorized by Destination	Surface water	223.5
	Water to third party	2,061.2
	Groundwater	0
	Sea water	0
Freshwater or others	Freshwater (total dissolved solids ≤ 1,000 mg/L)	2,284.7
	Others	0
	Total water discharge	2,284.7
	Total water consumption	2,691.9

Note 1: Total water consumption = total water withdrawal – total water discharge (including water sales of 9,992 metric tons from the Linyuan Plant).

Note 2: At LCY's operating sites in Taiwan, China, the US, and Canada, all wastewater is discharged to industrial park wastewater treatment plants (third-party water), except for the US plant, which discharges to a nearby surface water body.

3.5.2 Water Conservation Measures

Reclaimed Water Project

Since 2018, LCY's Kaohsiung Plant has supported the Kaohsiung City Government Linhai Reclaimed Water Project, utilizing municipal wastewater converted for industrial use as reclaimed water. This project integrates the capabilities of sewage treatment and reclaimed water plants, pooling resources from the private sector, government, and corporations to optimize water resource efficiency. For example, at the Kaohsiung Plant, reclaimed water is used to supplement cooling towers as circulating water. As the water is cleaner, it saves 50-100 tons of water daily from the cooling towers' discharge, amounting to approximately 18,000-36,000 tons of water saved annually.

In-plant Water Recycling

To reduce water resource consumption during operations, we actively implement water conservation measures and use recycled water within the plant. Through the recovery of process steam and condensate, the introduction of MBR technology in certain plants, and the installation of wastewater reuse equipment, we continuously monitor water usage and develop equipment to improve water use efficiency. For instance, since 2021, the Kaohsiung Plant has optimized wastewater treatment facilities, using SBR-treated wastewater, which, after obtaining water reuse permits, is used as scrubber water for incinerators, saving 50-100 tons of water daily, or 18,000-36,000 tons annually.

MBR Water Recycling Technology

LCY developed its own "EPPA-Membrane Bioreactor (MBR)" water recycling technology. Since 2016, the Kaohsiung Plant has implemented MBR equipment to fully recycle process wastewater. Combined with big data intelligent biological treatment systems, over 90% of the plant's wastewater is successfully recycled and reused. The system can handle up to 1,000 tons of process wastewater daily, significantly reducing potential pollution from process wastewater. The recycled water quality surpasses that of purchased industrial water and can be directly used for cooling tower replenishment and cleaning incinerator scrubbers. The MBR equipment thus expands "recycled water" resources and enhances water supply flexibility.

3.5.3 Water Pollution Prevention Measures

Occupational safety and environmental protection teams at each plant are responsible for collecting wastewater discharge regulations, conducting compliance evaluations, and promoting adherence to these standards. Measures to prevent water pollution include continuously monitoring water quality at discharge points; developing water treatment equipment; optimizing equipment performance; and installing filter sand systems. These measures help us to effectively reduce harmful substances in the effluent, thereby improving the quality of the receiving water bodies and ensuring that wastewater discharge meets or exceeds regulatory standards. In 2024, LCY had no incidents of non-compliance with water quality discharge regulations.

Effluent Discharge Standards	
Taiwan	The primary regulation is the national Effluent Standards, along with regional effluent standards specific to the industrial zones where our operations are located
China	The primary regulation is the Water Pollution Prevention and Control Law of the People's Republic of China, and LCY adheres to Class III discharge standards
US	Compliance with relevant regulations of the US's Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ)

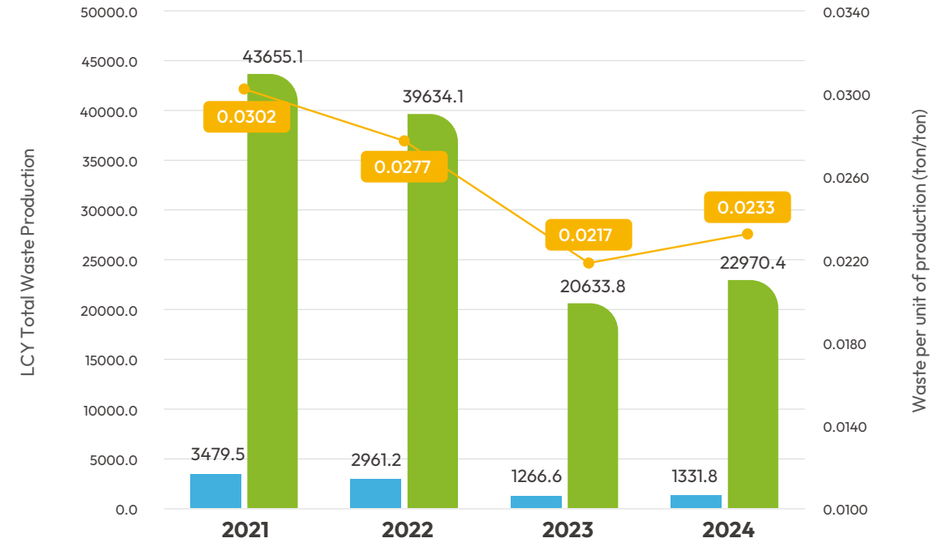
3.6 Waste Management

3.6.1 Waste Management

The quality of upstream raw materials significantly impacts product quality. If the upstream supply quality is poor, it can lead to lower production yields and negatively affect the company's operations. This situation necessitates the use of more resources and results in increased internal waste production and higher corresponding costs. Industrial waste is handled by qualified downstream contractors. If these contractors fail to comply with environmental laws and do not properly dispose of the waste, it can lead to additional environmental issues, impacting the company's reputation. Therefore, all waste disposal activities comply with legal regulations. We plan and manage non-hazardous and hazardous waste storage areas, apply for discharge or treatment permits, and report honestly to regulatory authorities. Each plant has departments relevant units, including the facility department and EHS department, which are responsible for the storage, reporting, cleaning, and inspection of waste. Currently, waste is mainly entrusted to qualified disposal and recycling companies for legal disposal. We rigorously review the qualifications of these companies, conduct on-site inspections of their permits and facilities, and confirm the completion of operational processes. After waste removal, we conduct random inspections and audits of the waste handling process to ensure it is properly and legally managed. Before waste cleaning personnel commence work, we provide EHS training to ensure proper waste disposal and worker safety.

Additionally, each plant has an internal waste inspection and audit system, as well as an external audit system for waste contractors. We regularly review total waste output and propose improvement plans when anomalies are detected in waste handling to minimize environmental impact. As each plant produces different waste, LCY has adopted three main strategies: "source reduction," "process efficiency enhancement," and "recycling and reuse." Regular meetings are held to review and continuously improve equipment efficiency, aiming to reduce waste generation across the company.

In 2024, the total waste generated by the company was 24,302.2 tons, including 22,970.4 tons of general industrial waste and 1,331.8 tons of hazardous waste. A total of 306.42 metric tons of hazardous waste was treated by licensed recycling organizations, representing 23.01% of the total.



	2021	2022	2023	2024
Hazardous waste (ton)	3479.5	2961.2	1266.6	1331.8
Non-Hazardous waste (ton)	43655.1	39634.1	20633.8	22970.4
Waste per unit of production (ton/ton)	0.0302	0.0277	0.0217	0.0233

Note 1: In the Kaohsiung Plant, where waste can be processed internally, the data is calculated based on the declared figures with the completion date of waste processing. All other plants outsource waste management, and therefore, calculations are based on the declared data with the waste removal date.

Note 2: Both hazardous and non-hazardous waste figures include only industrial waste that is required by law to be reported.

04

Promoting Social Prosperity

We believe that "talent" and "safety" are crucial to the sustainable development and operation of society and businesses. Therefore, we strive to provide robust and competitive incomes and benefits, including annual leave policies that exceed the regulatory requirements of the Labor Standards Act, group insurance, employee trust funds, health checks, diverse club activities, etc. We are also staunchly opposed to any acts of discrimination, believing firmly in a workplace that fosters mutual respect and trust. We are happy to share the fruits of our shared labor with employees, providing a performance-based pay system that incentivizes employees and ensures that all employees can unleash their full potential to build a happy and friendly workplace.

100% 100% employee return rate and 96% retention rate after parental leave

100% Achieved 100% participation rate in employee health screenings in 2024 and; a 100% participation rate across all LCY operational sites in Taiwan in cancer screenings/government-subsidized four cancer screenings conducted by the Health Promotion Administration.

- Occupational Safety & Health
- Employment
- Employee Training, Human Rights, Diversity & Equal Opportunities

4.1 Human Rights Policies 86
4.2 Employee Demographics & Management 86
4.3 Employee Welfare 89
4.4 Talent Cultivation 92
4.5 Occupational Safety 94
4.6 Community Relations 101

Achievements

Category	Metrics	2024 Achievements
Employee Health & Safety	Implement employee health management	1. In 2024, 100% of employees in Taiwan and China underwent health checks and special health checks, with factory nurses and OSH personnel monitoring and tracking those found to be high-risk individuals. 2. All employees across all global operational sites are enrolled in the group health insurance provided by the company. Additionally, employees and their families can opt for additional coverage at discounted rates, ensuring comprehensive protection that extends to individuals, families, and overseas needs.
	Increase employee satisfaction	1. Compiled improvement items uncovered in the 2023 employee satisfaction survey across all BUs. [Note: AR Plant excluded] 2. Planned the 2024 employee satisfaction survey and launched the survey project in 2024. [Note: Conducted once every two years at LCY]
Employment	Enhance employee performance in the workplace	22% EAP participation in the Taiwan region since roll-out at LCY HQ
Employee Training, Human Rights, Diversity & Equal Opportunities	Strengthen the company's competitiveness	Building on efforts from 2023 in developing a talent pipeline, in 2024, LCY continued to optimize the talent review process, providing clearer guidelines and instructions to strengthen awareness and communication within the company. LCY also integrated and provided organizational resources to assist BUs with talent review roll out and completion.
	Strengthen equality	1. LCY adhered to principles of gender, race, and background neutrality in the design and implementation of internal compensation, benefits, promotion, and reward systems, ensuring no form of discriminatory treatment. All employees are regarded as key contributor driving the organization's sustainable development, and the company is committed to fostering a fair and equitable workplace. 2. In terms of talent development and career advancement, LCY actively supported growth opportunities for a diverse workforce, with a particular focus on career support and leadership development for female employees. Efforts were made to establish gender-equal and inclusive promotion and development pathways, fostering a truly inclusive workplace.
Community Relations Management	Strengthen communication with stakeholders	Through active participation in the Taiwan Chemical Industry Association (TCIA), industry associations, and seminars or consultation meetings related to net-zero initiatives, LCY worked to enhance public understanding of sustainability in the materials industry.
	Build a circular economy & innovative ecosystem	Leveraging LCY's resources and networks in international research and development, efforts were made to drive technological breakthroughs in the circular economy. LCY collaborated with Wah Lee Industrial Corp., Keyway, and Global Green Material to co-create a circular economy ecosystem, integrating perspectives from material supply, end-product manufacturing, and resource recycling.
	Caring for local communities	Understand the needs of local communities and promote LCY's sustainable ideals through open house events. In 2024, organized 23 open house events.

Goals & Targets

Category	Metrics	Long-term: 2030 Targets	Mid-term: 2027 Targets	Short-term: 2025 Targets
Employment	Increase employee satisfaction	Continuously track and improve items uncovered from employee satisfaction surveys.	Continuously track and improve items uncovered from employee satisfaction surveys.	Review 2024 survey results and evaluate survey agencies for the next survey.
Employee Training, Human Rights, Diversity & Equal Opportunities	Enhance employee performance in the workplace	Help employees overcome psychological or behavioral challenges and enhance employee performance in the workplace.	Help employees overcome psychological or behavioral challenges and enhance employee performance in the workplace.	Help employees overcome psychological or behavioral challenges and enhance employee performance in the workplace.
	Strengthen the company's competitiveness	Complete review of talent pipelines for 90% of middle and senior management positions in Taiwan and global LCY locations	Complete review of talent pipelines for 80% of middle and senior management positions in Taiwan; and 80% of senior management positions in global LCY locations	Complete review of talent pipelines for 70% of senior management positions
	Strengthen equality	LCY does not define or differentiate based on gender or race in our compensation and benefits policies and practices, including promotions, benefits, and bonus distributions. We regard all talents as critical to our sustainable growth and operations.	LCY does not define or differentiate based on gender or race in our compensation and benefits policies and practices, including promotions, benefits, and bonus distributions. We regard all talents as critical to our sustainable growth and operations.	LCY does not define or differentiate based on gender or race in our compensation and benefits policies and practices, including promotions, benefits, and bonus distributions. We regard all talents as critical to our sustainable growth and operations.

4 Promoting Social Prosperity

4.1 Human Rights Policies

LCY is dedicated to creating a happy workplace environment and complies with local labor laws for all LCY locations around the world. We recognize and support the spirit and fundamental principles of human rights protection set forth in international human rights conventions such as the Universal Declaration of Human Rights, the United Nations Global Compact, and the International Labour Organization Convention. We hope to ensure that all LCY employees are treated fairly and with dignity and seek to provide quality workplace environments to guarantee safety in the workplace and physical/emotional health. Our Human Rights Policies are applicable to all LCY locations as well as our suppliers and partners.

Management & Implementation of Human Rights Issues

Respecting Human Rights in the Workplace

- Provide equal employment opportunities and promote an inclusive and diverse workplace environment. Hiring, education and training, pay and benefits, retirement, layoffs, resignations, and firings at LCY will not discriminate against any race, class, language, religion, political affiliation, ancestry, gender, sexual orientation, age, or marital status.
- Uphold diversity in the workplace by ensuring equal treatment to those of different races, classes, languages, religions, political affiliations, ancestry, gender, sexual orientation, age, marital status, physical or mental disabilities, or blood type as well as prohibiting any human rights violations such as forced labor, child labor, or human trafficking.
- LCY policies clearly state that the company is prohibited from hiring any individuals below the age of 15. The company and plants are compliant with the policies and do not have any employees below the age of 16.
- LCY has signed a Diversity, Equity, and Inclusion (DEI) statement and fully supports international human rights standards, steadfastly adhering to the core principles of the United Nations and the International Labour Organization. We reaffirm our commitment to fostering a diverse talent environment and are dedicated to creating a safe, healthy, and supportive workplace. This commitment extends beyond principles and is embedded across our recruitment, training, development, and day-to-day management practices to ensure respect for human rights and to drive the organization's continuous growth. Through these actions, we not only cultivate a fair and inclusive workplace culture but also demonstrate proactive corporate responsibility—enabling every employee to work with confidence, realize their full potential, and grow together with the company.

Designing Impartial Salary & Welfare Policies

- Comply with regulations concerning pay and work hours and optimize salary structures based on principles of impartiality. Define the positions and value of each role within the organization while ensuring that difference in salary derives from their different functions and responsibilities.

Fostering A Safe, Healthy & Happy Workplace

- Foster a safe and healthy workplace environment, work together to reduce health and safety risks in the workplace, promote our employee's physical and mental health, and facilitate work-life balance.
- Publicly declare our staunch opposition to any forms of discrimination, harassment, bullying, or any acts of workplace violence in our LCY Employee Guidelines and Guidelines to Prevent and Handle Sexual Harassment.
- Spotlight protection of maternal health by providing benefits better than those required in the Labor Standards Act, such as paid maternity leave, paid parental leave, and dedicated parking spots for pregnant employees.

Respecting Freedom of Association

- Encourage employees to establish and participate in club activities, offer diverse, open communication channels, and regularly convene labor-management meetings/union representative assemblies to foster harmonious labor relations.

Training & Promotion on Human Rights Issues

At the beginning of 2022, LCY announced its Human Rights Policy to all employees across global locations and published the policy on its official website. In 2024, management-level employees began to undergo education and training on Prevention of Sexual Harassment and Workplace Misconduct. In 2025, related education and training will be rolled out to all employees within the group. Additionally, LCY maintains an employee mailbox (gm@lcygroup.com) for employees to express their views or provide suggestions. In 2024, there were no incidents of discrimination, violations of freedom of association or collective bargaining rights, child labor, or forced labor, nor were any related complaints received.

4.2 Employee Demographics & Management

Employees are the drivers for continuous corporate growth and the cornerstone of sustainable development. LCY treats all employees solely based on their functions, and our hiring policies honor equality and diversity. As of 2024, the company employed a total of 1,851 individuals, of which 98.7% were full-time employees and 1.3% were temporary employees. Due to the nature of our industry, we have more male employees than female, with male employees accounting for 81.4% and female employees accounting for 18.6%. LCY's workforce is distributed across Taiwan (67.2%), Mainland China (26.6%), and the United States and Canada (6.2%). In 2024, there were 126 new full-time hires and 172 full-time employee departures. Contract employees include temp workers, outsourced workers (security/cleaning services/factory drivers), interns, part-time workers, long-term contractors, etc.

Employee Demographic: By Region & Labor Contracts

Contract	Region	Others (Not Management)		Management	Total
		Direct Labor	Indirect Labor		
Permanent	Taiwan	626	423	174	1,223
	China	269	185	35	489
	US & Canada	31	60	24	115
Temporary Employees	Taiwan	0	20	1	21
	China	0	3	0	3
	US & Canada	0	0	0	0

Note
Note 1: Direct Labor includes technical engineers and duty supervisors.
Note 2: Indirect Labor includes other employees who are not direct labor or in management.
Note 3: Management includes all employees with division head, group leader, or higher titles.
Note 4: Temporary employees include fixed-term contract employees and consultants.
Note 5: Data as of December 31, 2024.

Contract	Region	Full-time Employees	Part-time Employees	Zero-hours Workers Employees	Total
Permanent	Taiwan	1,223	0	0	1,223
	China	489	0	0	489
	US & Canada	115	0	0	115
Temporary Employees	Taiwan	1	19	1	21
	China	3	0	0	3
	US & Canada	0	0	0	0

Note
Note 1: Full-time employees are those working the statutory work hours or more each week.
Note 2: Part-time Employees are those working less than the statutory work hours each week.
Note 3: Temporary employees include fixed-term contract employees and consultants.
Note 4: Data as of December 31, 2024.

By gender, age & labor contract

Region	2024		Age			Total
			<30	30~50	>50	(No. of People)
Taiwan	Permanent	Male	48	710	242	1,000
		Female	27	145	51	223
	Temporary Employees	Male	0	0	14	14
		Female	2	1	4	7
China	Permanent	Male	99	291	18	408
		Female	14	67	0	81
	Temporary Employees	Male	0	0	0	0
		Female	0	1	2	3
US & Canada	Permanent	Male	9	43	33	85
		Female	3	15	12	30
	Temporary Employees	Male	0	0	0	0
		Female	0	0	0	0
Total			202	1,273	376	1,851
Percentage			10.9%	68.8%	20.3%	100.0%

Composition of New Employees in 2024

Age	Region	Male		Female		Total
		No. of Employees	Percentage	No. of Employees	Percentage	(No. of Employees)
<30	Taiwan	17	35.4%	14	48.3%	31
	China	17	17.2%	3	21.4%	20
	US & Canada	2	22.2%	1	33.3%	3
30-50	Taiwan	39	5.5%	5	3.4%	44
	China	5	1.7%	0	0%	5
	US & Canada	6	14.0%	5	33.3%	11
>50	Taiwan	8	3.1%	3	5.5%	11
	China	0	0%	0	0%	0
	US & Canada	1	3.0%	0	0%	1
Total		93		33		126
New Employees (%)		5.0%		1.8%		6.8%

Note

1.New Employees (%) = Number of New Employees across BUs / Total Number of Employees across BUs at End of Year

Composition of Turnovers in 2024

Age	Region	Male		Female		Total
		No. of Employees	Percentage	No. of Employees	Percentage	(No. of Employees)
<30	Taiwan	17	35.5%	0	0%	17
	China	27	27.3%	1	7.1%	28
	US & Canada	0	0%	0	0%	0
30-50	Taiwan	109	15.4%	5	3.4%	114
	China	13	4.5%	4	5.9%	17
	US & Canada	6	14.0%	3	20.0%	9
>50	Taiwan	27	10.5%	4	2.7%	31
	China	4	28.6%	1	1.5%	5
	US & Canada	2	6.1%	1	8.3%	3
Total		205		19		224
Turnover Rate		11.2%		1%		12.2%

Note

Turnover Rate (%) = Number of Employee Turnovers across BUs / Total Number of Employees across BUs at End of Year

Employee turnover excludes those whose contracts expired, internal transfers within LCY, and employees on unpaid leave.

4.3 Employee Welfare

We believe that "talent" and "safety" are crucial to the sustainable development and operation of society and businesses. Therefore, we strive to provide robust and competitive incomes and benefits, including annual leave policies that exceed the regulatory requirements of the Labor Standards Act, group insurance, employee trust funds, health checks, diverse club activities, etc. We are also staunchly opposed to any acts of discrimination, believing firmly in a workplace that fosters mutual respect and trust. In addition, we are happy to share the fruits of our shared labor with employees, providing a performance-based pay system that incentivizes employees and ensures that all employees can unleash their full potential to build a happy and friendly workplace. In 2024, LCY Group invested NT$3,305,839,000 into payroll and welfare for LCY employees.

4.3.1 Pay & Welfare

Competitive Salary

We regularly review employee pay and how competitive their pays are, participating in peer income surveys both globally and locally to learn more about the status of different regions, leading companies, regulatory standards, and consumer price indices to quickly adjust pay policies in all LCY locations upon approval from senior executives. Our goal is to maintain competitive salaries while ensuring sustainable company operations.

Unit: NTD

Total Payroll	2024	2023	2022
Average	1,146,459	1,108,738	1,139,047
Median	1,036,221	980,485	1,004,435

Note: Table covers all full-time employees in Taiwan, excluding those at the director level and above. Only employees who were employed for the entire year are included in the statistics.

Remuneration Policy for Senior Management and the Highest Governance Body

To ensure a competitive remuneration system aligned with LCY's long-term performance and sustainability goals, the company has established a comprehensive remuneration framework for the highest governance body and senior management, which includes the following components:

Category	Applicability
Fixed Salary and Performance-based Bonus	Y
Signing Bonus and Referral Bonus	Y
Severance Pay	Y
Clawback Mechanism	Y
Retirement Benefits	Y

Note: This remuneration policy is regularly reviewed by the remuneration team to ensure alignment with industry benchmarks and incorporates corporate performance, sustainability governance outcomes, and risk management performance.

Ratio of Highest-Paid Individual to Median Employee Compensation

LCY values fairness and transparency in remuneration and discloses the ratio of the highest-paid individual to the median compensation of all employees as a reference indicator for evaluating the reasonableness of the overall pay structure. The figures are as follows:

Year	Percentage
2024	12.3
2023	12.6

In 2024, the percentage decreased by 2.38% (from 12.6 → 12.3) from 2023, indicating continued progress to a balanced and equitable internal compensation structure.

Note: Data on compensation includes fixed salary for the full year, performance-based bonuses, and other remuneration. The data has been disclosed and calculated in accordance with GRI 2-21.

Annual Compensation Change across Senior Management and Median Employee Compensation

2024	Rate of Increase
Highest Annual Compensation	3.33
Median Annual Compensation	5.68

In 2024, the highest annual compensation increase for senior management was 3.33%, which is approximately 58.6% of the 5.68% increase in median employee compensation. This indicates that the company has provided a more substantial salary adjustment for general employees, helping to narrow the pay gap between senior management and the broader workforce. This approach aligns with ESG disclosure expectations regarding pay equity and human capital development.

Incentives & Career Development Pathways

LCY has a comprehensive incentive system in place to reward and recognize our employees' efforts and performances. Our incentives, which include variable compensation, such as quarterly and annual bonuses, are based on company operations, developed by referring to our local industry's standards and norms, and differentiated rewards by performance. At LCY, incentives also serve to reinforce five core values - "Safety & Health," "Integrity," "Accountability," "Kaizen," and "Co-creation." We regularly convene HR evaluation meetings to encourage management to help plan and formulate career development paths and targets for employees based on their function, competency, seniority, etc.

Supporting Employees with Robust Financial Plans & Practices

To ensure our employees' lifelong financial security, LCY established the Employee Benefit and Savings Committee, where employees can opt in and contribute a portion of their monthly income into their personal trust account, which will be partially matched by LCY as well. This initiative encourages long-term savings and wealth accumulation, aiming to ensure a secure and stress-free retirement. In 2024, up to 90% of employees have opted into the program.

LCY Sustainable Investments from LCY into Employee Savings Trusts to Ensure Stress-free Retirement with Our Employees.

2024 Employee Engagement **~90%**

Since 2006

STAFF

Voluntary Employee Contributions

To ensure our employee's lifelong financial security, we provide employees with a savings trust that employees can opt in and contribute a portion of their monthly income into their personal trust account and adjust when necessary.

LCY

LCY Contributions

LCY will partially match employee contributions each month for employees participating in the benefits savings program to encourage long-term savings, investing, and financial management.

BANK

Management by Third-party Financial Institution

Contributions from employee incomes and LCY will be deposited into a trust account at a third-party financial institution each month to strengthen asset protection and ensure employee welfare.

4.3.2 Employee Health & Safety

Employee Welfare Committee & Diverse Activities and Subsidies

To care for our employees, the Employee Welfare Committee gifts holiday vouchers during the three major festivals (Lunar New Year, Dragon Boat Festival, and Mid-autumn Festival); birthday vouchers for employee birthdays; and subsidies for gatherings, childbirth, marriage, travel, language learning, retirement, injuries and diseases, bereavement, and children education. In addition, the Employee Welfare Committee sponsors club activities and provides welfare packages.

Flexible Work Hours & Better-than-Regulation Leave System

We are committed to upholding and protecting our employees' vacation rights. We care about our employees' physical and mental well-being, and offer paid leave that surpasses the requirements of the Labor Standards Act, including maternity leave, sick leave, flexible make-up leave, and family leave. Additionally, we institute partial flexible working hours to help employees avoid peak traffic times, reducing stress and the likelihood of accidents.

Taiwan

Maternity Leave	• According to the Labor Standards Act, female employees working in a company for less than 6 months are not eligible for paid maternity leave. At LCY, we want to do better; all female employees, even if they have worked for us for less than 6 months, are eligible for paid maternity leave. • In the event of miscarriage between the second and third month of pregnancy, the female worker shall be permitted to discontinue her work and shall be granted a one-week paid maternity leave. • In the event of miscarriage before the second month, the female worker shall be permitted to discontinue her work and shall be granted a five-day paid maternity leave to give our female colleagues time to rest.
Sick Leave	We provide 80 hours of paid sick leave each year to hospitalized colleagues who have received surgery as treatment so that they can have enough time to rest.
Flexible Makeup Days	Employees are exempt from working makeup days for paid typhoon days and flexible holidays, effectively giving employees additional holidays.
Family Leave	Employees are granted paid family leave if they have been on ≥30-day business trips abroad, ensuring they are given time with their families.

Encourage Childbirth and Child-rearing, Protecting Related Benefits, and Helping Employees Return to the Workplace

Among employees eligible for parental leave between 2023 and 2024, the return-to-work rate in 2024 reached 100%, while the retention rate after returning to work in 2023 was 96%.

	Total		
	Female	Male	Total
Employees eligible for parental leave in 2024 (a)	64	239	303
Employees on parental leave in 2024 (b)	27	63	90
Employees expected to return to work (in 2024) after parental leave (c)	25	63	88
Employees that returned to work in 2023 (d)	25	63	88
Return Rate (d/c)	**100%**	**100%**	**100%**
Employees that returned to work in the last reporting period (2023) (e)	10	36	46
Employees that returned to work from parental leave (in 2023) and have been in service for one full year (f)	10	34	44
Retention Rate (f/e)	**100%**	**94%**	**96%**

Note: For the US and Canada, we comply with US laws, providing paid maternity leave to female employees and 12-week family care leaves (to care for their family, newborns, and medical conditions) to all employees who have been employed at LCY for a full year. As the definition for parental leave in the US is different from that of Taiwan and China, US data is not included in this table.

Diverse Employee Assistance Programs

The health and well-being of our employees are among LCY's top priorities. In addition to continuously providing access to professional psychologists and vision-impaired massage therapists, we actively collaborate with external professional teams and commissioned an outside team of experts to offer telephone consultation services. The services gave employees access to professional counselors via phone or email for advice on health, life, and work-related concerns. All matters discussed in these consultations are protected and strictly confidential. In 2024, we provided three telephone consultations and 22 face-to-face counseling sessions to assist employees in resolving concerns regarding their mental and physical health. Additionally, we held three mental health seminars with a total of 342 participants. We remain committed to fostering a supportive and friendly work environment where every employee feels valued and cared for.

We care about our employees' health, working with designated medical centers to provide better-than-regulation health checks to employees based on their work and control banding to give employees insight into their physical conditions. Furthermore, we re-evaluate employee work based on previous accidents and medical histories to reduce diseases from occurring. In 2024, 100% of employees at LCY locations in Taiwan and China underwent health checks, with factory nurses and OSH personnel monitoring and tracking those tested as high-risk individuals. In addition, for employees wishing to receive out-of-pocket flu vaccines (GSK-Quadrivalent), we provide full funding and work with medical centers to send medical workers to the company to administer flu vaccines for employees. In 2024, a total of 404 employees across LCY's Taiwan sites received flu vaccines as we attempted to safeguard employee health through preventative medical care.

Comprehensive Group & Business Travel Insurance, Extending Coverage to Family and Overseas

LCY provides a wide range of insurance coverages for all employees, including term life insurance, critical illness insurance, accident insurance, occupational injury insurance, accident and health insurance, and hospitalization insurance. This coverage extends to hospitalization insurance for employees' spouses and children, with the addition of fully company-funded cancer insurance for employees. Additionally, we offer business travel insurance to enhance the protection for employees on business trips and international assignments. We also provide optional insurance plans for employees and their families at a discounted rate, extending the coverage beyond the individual to include family members and overseas protection, ensuring comprehensive coverage.

Incentives to Increase Commute Safety

Employees working at LCY plants in Taiwan and China have access to free shuttle buses to and from metro stations. We also subsidize employees who commute using public transportation (buses, trains, metros) and carpooling to reduce the risks of motorcycle-related accidents and to lower carbon emissions as part of our environmentally friendly commuting initiative.

4.4 Talent Cultivation

4.4.1 Talent Cultivation Policies

LCY is dedicated to pursuing outstanding talent and strengthening the organization's overall capabilities. We institute comprehensive human resource policies to provide diverse job opportunities, establish comprehensive pay and benefit systems, and uphold gender equality and non-discriminatory ideals during hiring processes. At LCY, we spotlight talent cultivation and care about employee career development. More importantly, we care about instilling core values of Safety & Health, Accountability, Co-creation, Kaizen (Continuous Improvement), and Integrity into the DNA of our employees through education and training. By empowering employees to become strategic partners in value creation, LCY fosters a culture of sustainable operations and long-term organizational growth.

Commitment	• Talent development will be founded on a "fair and rigorous internal and external recruitment process" to achieve corporate sustainability goals. • Value and enforce gender equality laws, ensuring equal employment and promotion opportunities. Emphasize employee career development by offering diverse educational and training programs.
Policy	• Adopt core values such as Safety & Health, Integrity, Accountability, Co-creation, and Kaizen as the criteria for talent selection, using a fair and rigorous internal and external recruitment process. • Provide comprehensive employee education and training. This helps familiarize new recruits with LCY's company culture, strengthens employees' sense of identity and cohesion with the company, and aids in professional development.
Communication Channels	• In compliance with labor laws, we regularly convene labor-management meetings to facilitate communication. All LCY Taiwan locations convene quarterly labor-management meetings. LCY locations in China convene quarterly worker or union meetings, where all employees are invited to participate. The goal is to facilitate collaboration, promote stronger labor relations, improve labor conditions, and negotiate employee benefits. • We've also set up a mailbox (gm@lcygroup.com) for employee suggestions or feedback.

4.4.2 Talent Cultivation Measures

To achieve the company's development goals and respond to the increasing human resource needs driven by rapid operational expansion, LCY has established a comprehensive education and training framework to meet our development goals. This framework includes proper orientation training, professional training, management training at all levels, environmental safety training, and courses on corporate philosophy. Training is delivered through both in-person sessions and e-learning platforms, providing employees with well-rounded development opportunities. This ensures that every employee can continuously enhance their professional capabilities, find opportunities to fully realize their potential, and collaborate with the company to establish medium- and long-term competency and career development plans. In 2024, LCY offered a total of 52,000 training hours, with an average of 28.6 hours of training per employee. Additionally, 100% of all permanent employees underwent performance reviews.

Annual Training (Hours) in 2024

Category	Others (Not Management)		Management	Total	Average Hours
	Direct Labor	Indirect Labor			
Female	4,055	4,485	1,722	10,262	30.7
Male	20,982	15,651	5,293	41,926	28.1
Total Hours	25,037	20,136	7,015	52,188	28.6
Average Hours per Employee	27.0	30.1	30.1	28.6	

Note:
1. Direct Labor includes technical engineers and duty supervisors.
2. Indirect Labor includes other employees who are not direct labor or in management.
3. Management includes all employees with division head, group leader, or higher titles.

Regular Performance Reviews

Permanent	Employees Receiving Regular Performance Reviews			
	Others (Not Management)		Management	Total
	Direct Labor	Indirect Labor		
Taiwan	626	423	174	1,223
China	250	203	36	489
US & Canada	31	60	24	115
Total	907	686	234	1,827
Percentage	50%	38%	13%	100%

Note
1. LCY only conducts performance reviews for permanent employees, not temporary employees.
2. Direct Labor includes technical engineers and duty supervisors.
3. Indirect Labor includes other employees who are not direct labor or in management.
4. Management includes all employees with division head, group leader, or higher titles.

Campus Engagement & Youth Programs

In addition to cultivating internal workforce, LCY also works with universities and colleges in Taiwan. We seek to encourage, inspire, and cultivate talents for the next generation through diverse approaches such as on-campus recruitment, open sessions introducing LCY, internships, and career coaching programs. We hope to introduce LCY to our younger generations to contribute and exert more influence on society. We also actively collaborate with universities, colleges, and academic research institutes on applied research projects, leveraging their R&D capabilities to cultivate potential R&D talents, increase the added value of products, and enhance product management.

- NCKU Career Coaching Program: Mid-level and senior management are brought on to serve as career coaches to NCKU students, guiding students to learn more about the industry landscape and helping them prepare for job search and employment. Coaches also share their own experiences to inspire students to think about interests, career plans, and future career development. In 2024, we organized one corporate visit and four lectures, which were attended by 37 NCKU students. Students shared that the series of sessions gave them further insight into LCY and thanked our instructors for sharing their rich, diverse experiences in workplaces and life, which were highly beneficial.
- NTHU Micro-credit Program: LCY has designed a micro-credit program for NTHU that features six courses and one capstone course. The program covers observations of small departments and, on a larger scale, the corporation as a whole, highlighting the transformation of a chemical manufacturer to a science-driven company. Courses are structured around three dimensions: R&D, technical, and practical experience, with instructors being experienced managers and researchers from various departments across the LCY Group (production engineering, R&D, sustainability, and IT). The program provides students with insights and discussions on various dimensions, including technical, management, and strategic. Throughout the program, students are given insights into how the chemicals industry creates a sustainable workplace, leads employees toward a sustainable company, and strengthen its competitiveness on the global stage, offering students greater perspectives on their future workplaces.

4.5 Occupational Safety

4.5.1 Safety is the foundation of our operations and a crucial cornerstone for sustainable development.

Within the chemical industry, where risks are highly concentrated, Occupational Safety Management, OSM and Process Safety Management (PSM) are the two vital pillars to maintain operational stability and protect employee well-being. We prioritize employee health and safety by establishing a safe, healthy, and comfortable working environment while continuously advancing our occupational safety system to strive towards "zero accidents."

LCY locations in Taiwan and China have adopted the ISO 45001 Occupational Health and Safety Management System to bolster management systems and align with international standards. Through systemized risk identification, prevention, and kaizen mechanisms, LCY seeks to develop a top-down culture for safety governance. LCY's Occupational Safety and Health Management System (OSHMS) currently covers 1,476 full-time employees across operating sites (excluding Taipei Office, CTPS Branch, and Kaohsiung Terminal Station) and 283 long-term contractors and subcontractors. As of 2024, the OSHMS covers 80% of full-time employees (excluding the 20% at Taipei Office, CTPS Branch, and Kaohsiung Terminal Station) and 100% of long-term contracted workers. The scope of management also extends to short-term contractors for temporary construction or equipment maintenance, as well as visitors, ensuring that all individuals operating within our facilities are covered under our health and safety governance. To maintain the system's effectiveness and compliance, internal audits are conducted annually based on ISO 45001, and third-party verifications are performed to ensure risk management, accident prevention, and kaizen. Additionally, the Baytown plant in the US has established management methods and SOPs in accordance with local regulations. Regular internal and external audits are conducted to ensure the effectiveness of occupational safety management, further enhancing operational safety and resilience.

The Sarnia plant in Canada has established a comprehensive occupational health and safety management system in full compliance with federal, provincial, and municipal laws to ensure safety governance and regulatory compliance. Centered on the Internal Responsibility System (IRS), the Sarnia plant's system clearly details the responsibilities of employers, supervisors, and employees, thereby reinforcing a safety culture where all employees are active participants. Daily management focuses on hazard identification, risk assessment, and implementation of control measures. The plan also established a joint health and safety committee to ensure employee engagement and two-way communication. Through institutionalized processes and ongoing improvement, the Sarnia plant effectively strengthened its prevention-oriented management approach, reducing occupational hazards and ensuring a safe and stable work environment.

At the operational level, all LCY locations have clearly defined SOPs. When on-site personnel identify potential risks or encounter anomalous operations, they can initiate an immediate reporting mechanism under exception handling or emergency response procedures. Depending on the severity of the risk, operations may be suspended to ensure personnel and equipment safety. Investigations and root cause analyses (RCA) are then carried out per SOPs to prevent recurrence. At LCY, our processes focus not on placing blame on individuals but on fostering a culture of honest reporting and kaizen.

Beyond ensuring the safety of the working environment inside our plants, we also emphasize the importance of traffic safety during employee commutes. Our plants have long advocated and encouraged employees to use company shuttles or public transportation. We have consistently organized safe driving courses and introduced defensive driving techniques to help employees predict and prevent potential risks on the road, thereby reducing potential accidents during commutes.

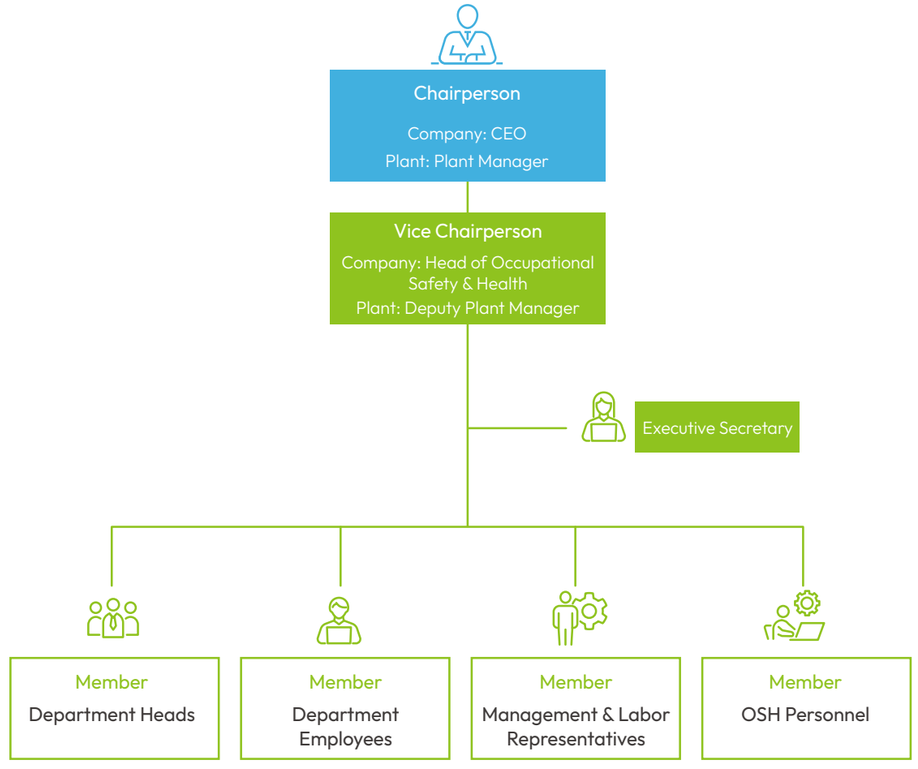
In addition to system management, we continue to strengthen occupational safety training, optimize inherently safer designs, and reinforce employee safety awareness and behavior through daily advocacy and on-site behavior audits. From 2023 to 2024, there were no major violations related to occupational health and safety (i.e., no fines exceeding NT$300,000) and no regulatory fines were issued, demonstrating our strong performance in safety management. Moving forward, we aim for "zero violations year after year," continuing to enhance risk prevention capabilities, safeguard employee lives, and ensure operational stability and public trust.

(1) Safety Governance Structure and Mechanisms for Senior Management Engagement

Each operational site in Taiwan has established an Occupational Safety and Health Committee (OSH Committee), which is jointly composed of representatives from both labor and management in accordance with regulations. The committees convene quarterly and serve as key platforms for employee engagement and driving safety improvements, strengthening the culture of workplace safety through collective discussion and consensus-building. LCY locations in China and the US have also established comprehensive safety committee systems. Management and employee representatives regularly meet to discuss topics such as health and safety policy development, procedure design, training program reviews, work environment assessments, and employee proposals. These meetings also monitor and respond to changes in local regulations to ensure continued compliance with legal and international standards.

To ensure senior management engagement in occupational health and safety governance, LCY has established a cross-level integration mechanism. Each plant manager, EHS department, the ERM & Sustainability Department, the heads of each business unit, the CEO, and the Chairman all participate in monthly senior management EHS meetings and quarterly OSH Committee review meetings to perform a unified review and strategic alignment of key safety issues across sites. Through both vertical and horizontal collaboration, LCY is able to strengthen risk identification and preventive strategies, ensuring that major occupational safety risks are promptly addressed and properly managed. This governance model extends can extend beyond safety concerns for daily operations to cover other dimensions such as employee health management, occupational disease prevention, and health promotion. This further demonstrates LCY's emphasis and efforts in safeguarding employee safety and well-being in the workplace.

Occuaptional Safety and Health Organization Chart

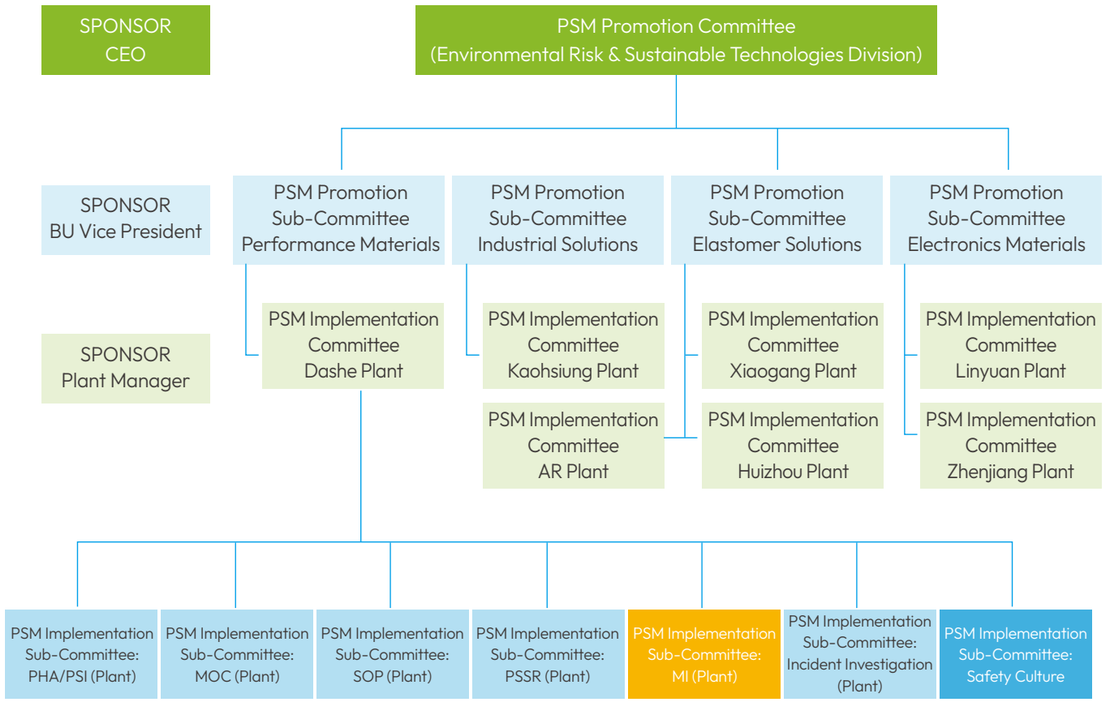


(2) Process Safety Management System (PSM) and Implementation Mechanism

To continue strengthening the depth and breadth of Process Safety Management (PSM) at LCY, we are building on Line Management systems across individual units. The ERM & Sustainability Department is tasked with coordinating and establishing a PSM Promotion Committee, while BU plants are required to establish an execution committee to align with their operational needs. Additionally, we've adopted Felt Leadership and cross-functional matrix staffing to introduce a group-based PSM system, promoting the routine operation of subcommittees that align closely with on-site practices.

All LCY plants have established execution subcommittees for each of the seven core elements of PSM, which includes Process Hazard Analysis (PHA), Process Safety Information (PSI), Management of Change (MOC), Standard Operating Procedure (SOP), Pre-Startup Safety Review (PSSR), Mechanical Integrity (MI), and Incident Investigation (II). Each element is driven by dedicated task forces to ensure the effective integration of PSM into daily plant operations and alignment with existing workflows and management systems. The performance and outcomes of each subcommittee are reported and reviewed quarterly at the PSM Promotion Committee meetings, empowering continuous improvement of operational discipline, enhancing company-wide participation, and building a comprehensive risk prevention network.

Organization Chart for PSM Promotion



Management System and Implementation Mechanism for Significant Near Misses and Process Safety Events

For near misses with potential risks, especially those we can learn from, plants are required to initiate formal investigations and complete detailed reports. Each month, LCY selects representative events from all locations to be presented at senior management meetings. During this time, we also require all affected plants to implement corrective and preventive measures, ensuring knowledge transfer and corrective action. This system enhances cross-site experience sharing, strengthens risk awareness, and promotes organizational learning and a stronger safety culture.

LCY also adopts the classification standards for Process Safety Events (PSE) established by the International Council of Chemical Associations (ICCA). All incidents classified as Tier 2 or above are formally included in the company's overall safety performance indicators and are used to evaluate the effectiveness of process risk control. When investigating and handling all events, LCY focuses not only on indirect causes such as unsafe behavior and on-site conditions but also on basic causes such as system deficiencies and procedural failings. Additional analysis considers key factors that could lead to escalated losses, such as insufficient protection layers, poor design, or equipment failure. Improvement and optimization measures are then implemented accordingly.

In 2024, LCY reported one process safety event involving a chemical leak. Fortunately, the event did not result in any injuries. The incident was investigated in accordance with company procedures, including a basic cause analysis, and all related corrective and preventive actions have been fully implemented. Additional on-site protective measures were also reinforced to minimize the risk of recurrence. LCY remains committed to strengthening system resilience and continuously improving process safety performance through an institutionalized incident feedback mechanism.

Process Safety Metrics	
Tier 1 Process Safety Incident Count (PSIC)	0
Tier 1 Process Safety Total Incident Rate (PSTIR)	0
Tier 2 Process Safety Incident Count (PSIC)	1
Tier 2 Process Safety Total Incident Rate (PSTIR)	0.069
Process Safety Incident Severity Rate (PSISR)	0.035

Note

1. Process Safety Management primarily targets production locations and excludes other non-factory locations such as our Taipei Office, R&D Center, and Kaohsiung Terminal Station.
2. Process Safety Events are Tier 1 events as defined in ANSI/ API RP 754.
3. Process Safety Incidents Count (PSIC) tallies events that meet the four following conditions: (1) process-related; (2) chemical leaks exceeding the minimum requirement for reporting and that result in fatalities or injuries in employees, contractors, or hospitalization of third parties (non-employees or contractors); formal announcements of community evacuation or shelter-in-place; fire disasters or explosions that result in direct losses of US$25,000 for the company; any of the above scenarios shall be immediately reported; (3) site of the incident is a production, logistic, storage, public, or testing facility; (4) any serious leakages that result in leakages exceeding the threshold limit value (TLV) within 1 hour.
4. Process Safety Total Incident Rate (PSTIR) = Total Process Safety Incident Count (PSIC) x [200,000 working hours] / Number of hours worked. In 2024, total employee working hours reached 2,887,441 hours. Work hours from the Taipei Office, R&D Center, and Kaohsiung Terminal Station account for a small percentage of total work hours and are therefore not excluded from the data above.
5. Process Safety Incident Severity Rate (PSISR) = (Total Severity Score of Process Safety Incidents x 200,000) / Total Hours Worked by Employees. In 2024, the total employee working hours were 2,887,441 hours, and the total severity score of incidents was 0.5. Work hours from the Taipei Office, R&D Center, and Kaohsiung Terminal Station account for a small percentage of total work hours and are therefore not excluded from the data above.

Incident Reporting and Investigation Mechanism

In accordance with the Incident Investigation & Reporting Guideline, LCY has established clear protocols for responding to occupational hazards or potential danger. When such situations are identified, on-site personnel or department supervisors may suspend operations as necessary to ensure the safety of personnel and equipment. Subsequently, the incident must be promptly logged into the system by completing an "Inspection & Corrective Action Report," which initiates the process for formal incident reporting and subsequent follow-up.

Each incident is reviewed and investigated according to standard operating procedures, using Root Cause Analysis (RCA) to identify underlying deficiencies and systemic issues. Based on the findings, concrete corrective actions are proposed to prevent recurrence, enhance organizational risk identification and response capabilities, and reinforce occupational safety management.

Incident Investigation Process

Occupational Health and Safety Hazard Identification and Risk Assessment Process

To effectively identify and manage potential occupational hazards in production operations, each plant conducts regular hazard identification and risk assessments based on the nature of their processes and actual working environments. The assessments cover potential physical hazards (e.g., noise, vibration, heat, radiation) and chemical hazards (e.g., hazardous substances, gas leaks, corrosive materials) that may arise during daily operations, along with the potential risks of occupational diseases they could cause.

Through a systematic identification process, all potential risks that may impact employee health, safety, the environment, or LCY assets are promptly detected and appropriately managed. Based on the assessment results, each unit implements tiered management and corresponding preventive and control measures to reduce risks to acceptable levels. Related measures include improvements to processes, adjustments to operations, provision of personal protective equipment (PPE), and training. This process is a core mechanism within the company's occupational safety system and serves as a critical foundation for enhancing overall health and safety performance, implementing risk prevention, and creating a safe working environment.

Occupational Health and Safety Risk Management Process

(3) Occupational Health and Safety Training Statistics

To enhance workplace safety awareness and operational competencies among employees and contractors, LCY offers structured occupational health and safety (OHS) training programs tailored to various job types and risk levels. Training covers a wide range of topics including general safety education, hazard identification, special equipment operation, and chemical management, ensuring that all personnel are equipped with the necessary skills for risk identification and emergency response.

In 2024, employees completed a total of 38,775 hours of OHS training, while contractors completed 10,764 hours. Training courses are regularly updated based on regulatory requirements and operational needs, supplemented by hands-on drills and regular assessments to ensure that learning outcomes are effectively applied in day-to-day operations for better risk control. LCY will continues to perfect our training system to cover more workers and topics. We will seek to strive for full participation and collaborative contractor management to continuing building a highly sensitive safety culture that is upheld at all levels.

Annual Occupational Health and Safety Training Hours	Training Hours in 2022 (Hr)	Training Hours in 2023 (Hr)	Training Hours in 2024 (Hr)
Employees	50,176	44,923	38,775
Contractors	6,752	7,174	10,764

(4) Emergency Response Drills

To strengthen emergency response and ensure prompt and effective action during emergency events for personnel protection and minimizing incident losses, each plant regularly conducts emergency response drills on various scenarios. These include fire emergencies, chemical spill containment, personnel evacuation, and first aid care. In 2024, a total of 23 emergency response drills were conducted across all plants. After each drill, a review meeting was held to identify areas for improvement in reporting and emergency procedures, with relevant reports submitted to regulatory authorities.

(5) Work-related Injuries and Corrective Measures

In 2024, six work-related injuries were reported across global locations: four involving employees and two involving contract employees (including temp workers, security staff, and outsourced contractors). Analysis revealed that the primary causes were typical physical hazards such as slips, trips, collisions with equipment, and mechanical malfunctions leading to cuts or bruises.

Compared to 2023 (11 work-related injuries), the number of cases in 2024 showed a significant decline, reflecting improved effectiveness in risk control measures. Based on standardized indicators, the employee injury rate in 2024 was 0.23, nearly a 50% reduction from 0.439 in 2023. The contract employee injury rate also declined from 0.628 to 0.372. There were no cases of fatalities or work-related ill health reported in 2024, demonstrating the positive impact of LCY's ongoing efforts in risk identification, prevention mechanisms, and training.

All work-related injuries were reported, investigated, and managed in accordance with LCY's Incident Investigation & Reporting Guideline, and then considered into risk mitigation strategies and future training. For any affected operating units, LCY immediately strengthens on-site protection measures, roll out structural improvements, optimize processes, and re-train personnel. During the same time, LCY will simultaneously strengthen safety awareness and share the incident to ensure employees and contractors are more observant and capable against potential risks. By leveraging risk hotspot analysis, Behavior-Based Safety (BBS) observations, and a dual-track approach combining institutionalized prevention and hands-on education, LCY is steadily advancing toward its goal of zero incidents and zero occupational injuries.

Severity of Work-related Injuries		2022		2023		2024	
		Employees	Contract Employees	Employees	Contract Employees	Employees	Contract Employees
Work-related Injuries	No. of People	6	2	8	3	4	2
	Percentage	0.3	0.37	0.439	0.628	0.23	0.372
Sever Work-related Injuries	No. of People	0	0	0	0	0	0
	Percentage	0	0	0	0	0	0
Work-related Ill Health	No. of People	0	0	0	0	0	0
	Percentage	0	0	0	0	0	0
Fatalities	No. of People	0	1	0	0	0	0
	Percentage	0	0.18	0	0	0	0
Total No. of Hours Worked (Hours)		4,048,175	1,090,674	3,640,560	955,216	3,477,616	1,074,929

Note
1. Data mainly derived from monthly reports of work-related injuries
2. Rate of fatalities as a result of work-related injury = Number of fatalities as a result of work-related injury × [200,000 working hours] / Number of hours worked
3. Rate of recordable work-related injuries = Number of recordable work-related injuries × [200,000 working hours] / Number of hours worked
4. Rate of work-related ill health = Number of work-related ill health × [200,000 working hours] / Number of hours worked; [Work-related ill health are those that arise from exposure to hazards at work and requires a medical diagnosis] For the definition of contract employees, please see Section 4.2.

(6) Contractor Safety Management

To ensure all contractors meet LCY's safety standards during operations, we've established a comprehensive management system focused on risk prevention, accountability, and transparent documentation. At LCY, we uphold the same high safety standards for both internal employees and external contractors.

At the first stage of contract screening, we conduct stringent qualification reviews to assess their safety records, past performances, and regulatory compliance. All contracts with contractors include clearly defined safety clauses that cover operating procedures, required training, reporting mechanisms, and emergency response protocols to ensure mutual understanding and commitment to safety management.

Before operations begin, the responsible unit of the operations will convene a Joint Work Coordination Meeting with on-site supervisors from contractors and subcontractors, labor health and safety management personnel, jurisdiction units, and EHS departments. These meetings cover workplace hazards, special protective measures, and key safety requirements, with contractors required to relay all information to their personnel.

LCY enforces strict access protocols for contractors. All contractor personnel must complete occupational safety training and pass assessments before being allowed on-site. Pre-entry blood pressure checks are mandatory to monitor physical condition, and random alcohol testing may be conducted to ensure personnel are fit and healthy for operational requirements. Daily toolbox meetings are held before work to communicate potential hazards. The EHS units will perform risk assessments, particularly for high-risk tasks, which must strictly follow regulatory and internal procedures to ensure operational safety. LCY also has an oversight and assessment mechanism in place, where dedicated EHS personnel perform routine inspections to ensure immediate corrective action against unsafe equipment, improper work behavior, and potential risks. They also provide necessary advice technical support, assisting contractors with improving safety management standards. Any violations are subject to penalties in accordance with company policies, reinforcing accountability for safety management.

To further enhance on-site safety awareness and enforcement, LCY has strengthened the work permit system and increased the frequency of daily inspections. All units are required to proactively identify risks and respond promptly. In 2024, 184 deficiencies were identified through contractor audits. While there was one incident requiring medical treatment, there were no severe injuries or fatalities throughout the year. The contractor injury rate in 2024 was 0.372, a 40% decrease compared to 0.628 in 2023, reflecting continuous improvement and the effectiveness of contractor safety management.

Through robust system design, audits, and disclosure of performances, LCY has been able to strengthen contractor safety management as well as the overall safety culture in the workplace. In doing so, we have demonstrated our accountability to external stakeholders and laid strong foundations for further improvement and the goal of "zero accidents."

(7) Transportation Safety Management and Audit Mechanism

LCY values safety risks and controls throughout the transportation process and has, therefore, developed a robust internal/external management system to ensure the safety and compliance of raw material and product transportation. Externally, the transportation and procurement unit manages, reviews, and regularly audits transportation contractors to ensure they are in compliance with related regulations and LCY's transportation safety standards. Internally, each plant's safety and facility management teams are responsible for daily and routine inspections, including safety patrols of loading docks, oversight of transportation processes, and emergency drills.

In 2024, there were no major transportation incidents, indicating that our overall transportation risk and management measures are effective in preventing risks to personnel, the environment, and property throughout transportation processes. For more information on transportation contractor management systems and assessment standards, please refer to Section 1.4.2 on Supply Chain Management Procedures in this report.

4.5.2 Promoting Occupational Health

At LCY, employee health management is mainly performed through comprehensive health checks, on-site safety measures, and strict chemical management systems. In 2024, 100% of employees underwent health checks and special health checks. We continued to offer flexible working hours adopted during the pandemic to non-plant employees at the Taipei Office and Nanzih R&D Center, enabling them to avoid traffic during peak hours, which helps reduce psychological stress and accidents from tardiness. During flu season, LCY subsidizes out-of-pocket flu vaccines in full or organizes on-site vaccination services, reducing the risk of illness and severe complications while safeguarding employee health.

For contractor partners, entry into the plants requires adherence to internal regulations, including hazard awareness training. This training fully informs contractors of identified risks within the plant, particularly the health hazards associated with the chemicals used and the corresponding emergency protective measures. These steps aim to eliminate potential hazards and reduce risks to the lowest possible level.

1 Health Checks & Health Education

- Provide regular and comprehensive health and cancer screenings for employees at all levels based on their work environment.
- Provide health screening and control banding for special tasks to ensure that employees do not come into contact with harmful and hazardous substances that could subsequently affect their health.
- Screen all plant employees for musculoskeletal symptoms and reevaluate existing work arrangements based on past incidence rates and employee medical history to reduce incidence rates.
- We have introduced psychological counselors to address employees' mental well-being through preventative measures and comprehensive health check-up systems.
- As part of the Health Promotion Administration's efforts to promote cancer screening, we include colorectal and oral cancer screenings in the annual health check-ups for our employees.
- Occasional health seminars to raise health awarness and help build healthy lifestyles and habits.

2 Safety & Protection Measures in Plants

- Plants are equipped with toxic chemical substance detectors and we are preparing to connect machines with the PI system's toxic chemical substance detectors to monitor stored toxic substances and potential leaks to prevent harm to human health and safety.
- Develop AI photo recognition technology to give alerts such as real-time feedback in the case of fires, electronic fences, and PPE integrity.
- Use automated machinery to reduce handling operations and therefore reduce potential incidents.
- Plants also conduct spontaneous audits to ensure operational safety for employees.

3 Strict Chemical Control System

Each plant has established chemical management procedures aimed at reducing employees' exposure to chemical hazards through three main approaches:

- Investigate toxicity and regulatory restrictions before purchasing chemicals; Compile and regularly review data to ensure the quality of chemicals.
- Perform chemical incompatibility analyses to ensure the safety of plant production.
- Provide training programs for handling chemicals to improve employee understanding and safe handling of substances used in LCY plants.

The physical and mental well-being of employees is LCY's most valuable asset. In addition to routine and specialized health checks, we also arrange for on-site services by contracted nurses to provide ongoing care and health education for employees identified as having potential health risks, aiming to reduce the likelihood of occupational illnesses and injuries. In 2024, health promotion seminars were held across various plant sites, covering topics such as physical and mental wellness, interpersonal communication, healthy cooking, and fatigue prevention and management. These seminars were complemented by employee-led walking and weight-loss competitions, which not only provided relevant knowledge but also used tangible incentives to encourage the development of healthy lifestyle habits.

In addition to routine safety awareness events and workplace health seminars, each plant actively participates in government-organized occupational safety and health promotion activities, earning certifications and honors.

LCY's Kaohsiung Plant, Linyuan Plant, and LCYtech actively participated in the 2024 National OSH Week, organized by the MOHW Occupational Safety and Health Administration (OSHA)

LCY's Xiaogang Plant and LCYtech participated in the Healthy Workplaces in Kaohsiung: The Healthy Workplace Incentive Program organized by the Kaohsiung City Government. The Xiaogang Plant received both the Group Award for health and the Health Promoter Award.

4.6 Community Relations

4.6.1 Community Relations Management Policies

LCY has established a robust framework for community relations, focusing on three pillars: Community Engagement, Process Safety, and Environmental Protection. As we grow our business, we also care about community development. LCY has demonstrated its value in social responsibility and taken concrete actions to support community care, strengthen stakeholder communication, and build a circular economy system that will allow us to thrive with our communities.

At LCY, we care about the environments and safety around our plants. Using risk assessments, we identify the impacts of daily plant operations on surrounding communities. Response measures are then formulated to address dimensions such as process/production safety, air pollution, employment, and traffic safety. These include initiatives such as community care programs, participation in or organization of joint emergency response drills, and hosting Open House events. Plants also maintain direct communication channels with local village chiefs to facilitate proactive dialogue and provide timely assistance. Facility personnel conduct regular community visits to listen to residents' concerns, gather feedback, and relay this information internally to support continuous improvement efforts.

4.6.2 Community Initiatives

LCY actively engages in community care to safeguard community safety, maintain good relations, and protect community environments. Open communication channels can facilitate understanding across plants and community residents, which helps maintain good relations with surrounding communities. Plants also host Open House events from time to time. These include forums and plant tours designed to increase transparency. By engaging with employee families, local residents, schools, and government agencies, the plants help stakeholders gain a deeper understanding of plant operations and environments, fostering mutual trust.

Community Initiatives

1 Community Safety

- Conduct daily routine inspections and schedule annual maintenance checks for pipelines.
- Perform flow simulations for underground pipeline leaks and assess risks along tank car routes.
- Establish internal and external crisis response plans, ensuring prompt reporting and adherence to procedures during emergencies.
- Regularly conduct occupational safety and fire drills to ensure plant safety and that personnel are familiar with emergency rescue and evacuation procedures.
- Actively participate in the Manufactures United General Association Of Industrial Park Of R.O.C., coordinating joint emergency response drills with nearby plants.

2 Community Relations

- Maintain close relationships with local police and fire departments.
- Continuously engage with local residents and support community activities through sponsorship
- Host open houses at various plants to increase transparency.
- Provide assistance and emergency aid to underprivileged residents in local communities.
- Employ outstanding talents locally to increase job opportunities. For more information, please see section 4.2 Talent Recruitment and Management.

3 Environmental Protection

- Actively participate in initiatives by the Kaohsiung City Government, including adopting and maintaining air quality purification zones and related equipment in local schools.
- Increase the use of renewable energy, establish relevant infrastructure, and obtain Taiwan Renewable Energy Certificates (T-REC).
- Automatic information management platform systems to ensure chemical safety and environmental management.
- Introduce the ISO 50001 energy management system with a digital energy monitoring system for energy use insights.
- Adopt the ISO 14064-1 GHG Inventory and conduct regular annual GHG inventory.

Community Care

The Linyuan Plant receives a certificate of appreciation for its charitable efforts in villages across Linyuan

We value our relationship with the surrounding community, and we strive to improve the quality of life through our quality products while also exerting our influence to better the local environment and strengthen relations with local communities. LCY seeks to become a good friend and neighbor to our surrounding communities.


高雄市林園區里長里政促進會
感謝
李長榮化學工業(股)公司
長期本於敦親睦鄰精神，協助林園區各里各項公益活動、地方公共建設，增進地方鄉親福祉。
特頒此狀，以資謝忱。
理事長洪進財
中華民國 113 年 10 月 25 日


高雄市林園區公所
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特頒此狀，以資謝忱。
區長簡水彬
中華民國 113 年 10 月 25 日

May 2024: The Environmental Protection Bureau of the Kaohsiung City Government recognizes Linyuan Plant as an Outstanding Clean Zone Adopter

June 2024: The Huizhou Plant participates in a community outreach event organized by the Daya Bay District Women's Federation

December 2024: The Huizhou Plant donates books and sports equipment to a local elementary school

Open House Events

In 2024, LCY's plants hosted a total of 13 Open House events, welcoming visitors from schools, research institutes, industry partners, and government agencies. In addition to lab tours, LCY also shared experiences and advancements in R&D innovation, including technologies related to circular economy, net-zero decarbonization, and water treatment. During the tours, we also shared our ESG project experiences such as the application of AI in plant operations and environmental management. For visits from school groups, LCY shares technical experiences but also industry and career advice to visiting students, fulfilling the company's corporate social responsibility in both environmental and educational dimensions.

Jun-chi Chen, head of the operations management team, gave a tour of Nanzih Plant to a group of 34 students from ITRI College's Green Collar Decarbonization Professionals Program. During the tour, he shared insights into LCY's circular economy, green products, and decarbonization efforts. He also explained the necessary competencies and traits for ESG professionals and offered a tour of the R&D building.

February 1: Guang-shun Liu, head of our chemical team at the Nanzih R&D Center gave a tour to NTUT Professor Hsiu-Hui Chen, THU Professor Ching-Tat To, and students during their visit. Liu introduced them to LCY, shared his career experience, and gave them a tour of the lab.

March 12: NTHU Department of Chemical Engineering Professor Lin Yu-Jeng and students were given a tour of the Nanzih R&D Center and our Dashe Plant by four science heads and the work safety department.

April 9: NCKU Chemical Engineering Department Professor Jeng-Shiung Jan and students were given a tour of the Nanzih R&D Center by Manager Cheng-Feng Huang and Director Ping-Syun Yang.

April 11: Member of the Provincial/Municipal Committee of the CPC and the Director of the United Front Department visited LCY's AR Plant to learn about our production management, technology development, talent attraction, and investment plans. They also provided constructive advice.

May 22: NCKU Engineering Science Department Professor Chao-Wei Huang and students were given a tour and introduction of the Nanzih R&D Center by Senior Manager Jian-Kai Cheng, Manager Jun-Ru Huang, Director Chiong-Yao Huang, and employees from the work safety department.

June 3: Professor and Associate Dean Wei-Hsiang Chen of the NSYSU Institute of Environmental Engineering and students from the institute visited Nanzih R&D Center and were provided a tour of the facility by Industrial Solutions, our occupational safety team, and Sustainability Development Department. During the tour, they shared LCY's success in circular economy and decarbonization and also gave a tour of our lab.

July 22: Linyuan Plant and USI Group share experience on sludge treatment, wastewater treatment, and environmental protection testing and analysis

August 9: Dean and Chief Executive Officer Ming-Chung Chen of the Civil Service Development Institute, Directorate-General of Personnel Administration, Executive Yuan visited LCY's Nanzih R&D Center with students from the institute's research program. The visit featured presentations by Manager Cheng-Feng Huang, Section Chief Chang-Jung Wu, and the Sustainability Development Department, who shared insights on LCY's success in circular economy, decarbonization, and AI applications. The visit also included a tour of the lab, accompanied by team members from Industrial Solutions and the analytical science team.

August 16: NCHU Professor Vincentius Surya Kurnia Adi and students from NCHU and the Bandung Institute of Technology (Indonesia) was given a tour of the Nanzih R&D Center by our project management team and four science heads.

September 3: As part of the Outstanding Water Conservation Manufacturers Site Visit organized by the MOEA Industrial Development Administration, Vice President Fan-Ming Chao, Manager Cheng-Feng Huang, and Section Chief Chang-Jung Wu shared how LCY's MBR system leverages AI-driven smart control. The visit was supported by team members from the IT Division and Industrial Solutions, who gave tours of LCY plants.

October 29: The Linyuan Plant shares success in using AI technologies to promote process safety in plants to Deputy Section Chief Tsai from the Industrial Development Administration, ITRI, the Southern Taiwan Industry Promotion Center, Droxo Tech, and Sengate

November 24: The Executive Yuan's National Policy Research Program visited the Nanzih R&D Center. During the visit, Vice President Joey Lin and members from the Sustainability Development Department, public relations team, Research and Development, Industrial Solutions, and the IT Division shared ESG experiences, R&D management mechanisms, AI applications in plant management, and water treatment technologies

4.6.3 LCY Announces New Mid-term Strategy: Science-Driven Company & Seeks to Collaborate with Partners to Catalyze Innovation

In 2024, LCY hosted a media gathering titled Reimagining Science and Catalyzing Innovation and declared our commitment to becoming a Science-Driven Company. Moving forward, LCY will focus on three strategic directions: Performance Polymers and Materials, Semiconductor & Interconnect, and Sustainable Technology to deliver customized solutions to customers and lead the future with innovation. Anchored by the circular economy, LCY aims to build a comprehensive ecosystem from raw material supply to resource recycling, collaborating with partners to strive for a net-zero future by 2050. For the media gathering, LCY also invited Chairman Gary Chang of Wah Lee Industrial Corp, Chairman Mu-Chuan Hsu of Keyway, and Chairman Guo-Jen Chen of Global Green Material to provide insights from the supply, product, and resource recycling ends. We hope to work together to create a circular economy ecosystem and strive together towards a net-zero future by 2050.

LCY Transforms into a Science-Drive Company to Meet Changing Markets

In response to evolving industry and market landscapes, LCY is progressing from a traditional chemical manufacturer to a Science-Driven Company. Anchored by the circular economy, LCY aims to deliver in-demand products, create value, and provide customized solutions for customers. LCY has also unveiled a new brand identity, featuring a modern geometric design that combines square shapes with soft curves, reflecting the order and sophistication of modern science. The use of a lowercase “y” adds fluidity and energy, symbolizing LCY’s commitment to continuous improvement and the pursuit of excellence. LCY CEO Vincent Liu shared that, "this transformation is critical. It will allow us to address and contribute to global sustainability trends but, more importantly, transform us into a Science-Driven Company. This will allow us to further explore new scientific applications, uncover more business opportunities, and achieve our goal of maintaining a product mix of at least 20% sustainable products by 2030."

Liu Yi-Kun, Secretary-General of MOENV's Resource Circulation Administration, expressed that, "the circular economy is critical to addressing climate change, achieving net zero emissions, and promoting sustainability. The Resource Circulation Administration is committed to several policies, including source reduction, green design, resource renewal and reuse, and increasing recycling capacities and management. We also seek to elevate the resource circulation network and apply innovative technologies to accelerate the advent of the circular economy. I'm very excited to be here today and to witness LCY's efforts in building a circular economy and ambitions in innovative transformations. We hope that, with joint efforts from the government and industries, we can all contribute to a sustainable future for Taiwan."

LCY Earns International Recognition for Advancing a Sustainable Future and Accelerating Toward Carbon Neutrality

In support of global and national sustainability goals, LCY has actively advanced decarbonization initiatives over the past three years, establishing clear management strategies and achieving significant progress. For Scope 1 and Scope 2 emissions, LCY has set an industry-leading reduction target of 37% by 2030, using 2019 as the base year. During the same time, we also aim to increase our percentage of green power procurement to 15% by 2030. To reach these targets, LCY has focused on two efforts: enhancing energy efficiency and implementing process improvements. To improve energy efficiency, we employ variable frequency drives, high-efficiency motors, and waste heat recovery systems. For process improvements, we expand the use of mechanical vapor recompression (MVR) and reduce steam consumption to lower our operational carbon footprint. To tackle Scope 2 and 3 emissions, we are starting from supplier engagement, working with partners to manage emission factors and encouraging the use of low-carbon energy and raw materials. These three core strategies are guiding LCY’s progress toward the ultimate goal of carbon neutrality across the globe by 2050.

To address global water scarcity, Taiwan imposed a water fee on large water consumers, forcing companies to attach greater value to water management. In response, LCY proposed a circular economy solution, leveraging membrane bioreactors (MBRs) to significantly increase water reuse rates.

Joey Lin, VP of Operation Management and Chairperson of our Green Transformation Team, shared that "This year, LCY joined the ISCC PLUS (International Sustainability and Carbon Certification) program and will begin receiving certifications for polypropylene (PP), thermoplastic elastomers (TPE), and EIPA starting in the third quarter of this year. These certifications mark a critical step toward ensuring supply chain sustainability and achieving our carbon neutrality goals. In addition, LCY was awarded an A- rating and named a Supplier Engagement Leader in the CDP 2023 Supply Engagement Rating, a testimony to our outstanding performance in supplier climate action."

1. MOENV GHG Inventory Guidelines

LCY's EIPA Gains Customer Recognition and Contributes to a Net-Zero Future for Semiconductors

LCY is committed to supporting the global semiconductor industry's “zero waste” sustainability goals. For example, through our EIPA Dual Circular Economy, LCY is addressing the low recycling rate of used isopropyl alcohol (UIPA) in Taiwan, currently only 23% annually. Full-scale recovery could reduce carbon emissions by 15,000 $kTCO_2e$ per year, equivalent to the carbon absorption of 40 Daan Forest Parks. This year, LCY launched an IPA recycling project, which successfully passed sample testing by a leading global chip manufacturer. We now supply re-purified EIPA for advanced processes and packaging. Compared to original approaches of incineration, our re-purification process is expected to reduce carbon emissions by 20% for semiconductor customers. Additionally, LCY’s new Central Taiwan Science Park facility, with a total investment of NT$2.1 billion, is scheduled to begin operations in Q4. The site includes two new production lines and will play a critical role in LCY's business continuity plans in Central Taiwan.

New Powerful Natural Antioxidant: LCY’s Carotenoid Products Enhance Nutritional Efficiency

To achieve our vision of becoming a Science-Driven Company, LCY has expanded into supplement products, creating a new connection between science and life. The upcoming LY carotenoid product line is produced through a natural fermentation process that leads to molecular structures identical to those found in nature, making it easier for the human body to absorb and achieving better anti-oxidant properties. The product line also offers a far lower carbon footprint than other products on the market.

LCY Supports Global Plastic Regulations with Sustainable Polypropylene Products & Collaborates with Partners to Catalyze Innovation

As the world confronts single-use plastics, LCY has proposed a solution requiring collaboration from material suppliers, brands, and third-party recyclers. 1. Recyclers: Sort, clean, and shred post-consumer polypropylene waste. 2. LCY: Transform recycled materials into innovative green products, specifically, our circular polypropylene. 3. Supply circular polypropylene to end-product manufacturers. The circular polypropylene can incorporate up to 50% post-consumer recycled polypropylene, achieving a 25% to 35% reduction in carbon emissions. Once recycled and processed, these materials can be applied to everyday packaging materials, sporting goods, and consumer products. With the new process, recycling is not end-of-life for plastic goods, but a new beginning that creates new value for the raw materials.

Senior VP Jonathan Wang of LCY's Performance Materials BU concluded that, "when promoting innovative green products, we must ensure quality sources of recycled materials and have also been adopting international standards. Currently, LCY's circular polypropylene has received GRS and TÜV accreditation. This confirms that our green production processes align with market regulations and highlights our resolve to protect our environment."

In addition to researching and developing green products, LCY is also actively engaging with the circular economy ecosystem and supporting technological development for full footwear recycling programs launched by multinational brands. These initiatives seek to increase the feasibility of recycling but also simplify complex recycling processes to re-purpose recycled materials into other sporting goods. We hope that these efforts will be able to significantly reduce carbon emissions.

4.6.4 Encouraging Innovation and Fostering the Next-Gen Talents to Strengthen Global Competitiveness

Hoping to leverage their influences and give back to society, LCY and the LCY Education Foundation has long spotlighted innovative talent cultivation for the materials and chemicals industry, encouraging bright minds to learn and apply technologies and strengthen their professional competency and techniques. Ultimately, we hope to cultivate a robust pool of materials and chemicals professionals, raise our competitiveness on the global stage, and work together to lay strong and lasting foundations for a better future for the industry.

To address talent gaps in higher education, LCY continues to launch talent development programs that evolve with the times. Through a diverse scholarship system, we target outstanding undergraduate and doctoral students as well as young professors in chemical engineering, chemistry, materials science, and related fields. In 2024, a total of 39 recipients received scholarships and grants amounting to NT$7.45 million. Since 2010, our scholarship camps have attracted thousands of applications. In 2023, the Foundation changed the application process and increased the scholarship amount. In the 13th LCY Education Foundation Outstanding Student Award in 2024, we reached nearly thirty institutes of higher education, fifty departments, and 1,200 professors across Taiwan. Additionally, the Chemical Society Located in Taipei sponsors our LCY New Chemical Talent Award each year to inspire outstanding college students. We also established the LCY Distinguished Young Professor Award for Outstanding Academic Research in collaboration with the Taiwan Institute of Chemical Engineers to honor young professors with outstanding academic achievements or contributions in chemical engineering and related fields. In 2024, LCY hosted the first LCY Distinguished Young Professor Exchange Symposium, inviting award recipients, outstanding PhD students, and LCY R&D team members to exchange ideas. The event aims to foster regular exchanges, promote cross-disciplinary academic-industry collaboration, and spark new innovation.

Masters Converge at the Academic Event of the Year: The Bowei Research Conference

The annual Bowei Research Conference (BRC) is hosted by the LCY Education Foundation and organized by our Scientific Advisory Board, which is spearheaded by Dr. Ehud Keinan, President of the International Union of Pure and Applied Chemistry (IUPAC). The BRC invites world-leading scientists and young scholars from Taiwan and beyond to join together for incredible lectures by keynote speakers and equally spectacular Q&As. BRC's poster competition offers a stage for young scientists to showcase their research, facilitating interactions and exchanges between scientists of different generations and countries. At the BRC, we believe that knowledge has no borders in the world of science.

The 4th BRC, themed The Magic of Chemistry, focused on “The Magic of Synthesis – New Frontiers of Molecular Architecture” to explore the latest progress and applications in chemical syntheses. Topics included catalyst design, drug development, environmental protection, and sustainability. In 2024, the BRC invited 15 world-leading scientists from the US, Japan, Israel, Switzerland, the Netherlands, and Taiwan to deliver keynote speeches. In total, the conference attracted 104 young scholars, researchers, and students from Taiwan, Japan, and South Korea. A highlight of the event was the attendance of Dr. Ben Feringa, recipient of the 2016 Nobel Prize in Chemistry, renowned for his work on molecular switches and motors. His presence added academic depth to the conference and elevated our global impact, highlighting the BRC's prestigious status in the international field of chemistry.

Since its inception in 2018, BRC has established itself as a vital platform for young scientists to engage with some of the world’s most influential scientists. As of 2024, the conference has attracted over 500 participants, featured 64 distinguished scholars and scientists, and received support from more than 23 academic and research institutions. The BRC continues to drive global research collaboration and academic exchange as it rises in global influence.

The first LCY Distinguished Young Professor Exchange Symposium

Past and present recipients of the LCY Distinguished Young Professor Award for Outstanding Academic Research gather together

The 4th BRC opens at Sun Moon Lake

The conference serves as a platform for scientists around the world to interact and exchange

BRC Specialty Event I: Retreat Program

Young scientists shine in the poster paper competition

BRC Specialty Event II: Bike Challenge

Appendix

Participation in Industry Associations 112

GRI Standards Reference Table 113

SASB Index 116

TCFD Index 119

Sustainable Development Goals (SDGs) Reference Table 120

Independent Assurance Statement 121

Participation in Industry Associations

Industry Association	Role
Sino-Indonesia Cultural and Economic Association	Member
ROC-USA Business Council	Member
Chemical Society Located in Taipei (CSLT)	Member
Chinese Petroleum Institute	Member
The Third Wednesday Club	Member
Industrial Safety and Health Association (ISHA) of the R.O.C.	Member
Taiwan Responsible Care Association (TRCA)	Vice President Joey Lin serves as an executive director
Sino-Arabian Cultural & Economic Association	Member
The Polymer Society, Taipei	Member
Taiwan Institute of Chemical Engineers (TwIChE)	Member
Taiwan Chemical Industry Association (TCIA)	Vice President of Research and Development Joey Lin serves as vice chairman
Monte Jade Science & Technology Association of Taiwan	Member
Association of Taiwan Bio-based and Sustainable Material Industry	Member
Taiwan Mergers & Acquisitions and Private Equity Council (MAPECT)	Member
Taiwan High-Tech Facility Association	Member
Petrochemical Industry Association of Taiwan	Chairman Tsai-Hsing Hung as the supervisor
Taiwan Synthetic Resins Manufacturers Association	Member
Taiwan Institute of Directors/Women on Boards Taiwan	Member
Taiwan Filtration and Separations Society	Member
Taiwan Contact Lenses Industry Development Association	Member
Taiwan Display Materials & Devices Association	Member
Cross-Strait CEO Summit	Member
Industrial Safety and Health Association (ISHA) of the R.O.C.	Member
WBCSD Global Network Partner	Member
The Corrosion Engineering Association of ROC	Member
Chinese International Economic Cooperation Association (CIECA), Taiwan	Vice Chairman Christine Young sits on the Board of Directors
Chinese Industrial Machinery Association	Member
Taiwan Alliance for Sustainable Supply (TASS)	Member
Taiwan Safety Council	Member
AmCham Taiwan	Member
Industrial Technology Research Institute (ITRI)	Member
Kaohsiung Chamber of Industry	Member
Kaohsiung Industrial Association	Member
Kaohsiung Lin Hai Industrial Park Association	Member
Kaohsiung City Nurses Association	Member
International Institute of Synthetic Rubber Producer	Member
International Association of Arson Investigators Taiwan Chapter	Member
Taiwan Patent Attorneys Association	Member
Young Presidents' Organization (Taipei Chapter)	Member
European Chemicals Agency	Member
European Petrochemical Association (EPCA)	Member
Swiss Chemical Society (SCS)	Member

GRI Standards Reference Table

GRI Standards	Disclosures	Related Chapters	Page
GRI 1: Foundation 2021	GRI 1 Provide a Statement of Use	LCY Chemical Corp. has reported in accordance with the GRI Standards for the period 2024/01/01 to 2024/12/31. GRI 1 used: GRI 1: Foundation 2021.	
	Applicable GRI Sector Standard(s)	None	
GRI 2: General Disclosures 2021	2-1 Organizational details	About this Report 1.2.1 Corporate Governance	6 24
	2-2 Entities included in the organization's sustainability reporting	About this Report	6
	2-3 Reporting period, frequency and contact point	About this Report	6
	2-4 Restatements of information	About this Report Historical data restatement of air quality and carbon emissions detailed in CH3 (to ensure data completeness and comparability with industry peers, the base year for carbon-reduction reporting has been revised from 2019 to 2021).	6
	2-5 External assurance	About this Report	6
	2-6 Activities, value chain and other business relationships	About this Report 1.1.1 About Us 1.4 Supply Chain Management	6 22 32
	2-7 Employees	4.2 Employee Demographics & Management	86
	2-8 Workers who are not employees	4.2 Employee Demographics & Management	86
	2-9 Governance structure and composition	1.2.1 Corporate Governance Please refer to the company's official website: About | LCY Chemical Corp. (lcycic.com)	24
	2-10 Nomination and selection of the highest governance body	1.2.1 Corporate Governance	24
	2-11 Chair of the highest governance body	1.2.1 Corporate Governance	24
	2-12 Role of the highest governance body in overseeing the management of impacts	Identify stakeholders and material topics 1.2.1 Corporate Governance 1.2.2 Sustainable Operations	10 24 25
	2-13 Delegation of responsibility for managing impacts	1.2.2 Sustainable Operations	25
	2-14 Role of the highest governance body in sustainability reporting	Identify stakeholders and material topics 1.2.2 Sustainable Operations	10 25
	2-15 Conflicts of interest	This information is not disclosed due to strict confidentiality regulations and as LCY is not a publicly listed company.	-
	2-16 Communication of critical concerns	There are no significant issues that require reporting to the Board of Directors.	-
	2-17 Collective knowledge of the highest governance body	1.2.1 Corporate Governance 1.2.2 Sustainable Operations	24 25
	2-18 Evaluation of the performance of the highest governance body	LCY Chemical Corp. does not conduct this evaluation. The evaluation approach for LCYtech (Copper Foil Plant) involves: reporting the performance assessment results of the Board of Directors (internal assessments, director self-assessments, and external assessments) to the board. Subsequently, the results are disclosed to TWSE by filing a report on the results of "Self-Evaluation of Performance of the Board" and documented in the annual report.	-
	2-19 Remuneration policies	4.3.1 Pay & Welfare Please refer to the annual report and organizational charter for the remuneration committee for data on LCYtech (Copper Foil Plant), as well as the articles of incorporation §27, 30-1, 31. Link: Annual Report, the organizational charter for the remuneration committee, and articles of incorporation	89 -
	2-20 Process to determine remuneration	4.3.1 Pay & Welfare	89
	2-21 Annual total compensation ratio	4.3.1 Pay & Welfare	89
	2-22 Statement on sustainable development strategy	Message from the Chairman 1.2.2 Sustainable Operations	8 25
	2-23 Policy commitments	Message from the Chairman 1.2.2 Sustainable Operations 1.3.1 Compliance Culture 3.1.1 Environmental Protection Policies 4.1 Human Rights Policies 4.4.1 Talent Cultivation Policies	8 25 27 60 86 92

GRI Standards	Disclosures	Related Chapters	Page
GRI 2: General Disclosures 2021	2-24 Embedding policy commitments	1.2.2 Sustainable Operations 1.3.1 Compliance Culture 4.1 Human Rights Policies 4.4.2 Talent Cultivation Measures	25 27 86 92
	2-25 Processes to remediate negative impacts	1.3.1 Compliance Culture 1.4.2 Supply Chain Management Procedures 4.1 Human Rights Policies 4.4.1 Talent Cultivation Policies	27 33 86 92
	2-26 Mechanisms for seeking advice and raising concerns	1.3.1 Compliance Culture 1.4.2 Supply Chain Management Procedures	27 33
	2-27 Compliance with laws and regulations	Identify stakeholders and material topics 3.1.2 Environmental Regulatory Compliance 4.5.1 Occupational Safety Management	10 60 94
	2-28 Membership associations	Appendix Participation in Industry Associations	112
	2-29 Approach to stakeholder engagement	Identify stakeholders and material topics	10
	2-30 Collective bargaining agreements	4.4.1 Talent Cultivation Policies (There are currently no collective bargaining agreements; communication is carried out through labor-management meetings)	92
GRI 3: Material Topics 2021	3-1 Process to determine material topics	Identify stakeholders and material topics	10
	3-2 List of material topics	Identify stakeholders and material topics	10
Material Topics			
GHG Emissions			
GRI 3: Material Topics 2021	3-3 Management of material topics	3 Green Operations 3.3.1 Carbon Management	56 64
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	3.3.1 Carbon Management	64
	305-2 Energy indirect (Scope 2) GHG emissions	3.3.1 Carbon Management	64
	305-4 GHG emissions intensity	3.3.1 Carbon Management	64
	305-5 Reduction of GHG emissions	3.3.1 Carbon Management	64
Energy Management			
GRI 3: Material Topics 2021	3-3 Management of material topics	3 Green Operations 3.3.2 Energy Management	56 72
GRI 302: Energy 2016	302-1 Energy consumption within the organization	3.3.2 Energy Management	72
	302-2 Energy consumption outside of the organization	3.3.2 Energy Management	72
Employee Training, Human Rights, Diversity & Equal Opportunities			
GRI 3: Material Topics 2021	3-3 Management of material topics	4 Promoting Social Prosperity 4.1 Human Rights Policies 4.4.1 Talent Cultivation Policies	82 86 92
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	4.4.2 Talent Cultivation Measures	92
	404-3 Percentage of employees receiving regular performance and career development reviews	4.4.2 Talent Cultivation Measures	92
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	4.2 Employee Demographics & Management	86
GRI 408: Child Labor	408-1 Operations and suppliers at significant risk for incidents of child labor	4.1 Human Rights Policies	86
Employment			
GRI 3: Material Topics 2021	3-3 Management of material topics	4.2 Employee Demographics & Management 4.3 Employee Welfare	86 89
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	4.2 Employee Demographics & Management	86
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	4.3.1 Pay & Welfare 4.3.2 Employee Health & Safety	89 90
	401-3 Parental leave	4.3.2 Employee Health & Safety (retention rate)	90
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	4.1 Human Rights Policies	86

GRI Standards	Disclosures	Related Chapters	Page
Air Quality			
GRI 3: Material Topics 2021	3-3 Management of material topics	3 Green Operations 3.4.1 Air Quality Policies	56 75
GRI 305: Emissions 2016	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	3.4.2 Air Pollution Reduction Measures	76
Water Management			
GRI 3: Material Topics 2021	3-3 Management of material topics	3 Green Operations 3.5.1 Water Policies	56 77
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	3.5.1 Water Policies 2.2.2 Innovation in Green Materials (Reuse recycled water from UIPA)	77 44
	303-2 Management of water discharge-related impacts	3.5.1 Water Policies	77
	303-3 Water withdrawal	3.5.1 Water Policies	77
	303-4 Water discharge	3.5.1 Water Policies	77
	303-5 Water consumption	3.5.1 Water Policies	77
	303-1 Interactions with water as a shared resource	2.2.2 Innovation in Green Materials	44
Supply Chain Management			
GRI 3: Material Topics 2021	3-3 Management of material topics	1.4 Supply Chain Management	32
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	1.4.2 Supply Chain Management Procedures	33
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	1.4.2 Supply Chain Management Procedures	33
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	1.4.2 Supply Chain Management Procedures	33
Occupational Safety & Health			
GRI 3: Material Topics 2021	3-3 Management of material topics	4.5.1 Occupational Safety Management	94
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	4.5.1 Occupational Safety Management	94
	403-2 Hazard identification, risk assessment, and incident investigation	4.5.1 Occupational Safety Management	94
	403-3 Occupational health services	4.5.2 Promoting Occupational Health	100
	403-4 Worker participation, consultation, and communication on occupational health and safety	4.5.1 Occupational Safety Management	94
	403-5 Worker training on occupational health and safety	4.5.1 Occupational Safety Management	94
	403-6 Promotion of worker health	4.5.2 Promoting Occupational Health	100
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	1.4.2 Supply Chain Management Procedures 4.5.1 Occupational Safety Management	33 94
	403-8 Workers covered by an occupational health and safety management system	4.5.1 Occupational Safety Management	94
	403-9 Work-related injuries	4.5.1 Occupational Safety Management	94
	403-10 Work-related ill health	4.5.1 Occupational Safety Management	94
Information Security			
GRI 3: Material Topics 2021	3-3 Management of material topics	1.5 Information Security	36
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	1.5.2 Information Security Management Procedures	37
Green Products			
GRI 3: Material Topics 2021	3-3 Management of material topics	2.1.1 Innovative Management 2.2.1 LCY's Sustainability 6R	42 43
GRI 301: Materials 2016	301-2 Recycled input materials used	2.2.2 Innovation in Green Materials (100% recycled copper wire & PCR-PP)	44

SASB Index - Chemical Sector (2023 version)

Topic	Code	Accounting Metric	2024 Amount	Related Chapters	Page
GHG Emissions	RT CH 110a.1	Gross global Scope 1 emissions (tCO_2e)	In 2024, total GHG emissions across LCY locations in Taiwan, China, the US, and Canada amounted to 762,724 tCO_2e, with a carbon intensity of 0.751 tCO_2e per ton of production. Compared to 2023, total emissions decreased by 6,836 tons, representing a 4.3% reduction in carbon intensity. From the base year (2021), LCY has reduced a cumulative total of 343,405 tons of carbon, reaching a reduction rate of 31%.	3.3.1 Carbon Management	64
		Percentage of Scope 1 emissions covered under emissions-limiting regulations (%)	Starting from 2025, the Ministry of Environment will levy a carbon fee for GHG emissions. There are currently no laws or regulations in China or the US regarding carbon fees, but LCY will continue to monitor domestic and international laws and regulations on carbon fees.		-
	RT CH 110a.2	Discussion of strategy to manage Scope 1 emissions, emission reduction targets, and an analysis of performance against those targets.	Due to the type and characteristics of the products we offer at LCY, our GHG emissions are primarily indirect emissions (Scope 2), which account for nearly 82% of our total emissions, rather than direct emissions (Scope 1), which are more common in traditional petrochemical industries. As such, carbon reduction measures focused on two areas: energy and steam conservation. We also utilized smart management systems at the plant to identify optimal operating parameters and potential hotspots for energy conservation. New practices implemented included replacing variable-frequency drives, recycling waste heat, and reducing steam usage. LCY's carbon reduction strategies focus on conserving and increasing the efficiency of electricity and steam use. We are currently progressing steadily toward our goal of 42% reduction by 2030 (from 2021) and net zero emissions by 2050.	3.3.1 Carbon Management	64
Air Quality	RT CH 120a.1	Air emissions of the following pollutants: (1) Nitrogen oxides (NOx)	43.80 tons	3.4.2 Air Pollution Reduction Measures	76
		(2) Sulfur oxides (SOx)	3.91 tons	3.4.2 Air Pollution Reduction Measures	76
		(3) Volatile organic compounds (VOC)	209.44 tons	3.4.2 Air Pollution Reduction Measures	76
		(4) Hazardous Air Pollutants (HAPs)	71.65 tons	3.4.2 Air Pollution Reduction Measures	76
Energy Management	RT CH 130a.1	(1) Total energy consumed (GJ)	7,389,572 GJ	3.3.2 Energy Management 3.3.3 Promoting Renewable Energy	72
		(2) Percentage grid electricity (%)	26.17%		
		(3) Percentage renewable (%)	0.22%		
		(4) Total self-generated energy (GJ) (+T-REC)	15,889GJ	3.3.2 Energy Management 3.3.3 Promoting Renewable Energy	72 74
Water Management	RT CH 140a.1	(1) Total water withdrawal	4,976,610.9 tons	3.5.1 Water Policies	77
		(2) Percentage of total water withdrawn in regions of High or Extremely High Baseline Water Stress	0% We have identified water resource risks in our main production locations with WRI's water assessment tool, Aqueduct Water Risk Atlas. Plants in Kaohsiung (Taiwan), Huizhou (China), AR (China), and Zhenjiang (China) are in regions of low baseline water stress; and Baytown (US) has low-to-medium baseline water stress, hence 0%.	3.5.1 Water Policies	77
		(3) Total water consumption	2,691,873.4 tons	3.5.1 Water Policies	77
		(4) Percentage of the total water consumed in regions of High or Extremely High Baseline Water Stress	0% We have identified water resource risks in our main production locations with WRI's water assessment tool, Aqueduct Water Risk Atlas. Plants in Kaohsiung (Taiwan), Huizhou (China), AR (China), and Zhenjiang (China) are in regions of low baseline water stress; and Baytown (US) has low-to-medium baseline water stress, hence 0%.	3.5.1 Water Policies	77
Water Management	RT CH 140a.2	Number of incidents of non-compliance associated with water quality permits, standards, and regulations	0	3.5.3 Water Pollution Prevention Measures	80
	RT CH 140a.3	Description of water management risks and strategies to mitigate those risks	At LCY, we manage water resources from three aspects: governance, strategic and technical. The governance aspect includes elevating the importance of water management, establishing the Energy & Water Conservation Committee, and setting water conservation goals; • The strategic aspect includes 1) increasing the amount of water recycled at the plants by recycling steam condensate, using MBR technology to treat wastewater at plants, and 2) installing water conservation facilities to reduce water withdrawals and working with external parties to implement a water reclamation program; • The technical aspect includes research, development, and optimization of MBR technology and other technologies that improve water use efficiency.	3.5.1 Water Policies	77
Hazardous Waste Management	RT CH 150a.1	Amount of hazardous waste generated	1,331.8 tons	3.6.1 Waste Management	80
		Percentage of hazardous waste recycled	23.01% (handled by trusted recycling organizations)	3.6.1 Waste Management	80
Community Relations	RT CH 210a.1	Discussion of engagement processes to manage risks and opportunities associated with community interests	LCY upholds three principles for community relations: community engagement, process safety, and environmental protection. • Plant operations may impact process safety, air pollution, employment, and transport safety for surrounding communities. • We've established a direct communication channel with local village chiefs to ensure immediate communication and feedback. • Plant employees conduct community visits and report any assistance or improvements required by the communities back to the plant and LCY to give us more insight and ensure that changes are being implemented.	4.6.1 Community Relations Management Policies	101
Workforce Health & Safety	RT CH 320a.1	Contract Employees include temp workers, outsourced workers (security/ cleaning services/factory drivers), interns, part-time workers, long-term contractors, etc.	Employee Type / Total recordable incident rate (TRIR) / Fatality Rate (FR) Employees: 0.23 / 0 Contract Employees: 0.372 / 0 There were 6 work-related injuries, 0 fatalities, and 0 cases of work-related ill health in 2024. Work accidents in plants were primarily from falls, collisions, or improper use of machinery. The work accidents have now been included in management references to serve as a basis for optimization and strengthening education and training.	4.5.1 Occupational Safety Management	94
	RT CH 320a.2	Description of efforts to assess, monitor, and reduce exposure of employees and contract workers to long-term (chronic) health risks.	• Provide regular and comprehensive health and cancer screenings for employees at all levels based on their work environment. • Provide health screening and control banding for special tasks to ensure that employees do not come into contact with harmful and hazardous substances that could subsequently affect their health. • Screen all plant employees for musculoskeletal symptoms and reevaluate existing work arrangements based on past incidence rates and employee medical history to reduce incidence rates.	4.5.2 Occupational Health Services	100

Topic	Code	Accounting Metric	2024 Amount	Related Chapters	Page
Product Design for Use-Phase Efficiency	RT CH 410a.1	Revenue from products designed for use-phase resource efficiency	In 2024, green products generated NT$4,800,264,000 in revenue, accounting for 9% of total revenue.	2.2.1 LCY's Sustainability 6R	43
Safety & Environmental Stewardship of Chemicals	RT CH 410b.1	Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances	13.9%	2.3.1 Chemical Management Protocols	51
		Percentage of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Category 1 and 2 Health and Environmental Hazardous Substances, that have passed a hazard assessment	100%	2.3.1 Chemical Management Protocols	51
	RT CH 410b.2	Discussion of strategy to manage chemicals of concern and develop alternatives with reduced human and/or environmental impact.	Chemical management at LCY is controlled through two phases: Product R&D and Plant Management	2.3.1 Chemical Management Protocols	51
			Product R&D phase: Evaluate alternatives and reduce high-risk/hazardous substances. Meet with industrial safety and environmental protection units at plants to conduct environmental and health hazard and safety assessments for the production process. In the TPE-SIS product line, a successful substitution was made for talc, a raw material for the dedusting agent, which was suspected of causing health and environmental problems. In addition, at the Linyuan plant, analytical methods were adjusted to avoid the use of carcinogenic listed toxic substances, specifically potassium dichromate and potassium chromate, to improve employee safety. Plant management phase: The Environmental Risk Management Department at headquarters and the occupational safety and environmental protection offices at the plants formulate quality control guidelines for each of the five stages of the chemical life cycle, including needs-based application, incoming inspection, procurement labeling, storage and use, and disposal. We monitor changes in chemical regulations by the relevant authorities, clarify the impact on our plants, and discuss response measures to ensure that the use and management of chemicals at all plants comply with local laws and regulations.	2.3.2 Responsible Chemical Research	52
Genetically Modified Organisms	RT-CH-410c.1	Percentage of products by revenue that contain genetically modified organisms (GMOs)	LCY does not use any genetically modified raw materials, as such, the percentage of products by revenue that contain GMOs is 0%.		
Management of the Legal & Regulatory Environment	RT CH 530a.1	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	To track, assess, and manage changes in related regulations, responsible local units and industrial safety and environmental protection offices in plants are instructed to pay close attention to regulatory changes, coordinate support and rollout, and ensure employee understanding and compliance through regular information sharing, education, training, advocacy, and announcements. Our goal is zero noncompliance.	1.3.1 Compliance Culture	27
Emergency Preparedness & Response for Occupational Safety	RT CH 540a.1	Process Safety Incidents Count (PSIC)	1	4.5.1 Occupational Safety Management	94
		Process Safety Total Incident Rate (PSTIR)	0.069		
		Process Safety Incident Severity Rate (PSISR)	0.035		
			In 2024, there was one process safety incident (zero Tier 1, one Tier 2). The incident involved a chemical leak, but fortunately, no injuries were reported. All incidents were thoroughly tracked and managed, and recommendations for improvement were made.		
	RT CH 540a.2	Number of transport incidents	0		
Production	RT CH 000.A	Annual production by reportable segment (tons) / percentage (%)	Due to LCY's commercial considerations, only the production ratio by business unit is provided. This data is based on products with measurable convertible weight. (Products or services that cannot be quantified by weight are excluded from the statistics, e.g., MBR products from the Industrial Solutions business unit are not included.) Elastomers Solutions 495,475tons / 47% Performance Materials 234,215tons / 22% Industrial Solutions 151,344tons / 15% Electronics Materials 154,453 tons / 15% LCYtech (Copper Foil Plant) 8,056tons / 1% Biosciences & Nutrition Solutions 0 tons / 0% Others 0 tons / 0% Total 1,043,543 tons / 100%	1.1.1 About Us	22

TCFD Index

TCFD Disclosure Standards		Related Chapters	Page
Governance	A. Describe the board's oversight of climate-related risks and opportunities.	3.2.1 Governance & Policies	61
	B. Describe management's role in assessing and managing climate-related risks and opportunities.		
Strategy	A. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	3.2.2 Climate Risk and Response	62
	B. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	3.2.1 Governance & Policies	61
	C. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	3.2.2 Climate Risk and Response	62
Risk Management	A. Describe the organization's processes for identifying and assessing climate-related risks.	3.2.2 Climate Risk and Response	62
	B. Describe the organization's processes for managing climate-related risks.		
	C. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.		
Metrics and Targets	A. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	3.3 Carbon & Energy Management	64
	B. Disclose Scope 1, Scope 2 and, if applicable, Scope 3 greenhouse gas (GHG) emissions and the related risks.		
	C. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.		

Sustainable Development Goals (SDGs) Reference Table

SDGs Target	Description	Chapter/Section
Target 1	Goal 1: No Poverty: End poverty in all its forms everywhere	none
Target 2	Goal 2: Zero Hunger: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	none
Target 3	Goal 3: Good Health and Well-being: Ensure healthy lives and promote well-being for all at all ages	4.5 Occupational Safety
Target 4	Goal 4: Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	none
Target 5	Goal 5: Gender Equality: Achieve gender equality and empower all women and girls	4.1 Human Rights Policies / 4.3 Employee Welfare / 4.4 Talent Cultivation
Target 6	Goal 6: Clean Water and Sanitation: Ensure availability and sustainable management of water and sanitation for all	3.5 Water Management
Target 7	Goal 7: Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all	3.3 Carbon & Energy Management
Target 8	Goal 8: Decent Work and Economic Growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	01. Strong Sustainable Governance / 1.2 Sustainable Governance / 1.3 Regulatory Compliance / 2.2 Sustainable Products and Services / 4.1 Human Rights Policies / 4.2 Employee Demographics & Management / 4.5 Occupational Safety
Target 9	Goal 9: Industry, Innovation, and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	01. Strong Sustainable Governance 4.2 Employee Demographics & Management
Target 10	Goal 10: Reduced Inequality: Reduce inequality within and among countries	01. Strong Sustainable Governance 4.1 Human Rights Policies / 4.2 Employee Demographics & Management / 4.3 Employee Welfare
Target 11	Goal 11: Sustainable Cities and Communities: Make cities and human settlements inclusive, safe, resilient, and sustainable	4.5 Occupational Safety 3.4 Air Quality Management/ 3.5 Water Management / 3.6 Waste Management
Target 12	Goal 12: Responsible Consumption and Production: Ensure sustainable consumption and production patterns	2.2 Sustainable Products and Services
Target 13	Goal 13: Climate Action: Take urgent action to combat climate change and its impacts	3.2 Climate Strategy
Target 14	Goal 14: Life Below Water: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	none
Target 15	Goal 15: Life on Land: Protect, restore and promote sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, and halt and reverse land degradation and halt biodiversity loss	none
Target 16	Goal 16: Peace and Justice Strong Institutions: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	1.2 Sustainable Governance / 1.3 Regulatory Compliance / 1.4 Supply Chain Management 4.1 Human Rights Policies / 4.4 Talent Cultivation
Target 17	Goal 17: Partnerships to achieve the Goal: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	none

Independent Assurance Statement

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INDEPENDENT ASSURANCE OPINION STATEMENT

LCY CHEMICAL CORP. 2024 Sustainability Report

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

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

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

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

Scope

The scope of engagement agreed upon with LCY includes the followings:
1. The assurance scope is consistent with the description of LCY CHEMICAL CORP. 2024 Sustainability Report.
2. The evaluation of the nature and extent of the LCY's adherence to AA1000 AccountAbility Principles (2018) in this report as conducted in accordance with type 1 of AA1000AS v3 sustainability assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

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

Opinion Statement

We conclude that the LCY CHEMICAL CORP. 2024 Sustainability Report provides a fair view of the LCY sustainability programmes and performances during 2024. The sustainability report subject to assurance is free from material misstatement based upon testing within the limitations of the scope of the assurance, the information and data provided by the LCY and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are fairly represented. The sustainability performance information disclosed in the report demonstrate LCY's efforts recognized by its stakeholders.

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

Methodology

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

Conclusions

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

Inclusivity

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

Materiality

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

Responsiveness

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

Impact

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

GRI Sustainability Reporting Standards (GRI Standards)

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

Assurance level

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

Responsibility

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

Competency and Independence

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

For and on behalf of BSI:

Joe Hsieh, Managing Director Northeast Asia, APAC Assurance

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Statement No: SRA-TW-824203
2025-08-29

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