順天醫藥生技
LUMOSA Therapeutics

2024 Sustainability Report

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Chairperson's Message

Working Together for a Sustainable Future and Better Health

In today's world of climate change, unstable politics, and growing healthcare needs, Lumosa Therapeutics Co., Ltd. stands by its core value of placing people first. We focus on creating new medicines for unmet medical needs, especially in neurological diseases and cancer. We believe that only by pursuing sustainability can we ensure long-term growth and fulfill our responsibilities to society.

Key Achievements 2023-2024

Lumosa has made great progress in the past two years. In research and market expansion. Lumosa's long-acting analgesic injection, LT1001, received approval in Ukraine and Brunei. The Company also signed an exclusive agreement with India's GUFIC Biosciences Limited, strengthening our global presence. Additionally, Lumosa's LT3001, a novel treatment for acute ischemic stroke, received a US patent for dosages, building a strong foundation for future clinical trials and market entry.

Current Status and Future Sustainability Goals

Lumosa takes Environmental, Social, and Governance (ESG) matters seriously. Our board and management team regularly review climate-related risks and opportunities, and develop strategies to address climate change challenges. We have created a sustainability implementation task force and use the TCFD framework to identify and manage climate risks. We have set medium and long-term goals to reduce greenhouse gases and are working to save energy and reduce carbon emissions in our manufacturing processes.

Our Corporate Culture and Values

Lumosa follows the core values of "Adventure, Integrity, Creativity, Customer Focus, and Responsibility." We encourage our employees to take on challenges and embrace change while approaching every task honestly. We believe that innovation and growth can only occur when built on integrity and professionalism. We strive to create a workplace that supports diversity and encourages innovation, allowing every employee to reach their potential and create value for our company and society.

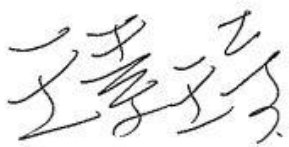
Chairperson’s Message

Our Commitment to ESG Leadership

As Apple CEO Tim Cook said, "The most important thing Apple is doing is making sure they leave the world better than they found it." Lumosa understands that real sustainable development can only take place when ESG principles are part of every aspect of our business. Our commitment to social responsibility and ongoing innovation drives our ESG efforts.

Looking to the Future

Going forward, Lumosa will continue our "Explore and Develop" approach, combining innovative medicine with sustainability as we work to become a global leader in neuroscience. We will strengthen our ESG management, improve corporate governance, and meet global demand for high-quality medicines through partnerships and innovation, ultimately improving patients' lives. I sincerely thank all employees, partners, and shareholders for their support and trust. Let's move forward together toward a better future, making greater contributions to human health and global sustainability.



Su-Chi Wang
Chairperson, Lumosa Therapeutics, Col., Ltd.

About This Report

To pursue sustainable business operations and enhanced information transparency, Lumosa has published its 2024 Sustainability Report (hereinafter referred to as “this Report”). Through this Report, we aim to inform stakeholders about the measures taken and performance achieved in building honest governance, implementing environmental protection and occupational safety measures, and improving employee compensation and benefits—all under our goal of sustainable operations. Lumosa hopes that stakeholders will continue to follow our progress and provide valuable suggestions as we gradually implement our corporate sustainability concepts and vision, fulfilling our responsibility toward the sustainable development of our global village.

Image by Rosy / Bad Homburg / Germany from Pixabay

Report on Boundaries and Scope

Disclosure Category	Coverage
Period	This report primarily discloses content of the business operations from the 2024 fiscal year (January 1, 2024 to December 31, 2024). However, to comply with the completeness and comparability of GRI reporting standards, relevant management performance content includes data from before 2024.
Scope Boundary	Taiwan headquarters, Lumosa Therapeutics Co., Ltd.
Financial Data	Data same as consolidated financial report
Environmental, Health and Safety Data	Same as scope boundaries above
Employee Data	Same as scope boundaries above
Public Welfare Activity Performance	Same as scope boundaries above
Information Restatement	As this is the first year of report preparation, there are no instances of information restatement.

About This Report

Reporting Methodology and Information Verification

- The structure of this report adheres to the Global Reporting Initiative (GRI) Standards 2021 framework while incorporating guidance from the Task Force on Climate-related Financial Disclosures (TCFD) and the Sustainability Accounting Standards Board (SASB). The document complies with Taiwan's " Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TPEx Listed Companies " and includes reference indices for GRI Standards, SASB metrics, TCFD disclosure items, and climate-related information of TPEx listed company in the appendix for stakeholder review.

- Financial data disclosed in this report has been audited by PricewaterhouseCoopers in accordance with International Financial Reporting Standards (IFRS), with figures presented in thousands of New Taiwan dollars. Environmental protection, employee welfare, and occupational safety metrics have been compiled and verified by the responsible departments and their respective management, presented using internationally recognized calculation methodologies.

Image by Mohamed Hassan from Pixabay

About This Report

Report Management

The report is written in traditional Chinese and translated into English with data provided by personnel from relevant departments. Department heads review the content for accuracy and completeness before an editorial team compiles the information. The report is then submitted to the General Manager for review and approval, and published on the Company website following Board approval in August 2025. As required by the "Rules Governing the Preparation and Filing of Sustainability Reports by TPEx Listed Companies," the report will be uploaded to the Market Observation Post System before the end of August.

Publication Cycle

Lumosa publishes its sustainability report annually, with this year's report being the inaugural edition.

Feedback

Please contact us if you have any comments or questions regarding the contents of this report.

ESG Sustainability Implementation Task Force
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URL:

Chapter

1

Sustainability Management

1.1 Sustainability Development

Lumosa firmly believes that corporate responsibility extends far beyond its core business of developing solutions for patients in urgent need of neurological and oncological treatments. We are committed to implementing Environmental, Social, and Governance (ESG) principles and integrating them into our business strategy planning.

Environmental Management

While developing new drugs to address unmet medical needs, we remain vigilant about our environmental footprint. We strive to reduce resource consumption and conserve electricity, promoting material reuse and recycling throughout our operations. Our commitment to environmental management demonstrates our determination to pursue sustainable business practices.

Social Responsibility

Our commitment to social responsibility is embodied in our corporate spirit of "Caring for Life, Selfless Dedication." While we currently do not participate in specific charitable activities, our core mission is to address unmet medical needs—aligning with important social objectives aimed at improving the quality of life for patients globally.

Image by Gerd Altmann from Pixabay

1.1 Sustainability Development

Corporate Governance

Lumosa complies with Taiwan's corporate governance regulations, ensuring transaction transparency and ethical conduct. We strengthen fairness through internal controls and preventing insider trading. We support shareholder communication, board oversight, and regulatory compliance, having appointed a corporate governance officer in May 2023.

Our Sustainability Implementation Task Force has established specialized working groups to address ESG dimensions. Responsible departments collect stakeholder concerns on environmental protection, occupational safety, supply chain management, labor rights, and governance, proposing policies when necessary. We maintain a dedicated stakeholder section on our website to respond to significant sustainability issues.

Beginning in 2025, we plan to report on sustainability issues including greenhouse gas inventory, risk management effectiveness, information security, stakeholder communication, and governance status

ESG Outlook

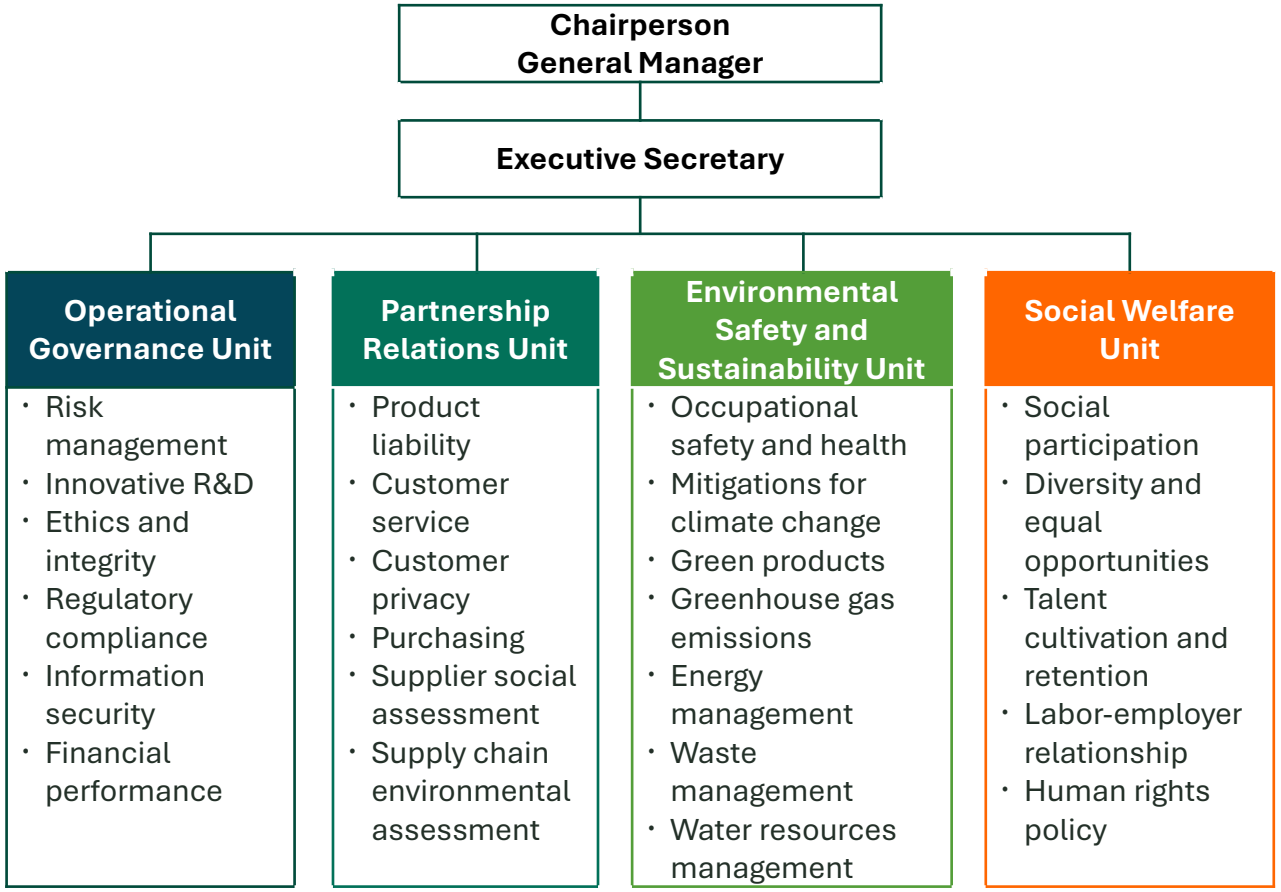
The ESG journey is a process of continuous review and improvement. We are committed to practicing sustainable operations, which not only benefits corporate growth but also creates positive impacts for stakeholders, including investors, business partners, and employees. We sincerely invite you to join this journey and witness how we integrate ESG principles into our corporate culture, demonstrating our firm commitment to caring for life, selfless dedication, and sustainable operations.

Lumosa Stakeholder Section

Image by Yolanda Díaz Tarragó from Pixabay

1.1 Sustainability Development

Organizational Chart of Lumosa ESG Sustainability Implementation Task Force



Functions of the Sustainability Implementation Task Force

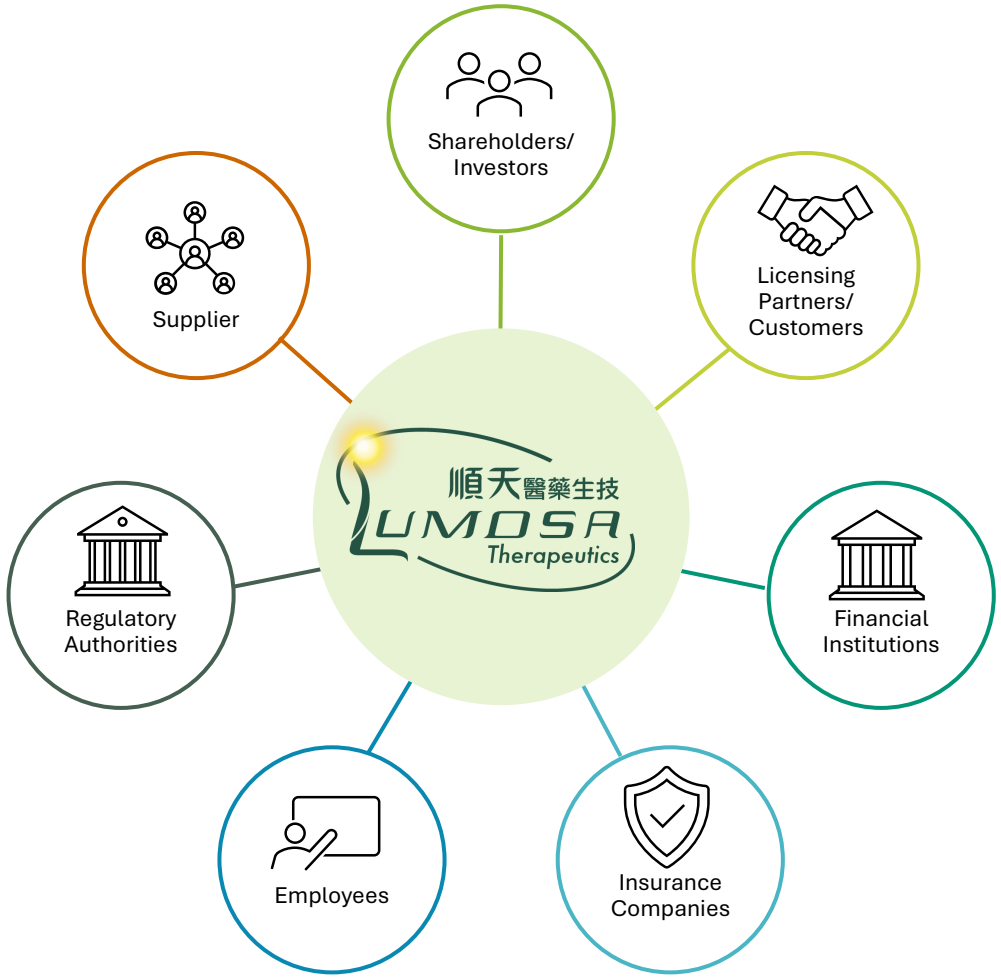
- Setting corporate sustainable development goals and strategies
- Promote and supervise corporate sustainable development work
- Review corporate sustainable development results
- Process other matters related to the sustainable development of the Company
- Sustainability report review

Duties of the Chairperson

- Establish sustainable development policies
- Supervise the execution of the sustainability implementation task force and the preparation of the sustainability report
- Report to the Board of Directors regularly regarding the implementation of sustainable development annually

1.2 Identifying Key Stakeholders

While pursuing sustainable operations, Lumosa emphasizes stakeholder voices. We consider any individual or group impacting or affected by our operations as stakeholders. Our Sustainability Implementation Task Force, following AA1000 SES principles, identified seven primary stakeholder groups through internal discussions, evaluating dependency, responsibility, influence, diverse perspectives, and tension characteristics. Key stakeholders include: regulatory authorities, shareholders/investors, suppliers, licensing partners/customers, employees, insurance companies, and financial institutions.



Stakeholder Identification Process

Referenced international standard AA1000 SES stakeholder engagement principles and peer-related stakeholder practices

Each department inventoried stakeholders related to routine business operations

Internal meetings were held to discuss and identify the seven major stakeholder groups

1.3 Stakeholder Communication Channels and Focus Issues

Stakeholders have varying concerns about Lumosa based on their different roles and identities. Lumosa has published corporate sustainability information on its official website and established open, direct communication channels for stakeholders to understand and promptly respond to their requirements and expectations. The Company aims to work with stakeholders toward mutual benefits to achieve sustainable business operations, while continuously reviewing and improving its corporate sustainability performance. Additionally, Lumosa reports to the Board of Directors annually regarding communications with key stakeholders. The most recent report was presented to the Board in November 2023 as a reference for sustainability strategy planning.

Through daily operational activities, Lumosa's Sustainability Implementation Task Force consolidates focus issues raised during departmental communications with key stakeholders. The team also references the GRI Sustainability Reporting Standards 2021 and SASB industry sustainability indicators to identify 24 sustainability issues covering economic, environmental, and social dimensions. This approach ensures that Lumosa's disclosed sustainability information across ESG aspects meets stakeholder expectations.

Key Stakeholder Categories	Areas of Concern	Communication Channels/Frequency
Regulatory Authorities	• Corporate governance • Greenhouse gas • Occupational safety • Regulatory compliance	• Scheduled regulatory reporting, reviewing meetings • Online reporting system and e-mail communication Contact window: Nai Ching Liu / Lumosa spokesperson (ESG@lumosa.com.tw0
Stockholders/ Investors	• Talent development • Operational performance • Innovation and R&D • Information security and privacy protection • Safety of the trial participants	• Annual/quarterly reports • General stockholders' meeting and dedicated sections in the webpage for investors' relations • Respond to investors' inquiries through e-mail or scheduled presentations Contact window: Nai Ching Liu/ Lumosa spokesperson (Spokesperson@lumosa.com.tw)

1.3 Stakeholder Communication Channels and Focus Issues

Key Stakeholder Categories	Areas of Concern	Communication Channels/Frequency
 Insurance Companies	• Customer service • Industrial advancement • International exchange • Industry-academia collaboration • Affordability and drug pricing • Operation secret protection and transaction security	• Scheduled meeting: discuss insurance plans and optimize corporate insurance combination • Insurance risk assessment report: Assist insurance companies to assess the potential risks of the products and clinical trials. • Annual review: Inspect changes in corporate health and asset insurance needs. • Online declaration system: Immediate reporting of any insurance events or applications for compensation. Contact window: Business Administration (ESG@lumosa.com.tw)
 Financial Institutions	• Customer service • Industrial advancement • International exchange • Industry-academia collaboration • Safety of the trial participants • Affordability and drug pricing • Operation secret protection and transaction security	• Scheduled financial meetings: Discussion of funding needs and loan conditions with banks. • Financial risk report: Banks assist in analyzing exchange rate and interest rate risks. • ESG Collaboration mechanism: Banks provide green financing solutions based on Lumosa's sustainability development plans. • Corporate visits and training: Participation in financial risk management courses organized by banks to enhance internal fund management capabilities. Contact window: Business Administration (ESG@lumosa.com.tw)

1.3 Stakeholder Communication Channels and Focus Issues

Key Stakeholder Categories	Areas of Concern	Communication Channels/Frequency
 Licensing Partners/ Clients	• Operational performance • Product safety and responsibility • Product safety risks • Product quality risks • Corporate sustainability risks • Changes in industry and technical market • Operational secrets • Intelligence property risks	• Scheduled meetings and project reporting: Once a month senior management meeting to discuss progress in collaborations and milestones. Scheduled project team meeting to update R&D progress, regulatory progress and market status. • E-mails and instant messaging: Daily communications conducted using e-mails to ensure that the partners can obtain important messages anytime. Use instant messaging apps (such as Teams, Zoom) for instant discussion over issues. • Annual industrial conventions: Participate annual industrial conventions once a year to share corporate strategies, R&D results, market forecast, to strengthen mutual trust and collaboration. • Dedicated contact window: Delegate project manager as the contact window responsible for coordination of interior and exterior resources, to ensure that the needs of both parties are addressed promptly. • Information sharing platform: Establish safe document sharing platform or collaboration system, ensure conformed instant sharing of information and R&D data. Contact window: Todd Ban, Head of BD (bd@lumosa.com.tw)

1.4 Identification of Material Topics

Material Topics Identification Process

Step 1 Understanding Organizational Context

Understand the organization's profile, products or services, target markets, industry characteristics, and relevant domestic and international issues. Review operational activities and their business relationship contexts.

Step 2 Identifying Actual and Potential Impacts

After identifying actual or potential impacts of organizational activities and business relationships on the economy, environment, and people, and understanding stakeholder concerns, consolidate these into sustainability topics.

Step 3 Assessing Impact Significance

Determine the significance of impacts based on their severity, timeframe, and recoverability for each topic. (Impacts include actual/potential, positive/negative)

Step 4 Determining Material Topics for Reporting

Through internal and external stakeholder surveys, obtain combined scores for "stakeholder impact on sustainability topics" and "company operational impact on sustainability topics." After ranking by score and discussion among governance members, determine high-concern, high-impact material topics in economic, environmental, and social dimensions for reporting

1.4 Identification of Material Topics

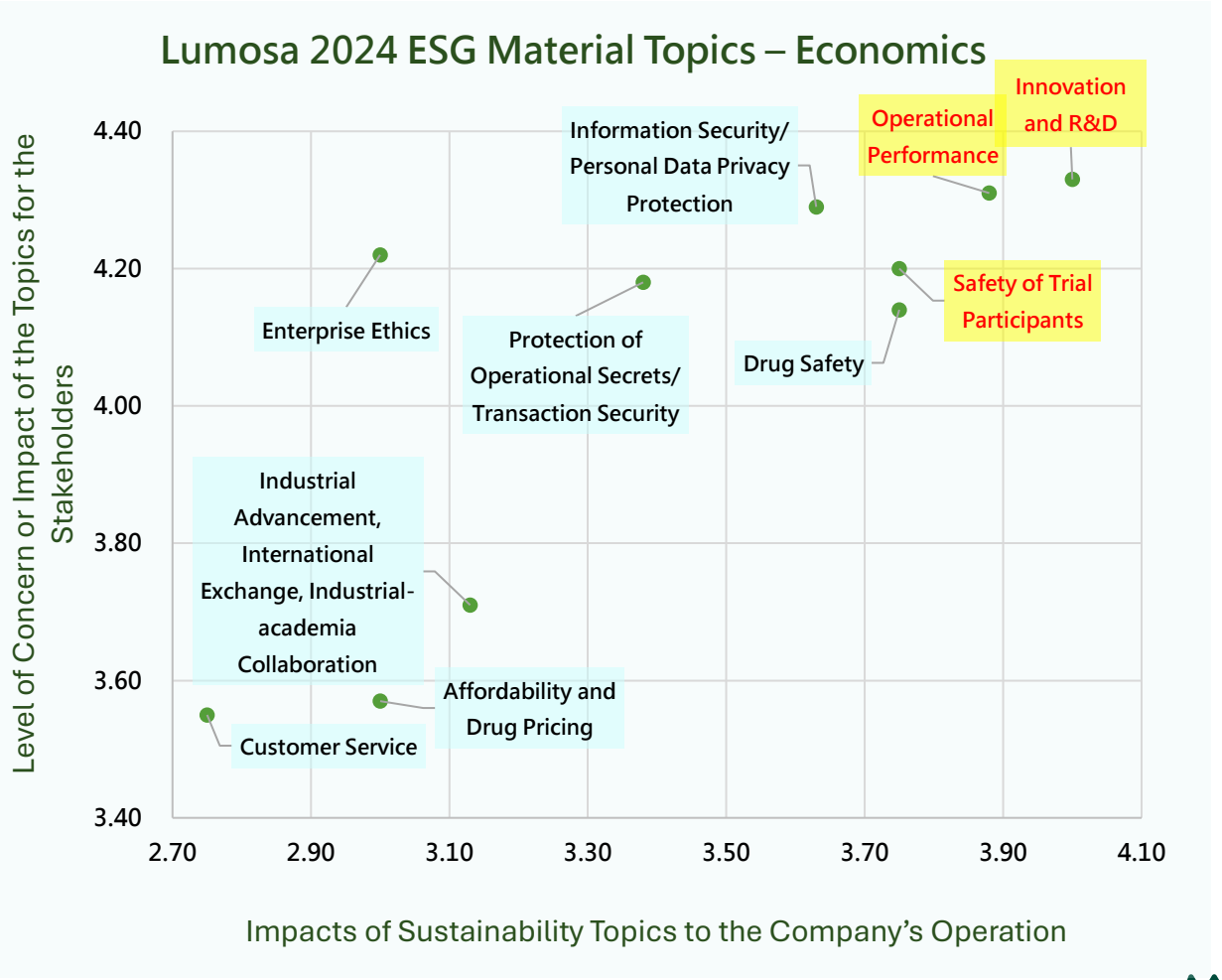
Sustaining Strategies **23 Items** → Attention Level Survey **51 Surveys recovered** → Extent of Impact Survey **8 Surveys recovered** → Identify Material Topics **8 Topics**

Aspects	Material Topics for 2024
Environmental	Laboratory Waste Management
Social	Compensation and Benefits, Talent Development, Product Health and Safety
Corporate Governance	Operational Performance, Innovation and R&D, Safety of Trial Participants, Drug Safety

1.4 Identification of Material Topics

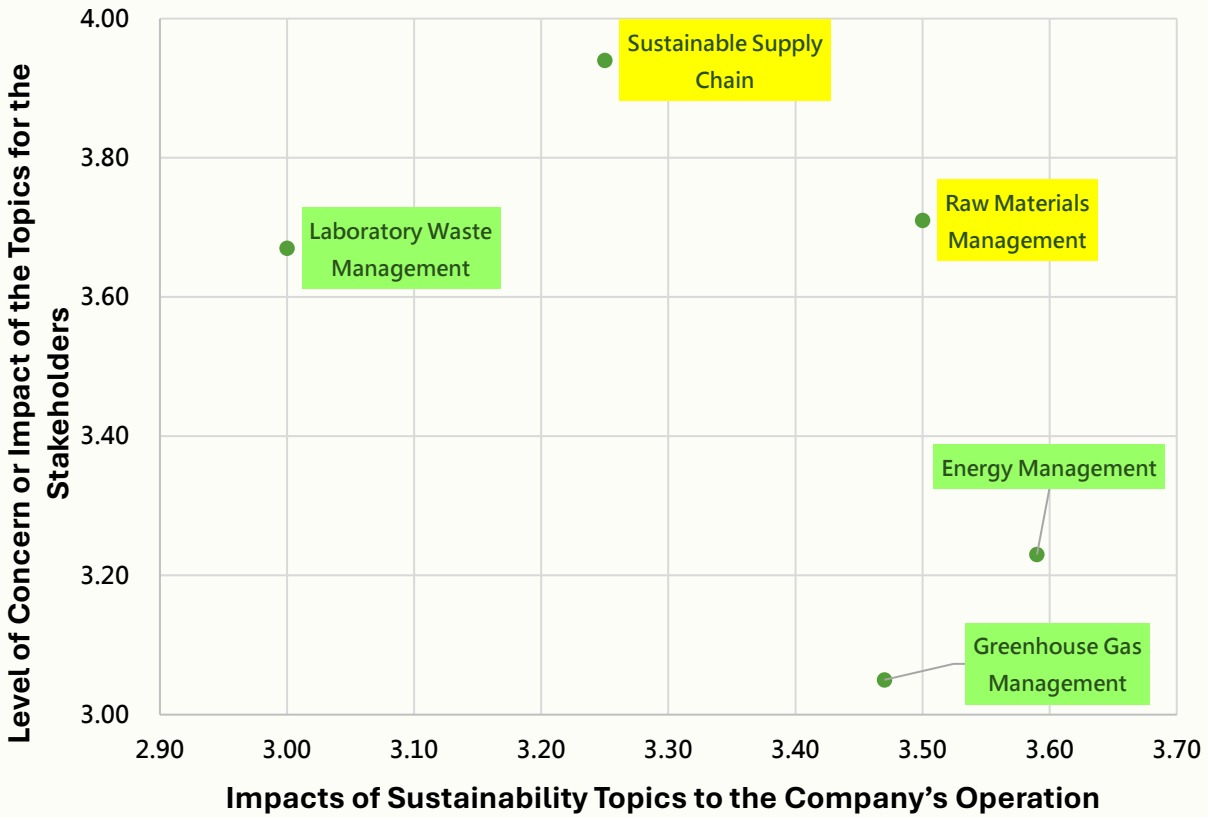
Analysis of Material Topics

Lumosa's Sustainability Development Team identified 23 sustainability topics and distributed questionnaires to stakeholders for rating their concerns, with scores ranging from 1 to 5 (higher scores indicating greater concern). A total of 51 valid surveys were collected from key stakeholders. Simultaneously, surveys were distributed to eight senior executives of the Company to evaluate the impact of each topic on the Company's sustainable operations. The survey analysis ranked topics from highest to lowest total score, mapping them on a matrix to identify high-concern and high-impact material topics. After discussion in the Sustainability Development Team meeting, Lumosa's material topics for 2024 were determined and prioritized as laboratory waste management, compensation and benefits, talent development, product health and safety, operational performance, innovation and R&D, the safety of trial participants, and drug safety. These eight topics will be addressed in relevant chapters of this report, including management approaches and required disclosures for each material topic.

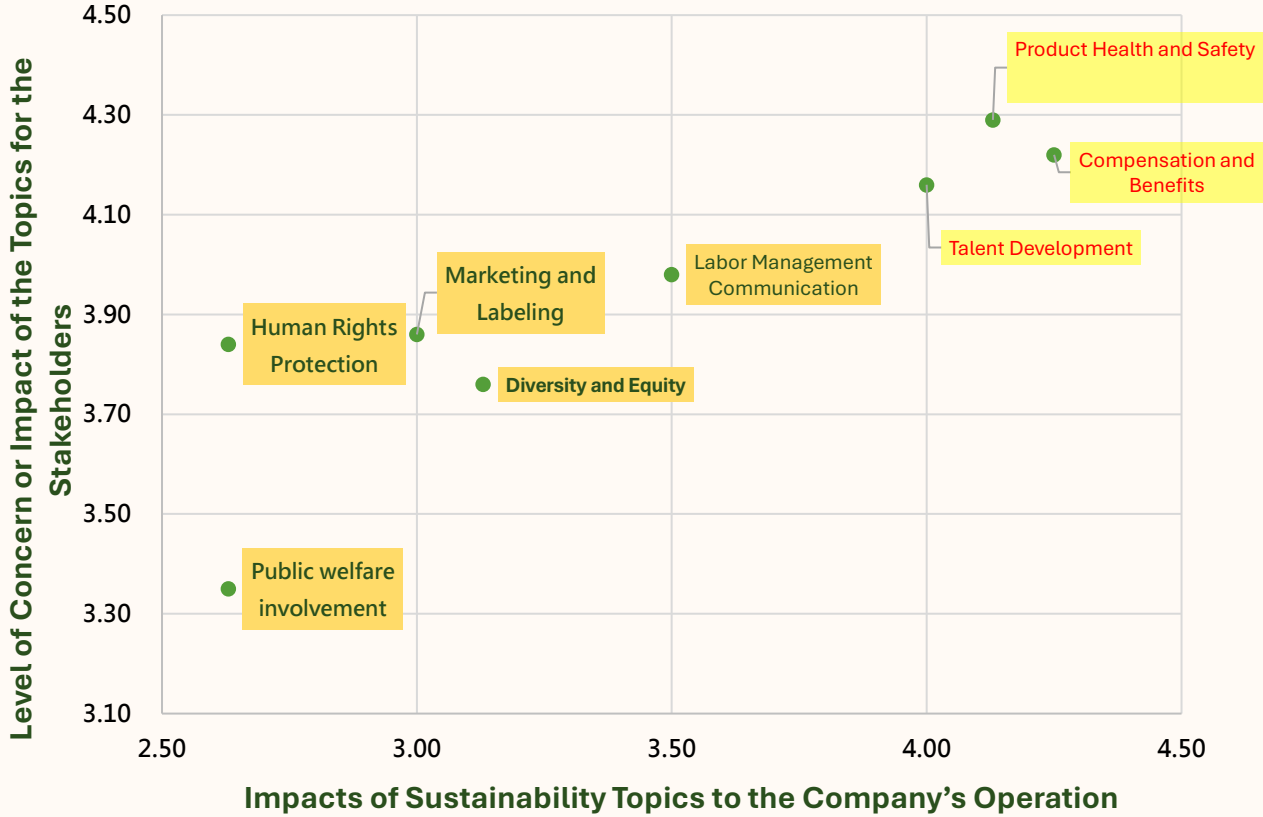


1.4 Identification of Material Topics

Lumosa 2024 ESG Material Topics – Environment



Lumosa 2024 ESG Material Topics – Social



1.4 Identification of Material Topics

Determination of Material Topics and Boundaries

Aspect	Material Topics	Positive Impact	Negative Impact	Actual/ Potential	Interior Boundaries		Exterior Boundaries		Sections Disclosed in the Report
					Company	Investors	Suppliers	Clients	
Corporate Governance	Operational Performance		V	Actual	●	●	●	●	3.5 Operational Performance
Corporate Governance	Innovation and R&D	V		Actual	●	●		●	3.6 Innovation and R&D
Corporate Governance	Safety of the Trial Participants	V		Actual	●	●		●	3.7 Safety of the Trial Participants
Corporate Governance	Drug Safety	V		Actual	●	●		●	3.8 Drug Safety
Social	Product Health	V		Actual	●	●		●	3.9 Product Health and Safety
Social	Compensation and Benefits	V		Actual	●				5.2 Talent Sustainability
Social	Talent Development	V		Actual	●	●			5.2 Talent Sustainability
Environmental	Laboratory Waste Management		V	Potential	●				4.3 Laboratory Waste Management

1.5 Correlation Between Sustainability Development Goals (SDGs)

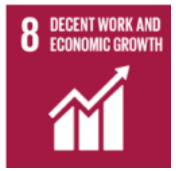
Lumosa has planned its sustainable development strategy in accordance with United Nation's Sustainable Development Goals (SDGs). Execution results for 2024 are shown below:

In Response to SDGs		Aspect	Sustainable Performance in 2024
	Make cities and human settlements inclusive, safe, resilient and sustainable; protect, restore and promote sustainable use of terrestrial ecosystems	Social prosperity	1. Participated in blood drive sponsored by Nangang Software Park 2. 33 People participated the Company-sponsored beach cleaning at Jinshan, on the northern coast of Taiwan. In all, 76.8 Kg (equivalent of 53.76 Kg CO_2)of trash was removed
	Ensure the physical and mental wellness of the employees	Occupational safety and health	1. Achieved zero work-place injuries, zero workplace fires and zero work-related illness for the year 2. Completed physical exam by the end of the year 3. No occupational safety and health related complaints were received during the year 4. New hires or employees changing positions must complete at least 3 hours of occupational safety and health training
	Promote the wellbeing of the employees	Compensation and benefits	1. Fully company-paid group insurance for all employees, covering multiple protection categories 2. Annual complimentary health exams for employees, with NT$4,000 allowance per person annually that can be accumulated and used over two years 3. Diverse employee recognition and care programs (including birthday bonuses, Labor Day bonuses, marriage bonuses, and childbirth bonuses) 4. Restricted stock options for employees, enabling staff to share in the Company's growth and operational achievements

1.5 Correlation Between Sustainability Development Goals (SDGs)

In Response to SDGs		Aspect	Sustainable Performance in 2024
	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Directors' intellect Talent development	1. Board directors completed a total of 57 hours of professional development, while the corporate governance officer completed 12 hours, meeting all regulatory requirements 2. Company employees completed a total of 221.44 hours of professional development, averaging 6.92 hours per employee 3. New employee skills training participation rate reached 100% 4. $5,000 Reimbursement per year to each employee for language courses 5. Employees are encouraged to attend international symposiums with company-provided registration fees and travel allowances; overseas conference attendees receive additional daily stipends, with five employees participating in international professional symposiums in 2024
	Achieve gender equality and empower all women and girls	Diversity and equality; equality in workplace	1. The Company ensures equal treatment in hiring, compensation and benefits, training opportunities, promotions, terminations, and retirement matters, prohibiting discrimination based on age, gender, disability, ethnicity, race, nationality, religion, or other personal status factors 2. The Company has set up a grievance system to uphold the rights of all employees
	Ensure access to affordable, reliable, sustainable and modern energy for all	Energy saving and carbon reduction	1. Replaced 9 sets of LED fixtures, saving 420 kWh electricity annually 2. Annual HVAC inspection in coordination with building management 3. Mandatory shutdown of personal computers after work hours 4. Unplugging devices after use or using energy-saving switches 5. One-hour lights-off policy during lunch break 6. Turning off lights after meetings

1.5 Correlation Between Sustainability Development Goals (SDGs)

In Response to SDGs		Aspect	Sustainable Performance in 2024
	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Labor-management relationship; labor rights	1. Robust communication channels for employee feedback 2. Four labor-management meeting held in 2024 3. Transparent decision-making and open dialogue with employees 4. No employee grievances reported in 2024
	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Innovations and R&D	1. Capital Allocation: Lumosa has invested approximately NT$322.86 million in 2024, earmarked specifically for clinical research and commercialization efforts targeting neurological disorders, inflammatory diseases, and oncology. 1. Technology Platform Development: The Company continues to invest in exosome technology, building a dedicated in-house team and fostering collaborations with academic institutions to advance platform capabilities. 1. Internal and External Collaboration: By leveraging the expertise of Contract Research Organizations (CROs) and academic research centers, Lumosa aims to accelerate development timelines and improve the probability of success across its R&D pipeline. 1. Commercial Partnerships: For marketed products such as Naldebain®, Lumosa is strengthening its relationships with international distribution partners to expand global market reach. For pipeline assets like LT3001, the Company is actively engaging with major global pharmaceutical firms. Following the anticipated End-of-Phase 2 (EOP2) meeting with the US FDA, Lumosa aims to secure a licensing agreement with a multinational partner.

1.5 Correlation Between Sustainability Development Goals (SDGs)

In Response to SDGs		Aspect	Sustainable Performance in 2024
	Ensure sustainable consumption and production patterns	Product responsibility	1. Drug Safety: Lumosa is committed to full compliance with Good Manufacturing Practice (GMP) and Good Distribution Practice (GDP) standards, ensuring that drug quality is rigorously monitored throughout the entire lifecycle—from research and development to production and distribution. These measures are designed to mitigate the risk of counterfeit products and safeguard patient safety. The Company adheres to all applicable pharmaceutical regulations and international standards, and is prepared to respond swiftly and decisively in the event of a product recall. 2. Product Health and Safety: Product health and safety is a core value at Lumosa. This is especially critical for Naldebain®, the company's long-acting injectable analgesic, which is available by prescription. Ensuring its safety, efficacy, and consistent quality is central to Lumosa's pharmaceutical stewardship. 3. Lumosa's Commitment: Lumosa has established stringent Standard Operating Procedures (SOPs) in accordance with pharmaceutical regulatory frameworks. These SOPs span every stage of the product lifecycle—from R&D and manufacturing to market launch and post-market surveillance. The Company complies with international standards including GMP, Good Clinical Practice (GCP), and guidelines set by the International Council for Harmonization (ICH). A robust pharmacovigilance system is in place to monitor and assess drug safety risks on an ongoing basis. Regular employee training and supply chain audits are conducted to strengthen technical expertise and operational excellence in product safety.

1.5 Correlation Between Sustainability Development Goals (SDGs)

In Response to SDGs		Aspect	Sustainable Performance in 2024
	Take urgent action to combat climate change and its impacts	Sustainable environment	1. Carbon Reduction and Energy Efficiency: Lumosa is committed to carbon reduction and has embedded sustainability into its core business strategy. As the Company's greenhouse gas emissions primarily stem from Scope 2 purchased electricity, efforts have been concentrated on improving energy efficiency. A range of energy-saving initiatives have been implemented to reduce overall consumption. The Company conducts annual greenhouse gas inventories and uses the findings to refine its emissions reduction strategies. This data-driven approach ensures that mitigation measures are both targeted and adaptable to evolving environmental demands. 2. Proactive Climate Action Despite Low Emissions Profile: While Lumosa is not a major emitter or energy consumer, it embraces a responsible stance on climate issues. The Company actively promotes green transformation in collaboration with its workforce. Looking ahead, Lumosa will continue to advocate for energy efficiency and pursue more environmentally sustainable operations, aiming to set a benchmark for sustainability within the industry. The Company remains steadfast in its commitment to achieving net-zero emissions and contributing to the protection of the planet.
	Protect, restore and promote sustainable use of terrestrial ecosystems	Waste and plastic reduction	Reducing disposable plastics through employee engagement

1.5 Correlation Between Sustainability Development Goals (SDGs)

In Response to SDGs		Aspect	Sustainable Performance in 2024
	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Corporate governance; integrity management	1. Commitment to Information Transparency: Lumosa is committed to maintaining transparency and open communication with all stakeholders. The company's official website features dedicated sections for Investor Relations, Corporate Governance, Corporate Social Responsibility, and Stakeholder Engagement, offering multiple channels for dialogue and disclosure. 2. No Legal or Regulatory Violations in 2024: In 2024, Lumosa reported no incidents of legal or regulatory non-compliance, nor were there any stakeholder complaints filed during the year. 3. Timely and Compliant Material Disclosures: All material information was disclosed in accordance with regulatory requirements, with no violations recorded.

1.5 Correlation Between Sustainability Development Goals (SDGs)

In Response to SDGs		Aspect	Sustainable Performance in 2024
	Strengthen the means of implementation and revitalize the global partnership for sustainable development	Sustainable supply chain	1. End-to-End Quality Control in Pharmaceutical Manufacturing: Lumosa exercises rigorous oversight of product quality, beginning with the selection of active pharmaceutical ingredient (API) suppliers and extending through to contract manufacturing partners. The Company conducts on-site audits to verify compliance and ensure product integrity. All contract manufacturers must meet either Taiwan's regulatory standards or international benchmarks, including PIC/S GMP and ICH guidelines. Additionally, these facilities must pass inspections by local health authorities before products can be exported. Lumosa upholds stringent quality standards to meet societal expectations and fulfill its corporate social responsibility to patients. 2. Supplier Performance and Risk Management: In accordance with its internal "Quality Assurance Process for Commissioned Activities," Lumosa conducts periodic performance evaluations and quality risk assessments of its suppliers. Evaluation criteria include operational performance, manufacturing quality, and production controls. Suppliers with subpar ratings are subject to audits and corrective guidance, while high-risk vendors are placed under continuous improvement and monitoring protocols. 3. Sustainability Integration in Supplier Management: In 2024, Lumosa completed the design of its Supplier Sustainability Questionnaire. The Company plans to distribute the survey in 2025 to both new and existing suppliers as part of its performance evaluation and risk assessment process. This initiative aims to ensure that all suppliers align with Lumosa's standards for quality, delivery, cost, and sustainability.

Chapter

2

About Lumosa

2.1 Company Introduction

On June 20, 2014, SunTen Phytotech, Cheng Pang Biopharma and BroadCan Biopharm, merged to form a new drug development company, with SunTen Phytotech being the surviving company and name change to Lumosa Therapeutics Co., Ltd. Through the integration of new drug development resources and talents, leveraging industrial synergies to accelerate new drug development and marketing process. Under the leadership of Mr. Jung Chin Lin, Lumosa underwent a strategic revitalization. With a merger with TPG Biologics to gain entry into biological new drugs. The combined entity has since pursued a strategy of in-licensing promising early-stage drug candidates, positioning itself as a key drug development platform for academic institutions and corporate partners. In 2024 Center Laboratories substituted Ms. Su Chi Wang as the new chairperson for the Company, and appointed Dr. Sheng Wen Yeh, Director of Preclinical Development Department as the President.

The strategy employed by Lumosa team is to build value into its drug candidates, then pursue strategic out-licensing agreements with global pharmaceutical firms at appropriate timing. Revenue from these collaborations primarily consist of upfront payments, milestone payments tied to developmental and regulatory progress, and royalties on future sales. The specific terms of these licensing deals will vary depending on the partnership structure and the territories covered.

To strengthen the Company’s long-term competitiveness, Lumosa is actively developing innovative therapeutic platforms. Beyond its current product portfolio, the Company is investing in cutting-edge technologies through various approaches including investments and licensing agreements. This includes a joint investment with Center Laboratories Co., Ltd., to establish Cytoengine Co, Ltd., introducing innovative induced exosome technology that aims to provide breakthrough treatment solutions for currently untreatable neurological disorders, thereby creating a sustainable business model for the Company.

2.1 Company Introduction

Company Name	Industrial Category	Location
Lumosa Therapeutics Co., Ltd.	Biotechnology	4F, No. 3-2, Park Street, Nangang District, Taipei, Taiwan

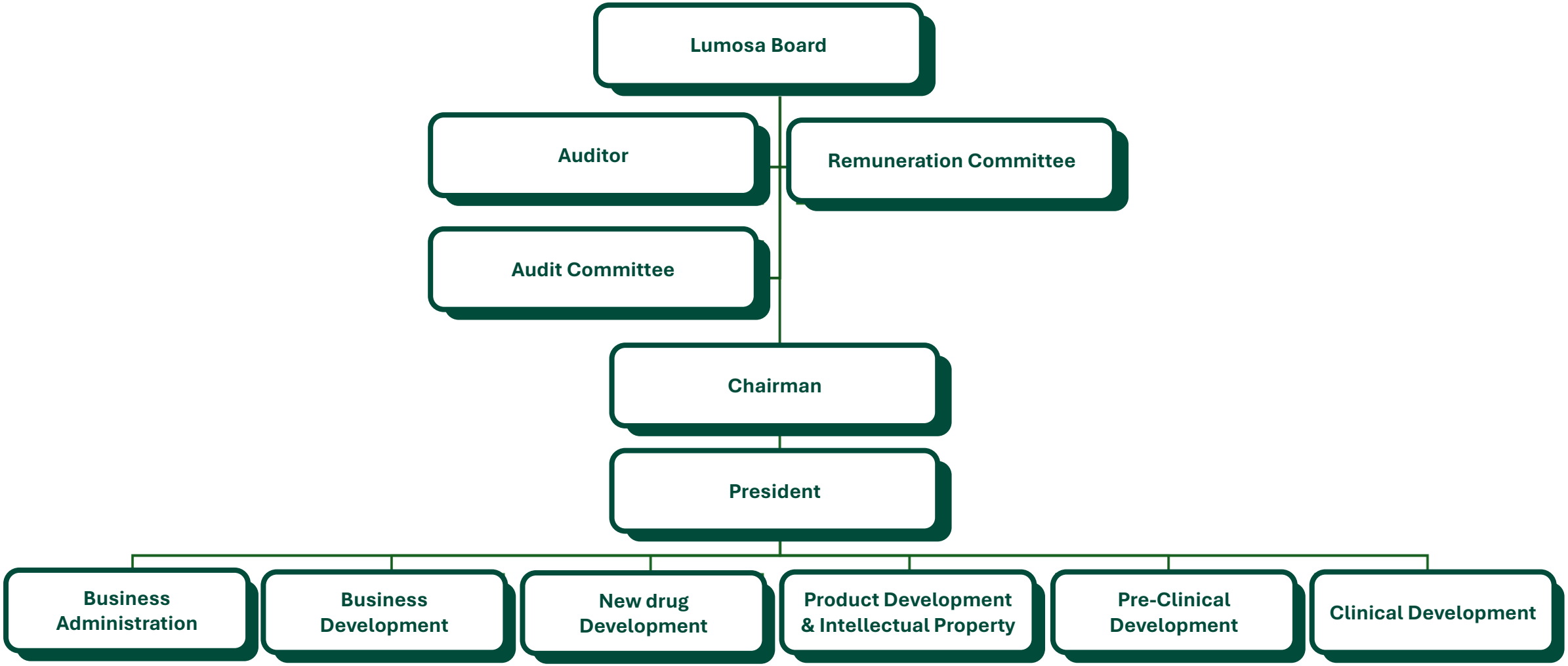
Capital in 2024	Revenue in 2024	Major Products and Services
1,688,968 Thousand New Taiwan Dollars	39,154 Thousand New Taiwan Dollars	LT1001 – Extended-release Analgesic Injection LT3001 – Novel Therapy for Acute Ischemic Stroke LT6001 – Induced Exosome Technology

Lumosa's Industry Chain

The drug development process is lengthy, encompassing multiple stages from discovery to development. This includes identifying therapeutic targets, candidate drug testing and screening, new drug formulation and process development validation, preclinical animal pharmacology and toxicity studies, and clinical trials (pharmacokinetics, metabolism, safety, and efficacy). Each of these components is essential in the biotech pharmaceutical drug development timeline.

New drug development resembles a relay race where each segment generates capital value. Upstream and downstream collaboration creates the complete value chain of the biotech pharmaceutical industry. Industry value chain partnerships and strategic alliances between enterprises further enhance overall industry competitiveness. Lumosa's industry relationship diagram is shown below:

2.2 Organization



2.3 External Organization Participation

In addition to sharpening the competitive edge of its product portfolio, Lumosa actively engages with stakeholders across sectors. Through participation in industry associations, the Company fosters constructive dialogue with fellow members and stays attuned to the latest developments shaping the pharmaceutical landscape.

Member Innovative Bio-manufacturing Development Consortium (IBDC)	**Member** Taiwan Research-based Biopharmaceutical Manufacturers Association (TRPMA)	**Member** Taiwan Society of Regulatory Affairs for Medical Products (TSRAP)
Member Taiwan Society for Extracellular Vesicles (TSEV)	**Member** Taiwan Bio Industry Organization (TBIO)	**Member** GS1 Taiwan Council
Member Taiwan Clinical Research Association (TCRA)	**Member** Drug Impurities/Metabolites and Chinese Herbal Medicine Components Structural Identification Alliance	**Member** Taiwan Parenteral Drug Association (TPDA)

2.4 Corporate Achievements

The 2015 National Innovation Award

Lumosa received the 2015 National Innovation Award for the development of LT1001 (Naldebain®), the first long-acting intramuscular analgesic injection. LT1001 features an extended-release formulation which provides up to 7-day analgesic effect, low side effects, and low risk of addiction. The product is designed to effectively elevate patient quality of life and reduce the burden of healthcare professionals. This award not only recognized the development and the technical capabilities of Lumosa team, but also encouraged those who were involved in the project.

Bronze Medal, the 2015 Drug Research and Development Science and Technology Award

Lumosa received the Bronze Award of the Drug Research and Development Science and Technology Award for its LT1001, an extended-release analgesic injection designed to effectively elevate patient quality of life and reduce the burden of healthcare professionals. During the R&D process, Lumosa not only demonstrated the efficacy and safety of its long-acting analgesic through Phase III clinical trials, but also successfully resolved challenges related to process scale-up and validation for both the active pharmaceutical ingredient and formulation.

The 2016 Biotech Potential Benchmark Award and Bronze Medal in the innovation category of the 2016 Taipei Biotechnology Award

Lumosa was awarded the 2016 Biotech Potential Benchmark from the Bioindustry Association and Bronze Medal in the innovation category of 2016 Taipei Biotechnology Award from Taipei City Government.

Chapter

3

Responsible Governance

3.1 Governance Practices

Lumosa has established a comprehensive corporate governance framework in accordance with the Company Act, the Securities and Exchange Act, and other applicable regulations. In line with the "Corporate Governance Best-Practice Principles for TPEx-Listed Companies," the Company has adopted its own "Corporate Governance Best-Practice Principles," which are publicly disclosed on the Market Observation Post System and the Company's official website.

The Board of Directors exercises its authority in accordance with legal requirements, the Company's Articles of Incorporation, and resolutions passed by shareholders. It is responsible for guiding corporate strategy, overseeing management, and acting in the best interests of the Company and its shareholders.

In addition to complying with the Securities and Exchange Act, Lumosa's directors and employees adhere to a suite of internal governance policies, including the "Corporate Governance Best-Practice Principles," "Ethical Corporate Management Best Practice Principles," "Code of Ethical Conduct for Directors, Supervisors, and Managers," "Procedures for Ethical Management and Guidelines for Conduct," "Whistleblowing Procedures for Violations of Ethical Conduct," and the "Material Information and Insider Trading Prevention Policy."

To reinforce compliance, Lumosa conducts at least one annual training session for directors, executives, and employees on the management of material information and the prevention

Corporate Governance Achievements in 2024

- Ranked in the 36%–50% Tier in the 11th Corporate Governance Evaluation for TPEx-listed companies.
- Board and Committee Performance Rated as Excellent.
- Directors Logged a Total of 57 Training Hours, significantly exceeding regulatory requirements—underscoring Lumosa's commitment to strengthening governance practices.
- Corporate Governance Officer Completed 12 Hours of Training, reinforcing internal governance capabilities.
- Achieved Set Targets Under Board Diversity Policy:
  1. Independent directors account for **44%** of board seats—well above the statutory minimum.
  2. No directors concurrently serve as company executives, in full compliance with regulatory standards.
  3. All independent directors have served fewer than three consecutive terms.

Lumosa corporate bylaws

3.1 Governance Practices

The Board of Directors

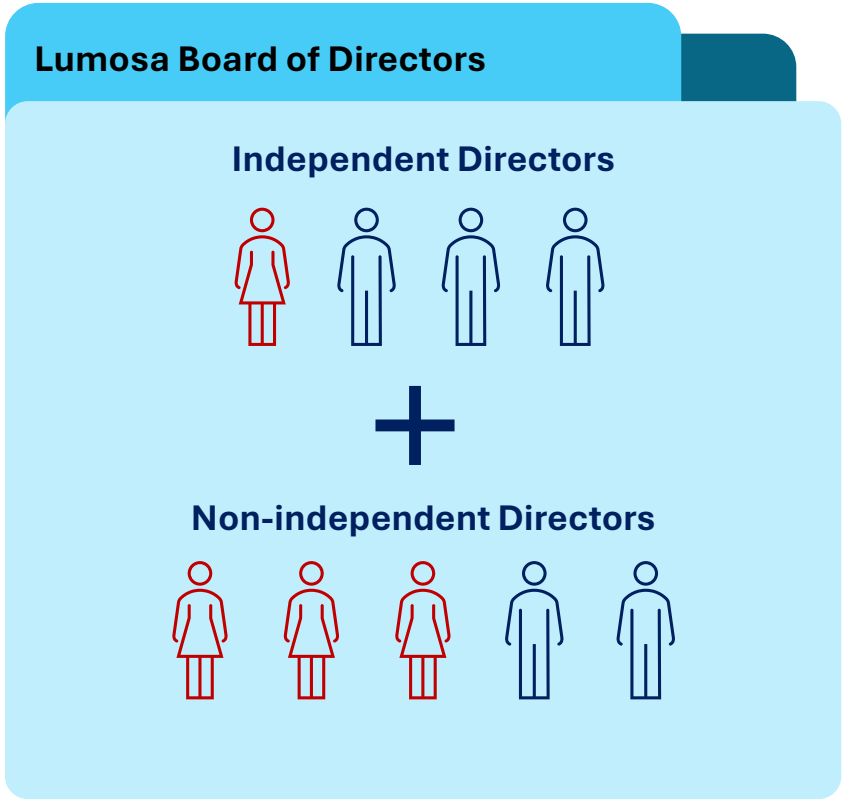
The Board of Directors serves as Lumosa's highest governing authority and operates in accordance with the Company's "Rules of Procedure for Board Meetings." To enhance the effectiveness of the Board's oversight functions, Lumosa has established both an Audit Committee and a Remuneration Committee, ensuring a well-structured division of responsibilities.

Board Composition and Director Nomination Policy

The Company's Articles of Incorporation stipulate that directors are elected through a candidate nomination system, with regular re-elections held in accordance with applicable regulations. In forming the Board, the Company considers diversity as well as the necessary industry expertise, skills, and professional integrity required for effective governance.

Independent directors are not expected to serve more than three consecutive terms. Their appointments are made with careful consideration of a balanced professional composition and the objective conditions necessary to ensure their independence in fulfilling fiduciary duties.

Lumosa conducted a complete re-election of nine directors on May 2, 2024, including four independent directors. The Board of Directors have elected Ms. Su-Chi Wang as the Chairperson. The Company's board of directors primarily consists of members aged 61 to 70 (5 directors), with 2 directors under 60 and 2 directors over 70. In terms of gender distribution, there are 5 male directors and 4 female directors. Two independent directors have served for less than three years. The diversity policy of the board is implemented.



3.1 Governance Practices

Diversified core / Name	Basic Component								Industry Experience			Professional Ability		
	Citizenship	Gender	Employee status	Age			Independent Directors' term of office		Healthcare	Medicine	Management	Legal	Accounting	Risk Management
				< 60 yrs	61~70 yrs	>71 yrs	<3 yrs	6~9 yrs						
Su-Chi Wang, rep. of Center Laboratories, Inc.	ROC	female	-	✓	-	-	-	-	-	-	✓	-	✓	-
Wan Lai Cheng, rep. of Center Laboratories, Inc.	ROC	male	-	-	✓	-	-	-	-	-	✓	-	-	-
Chia-Ling Lin, rep. of BioEngine Technology Development Inc.	ROC	female	-	✓	-	-	-	-	-	-	✓	-	-	✓
De Fu Hsieh, rep. of Shun Cheng Pharmaceutical Co., Ltd.	ROC	male	-	-	-	✓	-	-	-	✓	✓	-	-	-
Hsueh Ling Wang	ROC	female	-	-	✓	-	-	-	-	✓	✓	-	✓	-
Chih Yung Chin	ROC	male	-	✓	-	-	-	-	-	-	✓	-	✓	-
Chih Hsiung Wu	ROC	male	-	-	✓	-	-	-	✓	-	✓	-	-	-
Hai I Ma	ROC	female	-	-	-	✓	✓	-	-	-	✓	-	-	-
Hsin-Jung Lin	ROC	male	-	-	✓	-	✓	-	✓	-	✓	-	-	-

Note 1: The Board of Directors was fully re-elected on 2024.05.02 and Mr. Jung Chin Lin was elected as the chairperson.
Note 2: Center Laboratories Inc., Ltd. substituted its corporate director with Ms. Su-Chi Wang on 2024.05.14, taking over Mr. Jung Chin Lin's position on the Board. On the same day, the Board of Directors elected Ms. Wang as the new chairperson.
Note 3: BioEngine Technology Development Inc., substituted its corporate director with Ms. Chia-Ling Lin on 2024.05.14, taking over Ms. Su-Chi Wang's position on the Board.

3.1 Governance Practices

Board Operations

Each term of the Board at the Company spans three years. In accordance with legal requirements, the Board convenes at least once per quarter to set operational strategies, review performance, and assess business risks and opportunities. In 2024, the Board held a total of 12 meetings, with an average director attendance rate of 89%. No complaints were received that had a material impact on the Company's operations or financial affairs.

Recusal Practices for Directors and Independent Directors in Conflict-of-Interest Matters

The Company enforces strict self-regulation among its directors to uphold conflict-of-interest standards. When a matter under discussion involves a director's personal interest or that of the corporate directorship they represent, the director is required to disclose the nature and significance of the conflict. They must recuse both the discussion and the vote, and are prohibited from exercising voting rights on behalf of other directors.
Details of the implementation in 2024 are available on the Company's official website.

3.1 Governance Practices

Title	Name	No. of meetings attended in person (B)	No. of meetings attended by proxy	In-person attendance rate (%) (B/A) (Note 2)	Remarks
Chairperson	Center Laboratories, Inc., rep. by Jung Chin Lin	5	5	100%	Dismissed 2024.05.14 (Note 1)
Chairperson	Center Laboratories, Inc., rep. by Su-Chi Wang	7	6	86%	Substituted Mr. Jung Chin Lin and elected as the Chairperson 2024.05.14 (Note 2)
Director	Center Laboratories, Inc., represented by Wan Lai Cheng	12	10	83%	
Director	BioEngine Technology Development Inc., represented by Su-Chi Wang	5	5	100%	Dismissed 2024.05.14
Director	BioEngine Technology Development Inc., represented by Chia-Ling Lin	7	6	86%	Substituted Ms. Su-Chi Wang 2024.05.14 (Note 3)
Director	Shun Cheng Pharmaceutical Co., Ltd., represented by De Fu Hsieh	12	12	100%	
Director	Chung Hao Tasi	4	3	75%	Dismissed 2024.05.14
Director	Hsueh Ling Wang	12	11	92%	
Ind. Director	Chih Yung Chin	12	12	100%	
Ind. Director	Chih Hsiung Wu	12	11	92%	
Ind. Director	Hai I Ma	12	12	100%	
Ind. Director	Hsin-Jung Lin	12	7	58%	

Note 1: The Board of Directors was fully re-elected on 2024.05.02 and Mr. Jung Chin Lin was elected as the chairperson.
Note 2: Center Laboratories Inc., Ltd. substituted its corporate director with Ms. Su-Chi Wang on 2024.05.14, taking over Mr. Jung Chin Lin's position on the Board. On the same day, the Board of Directors elected Ms. Wang as the new chairperson.
Note 3: BioEngine Technology Development Inc., substituted its corporate director with Ms. Chia-Ling Lin on 2024.05.14, taking over Ms. Su-Chi Wang's position on the Board.

3.1 Governance Practices

Continuing Education for the Directors

The Company enforces strict self-regulation among its directors to uphold conflict-of-interest standards. When a matter under discussion involves a director's personal interest or that of the corporate directorship they represent, the director is required to disclose the nature and significance of the conflict. They must recuse both the discussion and the vote, and are prohibited from exercising voting rights on behalf of other directors. Details of the implementation in 2024 are available on the Company's official website.

Title	Name	Date	Course Title	Hr
Chairperson	Su Chi Wang	2024/07/09	"AI Strategy and Governance" for TPEx-Listed Companies	3
		2024/09/10	Insider Equity Holdings Compliance Seminar for TPEx and Emerging Stock Market Companies	3
Director	Wan Lai Cheng	2024/08/01	Corporate Governance Enhancement Through Case Studies: Food and Environmental Safety	3
		2024//8/01	ESG and Corporate Sustainability	3
Director	De Fu Hsieh	2024/08/13	Carbon Trading Mechanisms and Carbon Management Applications	3
		2024/11/12	Global Economic Outlook 2025	3
Director	Chia Ling Lin	2024/09/10	Insider Equity Holdings Compliance Seminar for TPEx and Emerging Stock market Companies	3
		2024/09/12	Insider Trading Case Studies and Legal Liabilities	3
Director	Hsueh Ling Wang	2024/10/14	Greenhouse Gas Management Systems and Regulatory updates	3
		2024/11/04	Money Laundering Patterns and Tax Fraud Analysis for CPSs	3
Ind. Director	Chih Yung Chin	2024/08/12	Comprehensive Analysis of Domestic and International M&A Practices	3
		2024/09/12	Business Cycles and Industry Trends	3
Ind. Director	Chih Hsiung Wu	2024/09/18	2024 ESG Summit: Professional Course on Net-Zero Solutions and Sustainable Future	6
Ind. Director	Hai I Ma	2024/02/15	Corporate Governance and Securities Regulations	3
		2024/05/10	Investment Perspectives: ESG Financing and Corporate Sustainability Transformation	3
		2024/05/13	Top-Down Corporate Sustainability Risk Management and Strategic Response	3
Ind. Director	Hsin-Jung Lin	2024/09/20	Trade Secrets, Information Security Practices, and Securities Regulations	3
		2024/10/18	Brand Communication and Stakeholder Management	3

3.1 Governance Practices

To strengthen risk management and encourage professionals to serve on the Board, the Company provides annual directors' liability insurance. This coverage helps mitigate potential legal and financial exposure during the execution of their duties, reducing the risk of significant losses to the Company and its shareholders.

Image by Mohamed Hassan from Pixabay

Appointment and Training of Corporate Governance Officer

On May 12, 2023, the Board approved the appointment of Ms. Lan-Ying Huang from the Department of Business Administration as the Company's Corporate Governance Officer. In 2024, she completed 12 hours of continuing education, in full compliance with regulatory requirements.

Date	Sponsor	Course Title	Hrs
2024/9/18	Accounting Research and Development Foundation	2024 ESG Summit: Net Zero All-Round for Sustainable Future	6
2024/11/14		Latest ESG Policy and Net-Zero Carbon Regulations: Practical Implications for Financial Reporting and Annual Report Preparation	6

3.1 Governance Practices

Functional Committee

Except where required by law to act independently, each functional committee is accountable to the Board. Committees are responsible for providing recommendations to the Board and submitting proposals for its review or discussion.

Audit Committee Operations

The Company's Audit Committee is composed of four independent directors, including one serving as convener. Two members possess expertise in accounting or finance. The first term of the committee is 7/7/2021 – 7/6/2024, and the second term of the committee is 5/2/2024 – 5/1/2027. The committee meets at least once per quarter and convened 10 times in 2024, with an average attendance rate of 88%.

Title	Name	No. of meetings attended in person (B)	No. of meetings attended by proxy	In-person attendance rate (%) (B/A)
Independent Director (Convener)	Chih Yung Chin	10	10	100%
Independent Director	Chih Hsiung Wu	10	9	90%
Independent Director	Hai I Ma	10	10	100%
Independent Director	Hsin-Jung Lin	10	6	60%

Remuneration Committee Operations

The Company's Remuneration Committee is composed of three independent directors, and all concurrent roles follow regulatory requirements. The fourth term is 7/7/2021 – 7/6/2024, and the fifth term is 5/2/2024 – 5/1/2027. The Remuneration Committee is required to meet at least twice annually. In 2024, it was convened five times, with an average attendance rate of 93%.

Title	Name	No. of meetings attended in person(B)	No. of meetings attended by proxy	In-person attendance rate (%) (B / A)
Independent Director (Convener)	Chih Hsiung Wu	5	4	80%
Independent Director	Chih Yung Chin	5	5	100%
Independent Director	Hai I Ma	5	5	100%

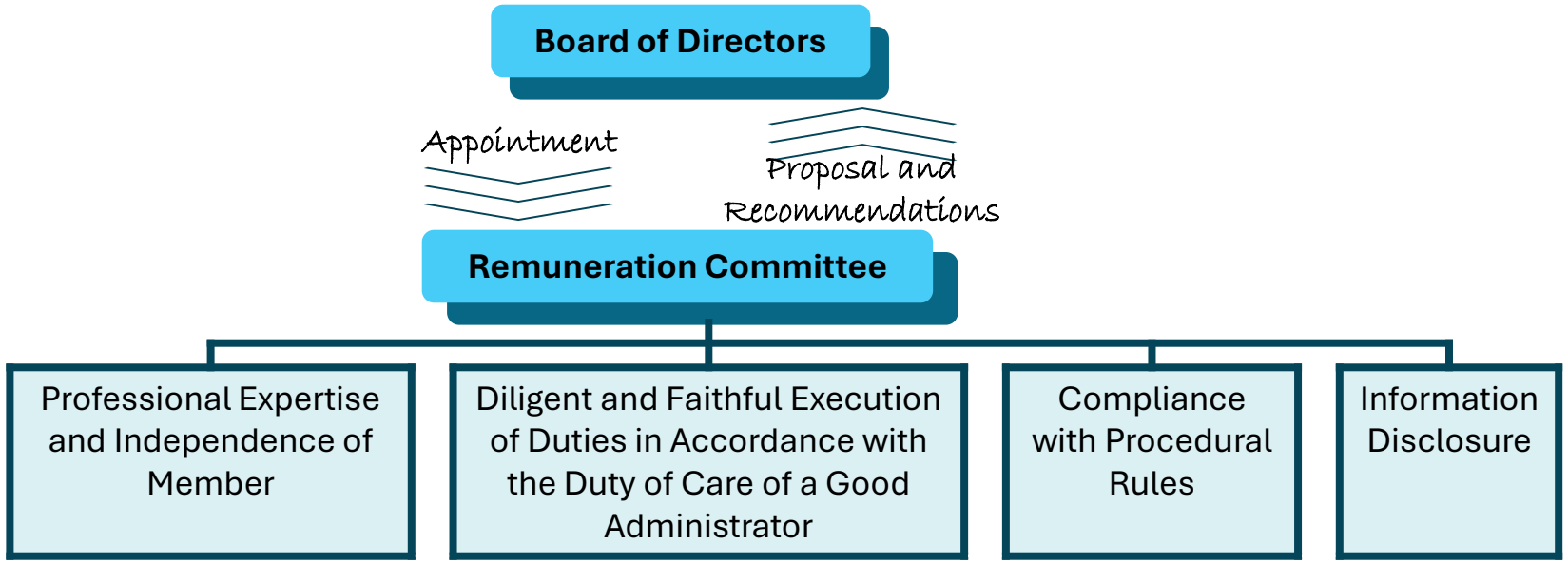
3.1 Governance Practices

The primary responsibilities of the Remuneration Committee include establishing and regularly reviewing the policies, systems, standards, and structures for performance evaluation and compensation of directors and managerial officers. The Committee also periodically assesses and, as needed, reviews the remuneration of directors (including the Chairperson) and managerial officers (including the CEO, Executive Vice Presidents, and equivalent positions), taking into account the Company's goals, operational performance, and market competitiveness.
Director compensation is determined based on the profit-sharing mechanism outlined in the Company's Articles of Incorporation. Managerial compensation consists of a monthly salary and performance bonuses. The Company does not offer signing bonuses or recruitment incentives. Severance and retirement benefits for managerial officers are aligned with those provided to general employees.

Image by ar130405 from Pixabay

3.1 Governance Practices

Remuneration Decision Process



Powers and Responsibilities of the Remuneration Committee	1. To establish and regularly review the performance evaluation criteria, annual and long-term performance goals, and the policies, systems, standards, and structures for the remuneration of directors and managerial officers. 2. To periodically assess the achievement of performance goals by directors and managerial officers, and to determine the content and amount of individual remuneration based on the results of such evaluations.
Remuneration Consultants	The Remuneration Committee may, by resolution, engage legal counsel, accountants, or other professionals to conduct necessary audits or provide advisory services related to the exercise of its duties.
Meeting frequency	At least 2 meetings each year.

3.1 Governance Practices

Performance Evaluation of the Board of Directors, Directors and Functional Committees

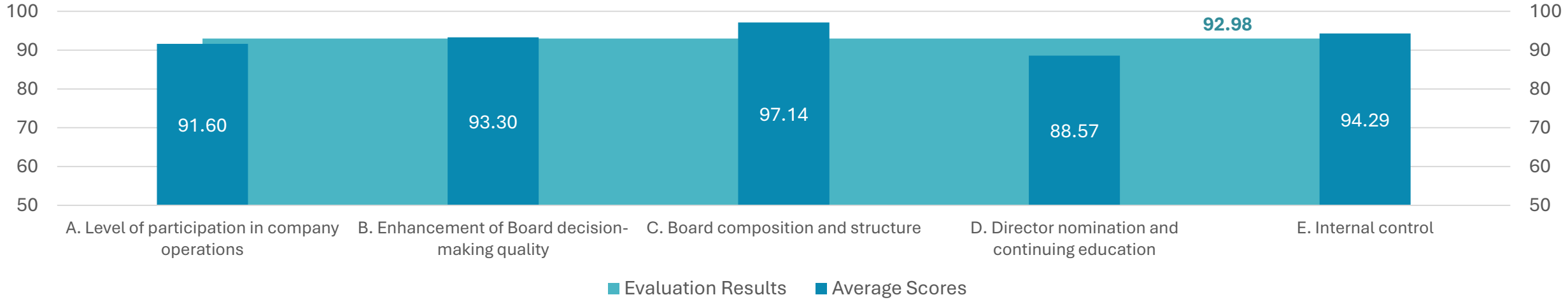
In accordance with the "Board Performance Evaluation Policy," the Board conducts internal evaluations annually and engages an external institution to perform evaluations at least once every three years. The 2024 evaluation results were rated as "Excellent," indicating that the Board's operations align with corporate governance standards.

Performance Evaluation for the 2024 Board of Directors and Functional Committees

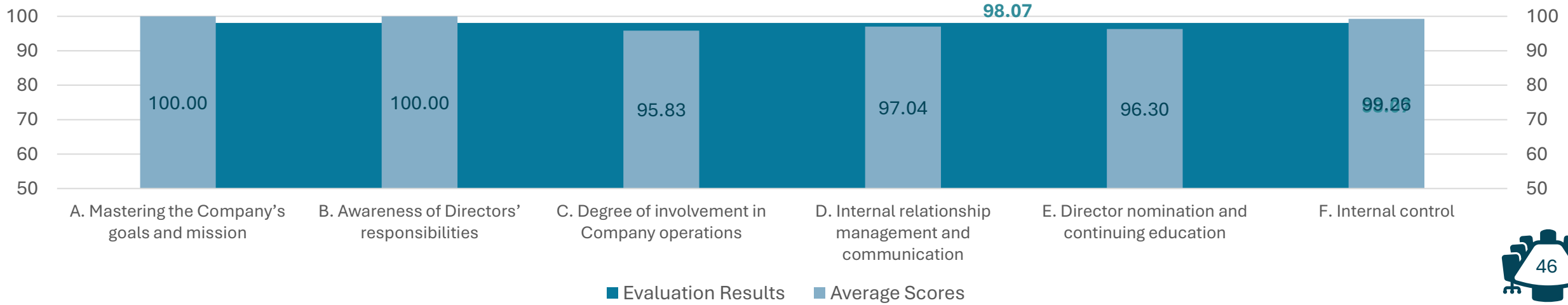
Self-Evaluation of the Board	92.89
Self-Evaluation of the Audit Committee	98.10
Self-Evaluation of the Board Members	97.56
Self-Evaluation of the Remuneration Committee	98.18

3.1 Governance Practices

Self-evaluation result on the performance of the 2024 Board of Directors

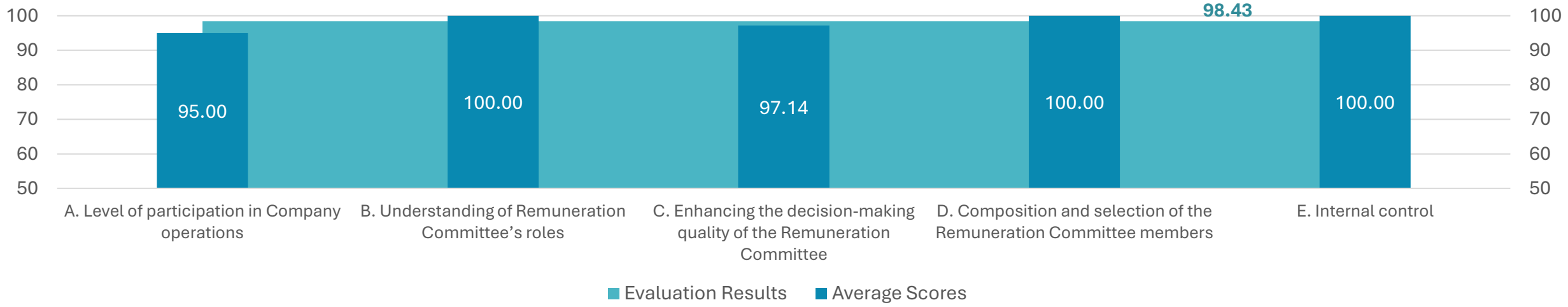


Self-evaluation result on the performance of the 2024 Board Members

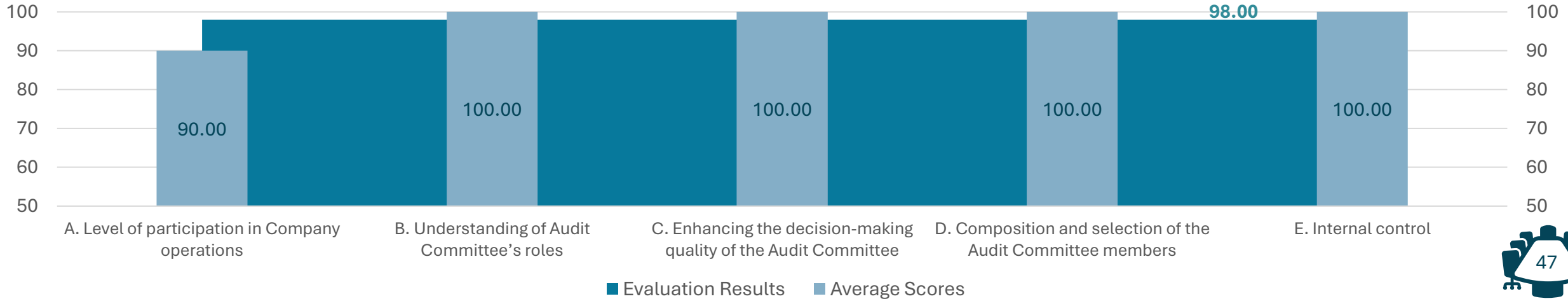


3.1 Governance Practices

- **Self -evaluation result on the performance of the 2024 Remuneration Committee**



- **Sel f-evaluation result on the performance of the 2024 Audit Committee**



3.1 Governance Practices

- **Internal Audit Process**

1. Formulate the annual audit plan
2. Submit to the Audit Committee and the Board for review and approval
3. Plan and execute audit operations
4. Communicate audit findings with the audited departments and provide recommendations
5. Compile working papers and relevant materials to prepare the audit report
6. Deliver the audit report to the audited departments
7. Follow up after reporting
8. Regularly report audit activities and implementation status to senior management, the Audit Committee, and the Board
9. Incorporate audit recommendations into the focus and scope of the following year’s audit plan

3.1 Governance Practices

Internal Audit Performance Review

Each year, the Company's Audit Office conducts audits across the eight core operational cycles of the internal control system: procurement and payment, sales and collection, payroll, production, fixed assets (including property, plant, and equipment), financing, investment, and information security. The audit scope includes all Company departments, including divisions like Business Development, Preclinical, Clinical, New Drug Development, Product Development and Intellectual Property, and Business Administration.

In 2024, audit priorities were determined based on risk assessments and statutory requirements, focusing on control procedures within key operational cycles and regulatory compliance. A total of 51 audit reports were issued during the year. No material deficiencies requiring corrective action were identified. All audited departments were promptly notified and took appropriate remedial measures based on the recommendations. The Audit Office continues to monitor the implementation of these improvements. Annual internal control declarations are available on the Market Observation Post System (MOPS).

2024 Audit Priorities

1	Derivatives trading audits (monthly)	5	Related-party transactions and subsidiary oversight audits	9	Investment and financing cycle audits
2	Audits of intercompany lending and guarantees (quarterly)	6	Sales and collection cycle audits	10	R&D cycle audits
3	Functional committee operations audits (Board of Directors / Audit Committee / Remuneration Committee)	7	Procurement and payment cycle audits	11	Follow-up on irregularities and assignments from senior management
4	Financial reporting and information security audits	8	Production and fixed assets cycle audits	12	Annual self-assessment procedures

3.2 Risk Management

The Board serves as the highest governing body for risk management, responsible for approving the Company's risk management policies and framework, and overseeing their implementation. A Risk Management Committee has been established, chaired by the President, with each department responsible for advancing risk management initiatives within its scope of authority.

- **Risk Management Process**

Risk Identification

Members of the Risk Management Committee identify risk sources across environmental, social, and governance (ESG) dimensions, taking into account the Company's strategic business objectives.

Risk Analysis and Assessment

Risk factors are evaluated based on their likelihood and potential impact, considering current environmental and resource conditions.

Risk response

Intolerable risks are identified, and corresponding risk mitigation strategies are formulated.

Risk Oversight and Review

The Risk Management Committee reviews and determines material risk items, requiring operating units to implement appropriate countermeasures. An annual report on the execution of the risk management plan is submitted to the Board.

3.2 Risk Management

- **Risk Management Process**

Risk Item	Impact Indicators	Potential Cause and Impacts	Mitigation Measures
Operational Performance	Market volatility, intense competition, resource shortages, and supply chain bottlenecks may reduce operational efficiency	May undermine financial stability and limit investment in innovation and R&D	1. Market trend analysis and competitor monitoring 2. Diversified supply chain strategy 3. KPI-based performance evaluation
Financial Risk	Includes exchange rate fluctuations, cash flow shortages, and overdue receivables.	May constrain capital operations and limit R&D or expansion capabilities.	Strengthen cash flow management and regularly review fund allocation
Information Security	Cyberattacks, data breaches, or system outages.	Legal liabilities, reputational damage, and operational disruption.	1. Enhance IT security systems 2. Data encryption and access control 3. Ongoing security awareness training
Industry & Technology Shifts	Rapid tech changes or shifting market demand.	Risk of product obsolescence and loss of market share.	1. Ongoing market and tech trend analysis 2. R&D spending >80% of operating expenses annually
Trade Secrets	Leakage of R&D data, formulas, or business plans.	Loss of competitive edge, revenue decline, and long-term competitiveness.	1. NDAs and confidentiality training 2. Tiered access controls 3. Zero leakage incidents target
R&D Effectiveness	Drug development failure, clinical trial delays, or unmet efficacy expectations.	Investment losses, market value decline, and missed opportunities.	1. Milestone-based R&D evaluation 2. Strengthen preclinical testing 3. Diversified R&D pipeline 4. Collaborate with academia and hospitals 5. Deepen disease area expertise

3.2 Risk Management

- **Risk Management Process**

Risk Item	Impact Indicators	Potential Cause and Impacts	Mitigation Measures
Human Capital	Loss of key talent, unstable R&D teams, or hiring challenges.	Delays in R&D, knowledge gaps, morale issues, and rising costs.	1. Competitive compensation 2. Employee stock ownership plans 3. Professional training programs 4. Improve work environment and benefits
Intellectual Property	IP leakage, patent disputes, or weak IP protection.	Legal costs, loss of commercialization rights, and reduced competitiveness.	1. Comprehensive patent strategy 2. Regular patent analysis 3. Confidential information management 4. IP risk assessments 5. Enforce NDAs
Regulatory Compliance	Licensing failures, regulatory changes, or documentation issues.	Product launch delays, added compliance costs, and reputational damage.	1. Monitor regulatory changes 2. Strengthen quality systems 3. Regular compliance assessments
Adverse Reactions in Trials	Serious adverse events (SAEs), unexpected side effects, or long-term safety concerns.	Trial suspension, reputational harm, legal risks, and development delays.	1. Safety monitoring systems 2. Pre-trial risk assessments 3. Emergency response protocols
Informed Consent	Incomplete procedures or lack of participant understanding.	Ethical violations, regulatory issues, and questionable trial validity.	1. Standardized consent process 2. Participant education 3. Protection mechanisms for vulnerable groups
Product Safety	Unexpected side effects, insufficient safety data, or drug interactions.	Patient harm, product recalls, lawsuits, and reputational damage.	1. Pharmacovigilance systems 2. Post-market surveillance 3. Adverse event reporting 4. Safety evaluations and label updates

3.2 Risk Management

- **Risk Management Process**

Risk Item	Impact Indicators	Potential Cause and Impacts	Mitigation Measures
Product Quality	API issues, process control failures, or labeling errors.	Quality incidents, regulatory violations, recalls, and loss of trust.	1. Quality audits and supplier management 2. Process control optimization 3. Storage and transport monitoring
Regulatory Adherence	Labeling non-compliance, recall process gaps, or delayed safety reports.	Permit revocation, penalties, market access barriers, and cost increases.	1. Regulatory monitoring 2. Compliance system optimization 3. Emergency response planning
Product Information	Incomplete instructions, unclear warnings, or poor communication.	Misuse, patient harm, disputes, and increased education costs.	1. Update medication guides 2. Medical education and consultation 3. Communication strategy enhancement
Chemical Waste Leakage	Improper handling or storage of solvents and hazardous liquids.	Health risks, environmental damage, legal penalties, and operational disruption.	Strengthen storage protocols and labeling
Biomedical Waste	Improper disposal of infectious waste or misclassification.	Biosafety threats, infection risks, and regulatory violations.	Engage qualified waste disposal vendors

3.3 Climate-Related Financial Disclosures

In response to global sustainability trends, the Company has adopted the framework of the Task Force on Climate-related Financial Disclosures (TCFD) to assess the dual dimensions of impact severity and likelihood across short-, medium-, and long-term risks and opportunities, as evaluated by senior management. Based on this analysis, the Company has identified key transition risks (including policy and regulatory changes, technological shifts, market dynamics, and reputational concerns), physical risks (both acute and chronic), and opportunities (in areas such as resource efficiency, energy sources, products and services, market positioning, and resilience) that may affect its operations. Corresponding mitigation strategies have been developed. Moving forward, the Company will report annually to the Board, which will oversee the effectiveness of implementation.

Image by Gerd Altmann from Pixabay

3.3 Climate-Related Financial Disclosures

Governance

Governance framework for climate-related risks and opportunities

The Board is the highest decision-making body for climate risk management, responsible for defining the Company's risk planning, strategy, and operational plans. It oversees the management and disclosure of climate-related risks and holds ultimate accountability for overall risk governance.

Senior management ensures the effectiveness of the climate risk management framework and internal processes, and that appropriate measures are taken in response to identified risks.

In 2024, the Company established an ESG Sustainability Task Force, chaired by the CEO. The task force convenes periodically to discuss climate-related risks and opportunities affecting operations and to formulate response strategies. Annual outcomes will be reported to the Board to support strategic climate discussions.

Strategy

Business, strategic, and financial planning, including actual and potential climate-related impacts

Referencing the 2024 Climate Risk and Opportunity Matrix, the Company defines short-term as 1–3 years, medium-term as 3–5 years, and long-term as 6–10 years, aligned with its decade-long operational outlook.

Climate change and global warming pose significant risks across the value chain—from upstream suppliers to downstream customer demand. The Company has identified climate-related risks and opportunities that could materially impact financials, alter business strategies or models, and affect the broader value chain. Priority is given to developing response strategies for these high-impact areas.

Risk & Management

Process for managing climate-related risks

Based on the 2024 risk and opportunity assessment survey completed by department heads, all identified risks were rated as low to moderate, with no high-risk items. Nonetheless, the Company proactively developed mitigation strategies for moderate-risk items based on their likelihood and potential impact. The risk identification, assessment, and management process is clearly defined and implemented as shown below:

1. The Sustainability Task Force completes collection of greenhouse gas environmental background data
   Climate risk assessment and impact scope evaluation
2. Establish climate risk and opportunity inventory
   Develop internal operational impact assessment questionnaire
3. The Sustainability Task Force implements climate risk and opportunity impact analysis
   Determine high-priority risk items
4. Establish action strategies and target setting
5. Annual review by the Sustainability Task Force to discuss action strategy and target achievement effectiveness

Metrics & Targets

Metrics and targets used to assess and manage climate-related issues

In 2024, the Company completed a greenhouse gas (GHG) inventory and enhanced its disclosures on its website and public information platforms.

The Company has set a target to reduce GHG emissions by an average of 3% by 2028 compared to 2023 levels.

As Scope 2 emissions from purchased electricity represent the majority of its carbon footprint, the Company is focused on improving energy efficiency and implementing various energy-saving initiatives.

Future procurement of office and laboratory equipment will prioritize energy-efficient, eco-labeled products.

3.3 Climate-Related Financial Disclosures

2024 Climate-Related Risks and Opportunities Analysis

Risk Type	Factor	Climate Risk Topic	Risk Level	Timeframe
Transition Risks	Policy & Regulation	R1 Rising carbon pricing	Low	Short-, medium-, long-term
		R2 Stricter emissions reporting requirements	Low	Short-, medium-, long-term
		R3 Requirements and regulation of existing products and services	Low	Short-, medium-, long-term
		R4 Exposure to litigation risks	Medium	Long-term
	Tech-nology	R5 Substitution of existing products/services with low-carbon alternatives	Low	Short-, medium-, long-term
		R6 Failed investments in new technologies	Low	Short-, medium-, long-term
		R7 Cost associated with low-carbon technology transition	Low	Short-, medium-, long-term
	Market	R8 Shifts in customer behavior	Low	Short-, medium-, long-term
		R9 Market signal uncertainty	Low	Short-, medium-, long-term
		R10 Rising raw material costs	Medium	Medium-, long-term
	Reputation	R11 Changing consumer preferences and industry stigmatization	Low	Short-, medium-, long-term
		R12 Growing stakeholder concern and negative feedback	Medium	Long-term
Physical Risks	Acute	R13 Increased severity of extreme weather events (e.g., typhoons, floods)	Medium	Short-, medium-, long-term
	Chronic	R14 Extreme changes in rainfall and climate patterns	Low	Short-, medium-, long-term
		R15 Rising average temperatures	Low	Short-, medium-, long-term
		R16 Rising sea levels	Low	Short-, medium-, long-term

Note: Short-term = 1–3 years; Medium-term = 3–5 years; Long-term = 6–10 years

3.3 Climate-Related Financial Disclosures

2024 Climate-Related Risks and Opportunities Analysis

Risk Type	Factor	Climate Risk Topic	Risk Level	Timeframe
Opportunities	Resource Efficiency	O1 Adopt more efficient transportation methods	Low	Short-, medium-, long-term
		O2 Use more efficient production and distribution processes	Low	Short-, medium-, long-term
		O3 Recycle and reuse	Low	Short-, medium-, long-term
		O4 Transition to more energy-efficient buildings	Low	Short-, medium-, long-term
		O5 Reduce water usage and consumption	Low	Short-, medium-, long-term
	Energy Source	O6 Use low-carbon energy	Low	Short-, medium-, long-term
		O7 Adopt incentive-based policies	Low	Short-, medium-, long-term
		O8 Adopt new technologies	Low	Short-, medium-, long-term
		O9 Participate in carbon trading markets	Low	Short-, medium-, long-term
		O10 Shift to decentralized energy systems	Low	Short-, medium-, long-term
	Products and Services	O11 Develop and/or expand low-carbon products and services	Low	Short-, medium-, long-term
		O12 Develop climate adaptation and insurance risk solutions	Low	Short-, medium-, long-term
		O13 Innovate and develop new products and services	Medium	Short-, medium-, long-term
		O14 Diversify business activities	Low	Short-, medium-, long-term
		O15 Respond to shifts in consumer preferences	Low	Short-, medium-, long-term
	Market	O16 Enter new markets	Medium	Long-term
		O17 Leverage public sector incentive programs	Low	Short-, medium-, long-term
		O18 Gain access to insurable new assets and regions	Low	Short-, medium-, long-term
	Resilience	O19 Participate in renewable energy projects and adopt energy-saving measures	Low	Short-, medium-, long-term
		O20 Substitute/diversify energy sources	Low	Short-, medium-, long-term

3.3 Climate-Related Financial Disclosures

Topic	Aspect	Items	Impact Period	Financial Impact on the Company	Management Measures
TCFD Climate-related Financial Disclosures	Transformation Risks – Market	Rising Raw Material Costs	Long-term	Extreme weather events may disrupt raw material supply, prompting suppliers to raise prices. Higher input costs could increase operating expenses, compress margins, and weaken competitiveness.	Establish partnerships with multiple suppliers to avoid overreliance on a single source. Build long-term, trust-based relationships to secure favorable terms and priority access. Closely monitor market and industry trends, including raw material pricing and supply conditions. Where necessary, sign long-term supply agreements to ensure stable pricing and availability.
	Physical Risk – Immediacy	Increased Severity of Extreme Weather Events Such As Typhoons and Floods	Long-term	Extreme weather events may also delay logistics and increase transportation or inventory costs. Disruptions in the supply of critical components could delay customer deliveries or result in lost business, with the financial burden shifting to the Company.	Continue reducing product carbon emissions to meet customer decarbonization requirements, enhance pricing power, and increase order volumes, thereby boosting revenue.

3.3 Climate-Related Financial Disclosures

Topic	Aspect	Items	Impact Period	Financial Impact on the Company	Management Measures
TCFD Climate-related Financial Disclosures	Transformation Risks – Policies and Regulations	Litigation Risks	Long-term	In response to climate-related policies and regulations, companies may face the risk of carbon taxation, which could increase operating costs. However, as the Company is not part of a high-emission industry, the financial impact is expected to be limited. In the event of litigation, legal expenses (including attorney fees, court costs, and settlements) could affect cash flow and profitability. Additionally, reputational damage may erode market trust, leading to a decline in share price and higher financing costs.	1. Enhance data accuracy and internal review: Continue voluntary greenhouse gas (GHG) inventories, manage carbon emissions, and accelerate the development of emission reduction plans. 2. Improve transparency and communication: Ensure that TCFD disclosures are clear and verifiable, and proactively engage with investors and regulators to minimize misunderstandings and legal disputes. 3. Establish legal and compliance response mechanisms: Engage legal experts to review climate disclosures and develop litigation response plans to mitigate legal risks.
		Strengthening Emissions Reporting Obligations	Long-term	1. Carbon pricing and tax burden: As governments tighten emissions regulations, companies may face additional costs from carbon taxes or participation in carbon markets. 2. Rising compliance costs: Companies may need to implement more precise emissions tracking systems, potentially requiring investment in data analytics tools or incurring additional assurance costs. 3. Financial institutions may adjust lending terms based on a company's emissions performance, increasing borrowing costs for high-emission businesses. 4. Collaboration with suppliers to reduce indirect emissions may raise supply chain costs.	1. Proactively monitor regulatory updates from the Financial Supervisory Commission and adjust GHG inventory practices to ensure compliance. 2. Optimize supply chain and operations: Work with suppliers to reduce indirect emissions, lowering long-term costs and environmental impact.

3.4 Regulatory Compliance and Ethical Integrity

The Company strictly complies with the laws and regulations of the jurisdictions in which it operates. Oversight of financial reporting and internal controls is conducted through the Audit Committee and the Internal Audit Office. New employees receive compliance orientation and training upon onboarding. In 2024, the Company did not incur any penalties or sanctions related to corporate governance, securities trading, environmental protection, labor and human rights, occupational safety, customer privacy breaches, marketing practices, customer health, product safety, anti-competitive behavior, or antitrust violations.

Ethical Integrity

Lumosa has established a Code of Ethical Conduct that emphasizes a business philosophy grounded in integrity, transparency, and accountability. The corporate governance unit is responsible for promoting ethical practices and regulatory compliance, and reports annually to the Board on implementation progress.

2024 Integrity Training and Performance

To reinforce ethical behavior, the Company requires all employees to sign a commitment letter and conducts periodic training sessions on ethical business practices.

Communication and Training Overview	Category	Number fo People	%	Note
Communicated organizational strategies and procedures related to ethical conduct	Directors	9	100%	Signed integrity commitment letters
	Employees	32	100%	Promoted ethical standards through internal and external meetings and onboarding procedures
Employees received training on ethics and integrity	Directors	9	100%	-
	Employees	32	90%	Held training on insider trade on 2024/8/28 conducted by Yong-Heng Law Office

Note: In 2024, the Company also introduced a new Supplier Sustainability Commitment Letter, which will be distributed to all domestic and international suppliers engaged in transactions starting in 2025.

3.4 Regulatory Compliance and Ethical Integrity

Grievance Mechanism and Due Diligence

To uphold the Company's Code of Ethical Conduct and Principles of Integrity, Lumosa has published its "Whistleblower Policy" on the corporate website for stakeholder reference. This policy provides a formal channel for reporting any violations of ethical standards or integrity principles. It also allows for the submission of specific complaints involving criminal conduct, fraud, or legal violations by current directors, executive vice presidents, or other senior managers during their tenure.

The policy ensures the legal rights of whistleblowers and related parties are protected, and supports the resolution of any unethical treatment that may contravene the Company's social responsibility commitments. All complaints are handled in accordance with the procedures outlined in the Whistleblower Policy, including a formal due diligence process.

Investigations are conducted by personnel appointed by the Chairperson, based on the nature of the report. In 2024, the whistleblower mailbox received zero complaints. There were no incidents involving breaches of customer privacy or loss of customer data.

(Note: Whistleblower email address: coc@lumosa.com.tw)

Image by Gerd Altmann from Pixabay

3.5 Operational Performance

Material Topic	Operational Performance
Impact on the Company	Lumosa focuses on new drug development and commercial licensing, viewing R&D progress and business expansion as core operational indicators. Through integrated management by a professional team, the Company effectively controls risk and accelerates time-to-market. Expanding licensing partnerships generates stable cash flow and royalty income, supporting long-term sustainability. However, the biotech industry is inherently high-risk—particularly during the drug development phase, which demands significant investment with long lead time. If licensing negotiations stall, funding shortages may pose a major challenge. Additionally, intense market competition means that failure to meet licensing or project milestones could trigger pressure from capital markets and increase financial risk.
Policies/ Commitments	Build a world-class R&D team by recruiting seasoned international experts and emerging talent to strengthen human capital Enhance project management by integrating R&D, CMC (Chemistry, Manufacturing, and Controls), regulatory, and IP teams to drive efficient drug development Increase product commercial value and secure stable cash flow through out-licensing, co-development, or strategic partnerships Actively implement cost optimization initiatives to boost competitiveness, regularly review milestone achievements, and adjust strategies accordingly
Short-term Goals	Complete preliminary negotiations for out-licensing of new drug projects Expand the sales network of marketed products in international markets to increase distribution points

3.5 Operational Performance

Material Topic	Operational Performance
Resource Investments and Practical Actions	**Resource Allocation** 1. In 2024, R&D expenditures totaled approximately NT$322.855 thousand. 2. Expand the sales network of marketed products in international markets to increase distribution points **Collaboration and Expansion** 1. Partner with domestic and international CROs, academic institutions, and pharmaceutical distributors to accelerate development and commercialization 2. Participate in global biotech conferences to actively pursue licensing and technical collaboration opportunities **Action Plans** 1. Allocate resources based on milestone targets at each R&D stage and adjust business strategies accordingly 2. Strengthen intellectual property management to reinforce the technology platform and extend product life cycles 3. Proactively develop innovative drugs that meet market demand and optimize R&D and manufacturing processes to maximize product value
Performance Results	Achieve predefined development milestones
Evaluation Mechanism	1. Operational performance is reported quarterly to the Board 2. Management meetings are held as needed to review progress 3. Semiannual KPI meetings are conducted to assess the effectiveness of action plans
Responsible Department	Business Development Division, New Drug Development Division

3.5 Operational Performance

2024 Business Report

Lumosa Therapeutics remains committed to developing treatments that address unmet medical needs. The Company's novel therapy for acute ischemic stroke, LT3001, is currently undergoing three multicenter Phase II clinical trials across Taiwan, the US, Europe, and China. Proof-of-concept efficacy has been successfully demonstrated in China. The Company's long-acting analgesic injection, marketed under the brand name Naldebain®, has secured regulatory approvals in six markets: Taiwan, Singapore, Thailand, Malaysia, Ukraine, and Brunei. In parallel, Lumosa's veterinary pharmaceutical candidate has advanced into pivotal trials for registration purposes. To drive long-term innovation, the Company is actively building a drug incubation platform, exploring the therapeutic potential of exosomes, allogeneic cell therapies, and gene therapy technologies.

Government Grants

Lumosa did not receive any government subsidies in fiscal year 2024.

2024 Financial Overview

Unit: Thousand New Taiwan Dollar

Items	2022	2023	2024
Revenue (A)	26,642	56,916	39,154
Operating Costs (B)	12,081	15,435	21,441
Employee Compensation and Benefits (C)	64,568	68,379	94,067
Payments to Capital Providers (D)	0	0	0
Payments to Government (E)	0	0	0
Regional Investments (F)	0	0	0
Retained Economic Value (A-(B~F))	-50,007	-26,898	-76,354

Note: Definition of payments to capital providers: this category includes all dividends distributed to shareholders, as well as interest payments made to lenders.
Definition of payments to the government: this refers to all taxes and penalties paid by the Company in accordance with international, national, and local regulations.
Taxes may include, but are not limited to, value-added tax (VAT), corporate income tax, and property tax.

3.5 Operational Performance

Tax Policy, Governance, Control, and Risk Management

Tax Policy	(1) Full compliance with tax laws and regulations in all jurisdictions where it operates (2) Transparent financial reporting (3) Intercompany transactions are conducted in accordance with OECD transfer pricing guidelines and BEPS (Base Erosion and Profit Shifting) standards (4) Utilization of lawful tax incentives without engaging in aggressive tax planning (5) Maintaining constructive and transparent relationships with tax authorities
Tax Governance, Control, and Risk Management	The Company ensures timely and accurate tax payments through sound tax management practices, thereby mitigating legal and financial risks associated with non-compliance. Tax structures are optimized to reduce tax burdens and enhance economic efficiency. The Company also identifies and assesses potential tax risks, implementing controls to prevent and correct issues such as miscalculations or improper invoice handling.
Stakeholder Engagement and Management of Tax-Related Matters	The finance and accounting department oversees tax governance, supports government initiatives on R&D tax incentives, and promotes transparency in tax disclosures. The Company invests in ongoing training for tax professionals and consults external experts when necessary to ensure compliance and minimize financial and reputational risks.
Country-by-Country Tax Information (Unit: Thousand New Taiwan Dollar)	Tax Jurisdiction: Taiwan Name of Resident Entity (Business Location): Lumosa Therapeutics Co., Ltd. (Nangang) Primary Business Activities: New drug development Number of Employees: 32 Profit (Loss) Before Tax: -436,836 Tangible Assets Other Than ash and Cash Equivalents: 779,661 Corporate Income Tax Paid in Cash: 0 Accrued Corporate Income Tax Based on Profit (Loss): 0

3.6 Innovation and Research & Development

Material Topic	Innovation and Research & Development
Impact on the Company	Innovation is the cornerstone of Lumosa's long-term sustainability. By continuously integrating cutting-edge technologies—such as extended-release analgesic injection, acute stroke therapies, and exosome-based platforms—and expanding its product pipeline, the Company is positioning itself to become a leader in the neurology, inflammation, and oncology markets. However, potential risks include clinical trial setbacks, underwhelming therapeutic outcomes, development delays, instability within R&D teams, challenges in recruiting specialized talent, early patent filings by competitors, or regulatory failures in securing marketing approvals. These factors could adversely impact the Company's reputation and revenue.
Policies/ Commitments	**R&D Policy:** Lumosa is committed to a "reSEARCH & DEVELOPMENT" model—an approach that emphasizes rapid identification of promising drug candidates to reduce development time and cost while maximizing value creation. **Sustainability Commitment:** The Company continues to explore and adopt emerging technology platforms to diversify its pipeline. Strategic collaborations, including licensing agreements and joint ventures, support global market expansion. **External Collaboration** Lumosa actively partners with CROs, academic institutions, and commercial partners to accelerate both development and commercialization timelines.
Short-term Goals	1. Investing in new technology platforms to broaden the Company's R&D pipeline 2. Achieving key clinical milestones across several ongoing development programs

3.6 Innovation and Research & Development

Material Topic	Innovation and Research & Development
Resource Investments and Practical Actions	1. Over the past three years, R&D expenses have accounted for approximately 86–88% of total operating expenses. In 2024 alone, Lumosa invested approximately NT$322.9 million, with targeted allocation toward clinical research and commercialization readiness for drug candidates in neurology, inflammation, and oncology. 2. The Company continues to invest in exosome-based technologies, building dedicated teams and fostering collaborations with academic institutions. 3. For marketed products, Lumosa is strengthening partnerships with international pharmaceutical companies to expand its global footprint. For pipeline assets, the Company is actively engaging with multinational pharmaceutical firms and has successfully out-licensed products to global partners. 4. t Annual intellectual property training is provided to R&D and legal personnel. The Company continues to expand its global patent portfolio.
Performance Results	See the section below for details on successfully developed technologies and products.
Responsible Department	New Drug Development Division, Pre-Clinical Development Division, Clinical Development Division

3.6 Innovation and Research & Development

Technology and R&D Overview

Audit Committee Operations

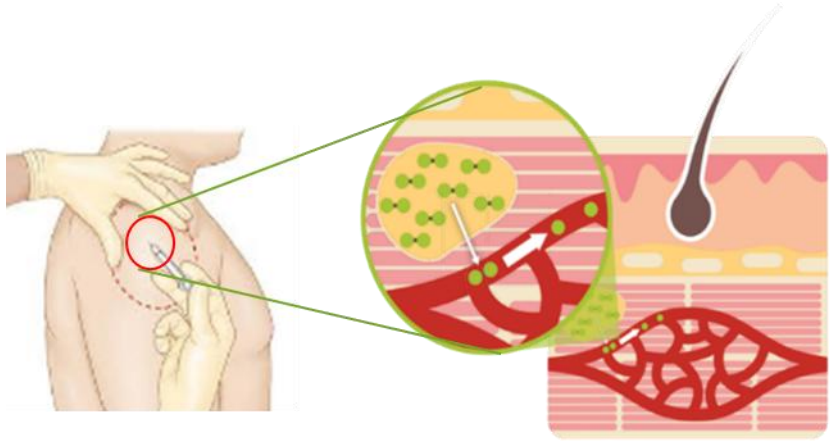
Lumosa Therapeutics is supported by a highly specialized drug development team. Following the 2018 acquisition of TPG Biologics, the Company expanded its expertise in biologics development. Lumosa's capabilities span the full spectrum of drug development, including candidate evaluation, non-clinical research, manufacturing and quality control, drug design and screening, preclinical and clinical development, regulatory affairs, project management, intellectual property, and business development.

Through rigorous internal analysis and evaluation, the Company advances high-potential candidates into development, with a strategic focus on neurological disorders and related therapeutic areas. Lumosa collaborates with leading global experts in neurology, inflammation, and oncology, leveraging a robust patent strategy and the 505(b)(2) regulatory pathway to extend product life cycles. A dedicated project management team integrates domestic and international R&D resources to ensure high development efficiency and commercial value.

Product Technologies and R&D Pipeline

LT1001 (Naldebain®)

LT1001 is a novel extended-release analgesic injection designed with a proprietary formulation to minimize side effects and reduce the risk of addiction. Intended for moderate to severe pain, the drug utilizes a prodrug approach to deliver nalbuphine in a sustained-release format. Phase III clinical trial was completed in August 2015, followed by a new drug application in Taiwan in September of the same year. Marketing approval was granted in March 2017. In 2018, Lumosa licensed the veterinary version of the product to Skyline Vet Pharma (SVP), extending the product's lifecycle. As of the end of 2024, Naldebain® has received marketing authorization in Taiwan, Singapore, Thailand, Malaysia, Ukraine, and Brunei.



3.6 Innovation and Research & Development

LT3001 (Oldatrotide®)

LT3001 is a first-in-class small molecule drug that combines a short peptide with a novel active compound. Unlike the current standard of care—rt-PA, a complex biologic with a low clinical usage rate (3–5%) due to hemorrhaging risks—LT3001 offers multiple therapeutic benefits, including enhanced vascular reperfusion and reduced reperfusion injury. Preclinical studies have shown no bleeding concerns, suggesting the potential for safer and more effective treatment for acute ischemic stroke, with the added benefit of reducing inflammation and brain damage.

In August 2021, a single-dose Phase II trial met its primary safety endpoint and showed a trend toward improved neurological outcomes. A U.S.-based Phase I study in January 2022 confirmed no drug-drug interactions with standard acute stroke medications and provided additional safety data for increased dosing frequency. Two Phase II trials are currently underway in Taiwan, the US, and Europe: one evaluating LT3001 in combination with mechanical thrombectomy, and another assessing multi-dose LT3001 in patients who are ineligible for thrombectomy or rt-PA. In China, a Phase II trial led by partner Shanghai Pharma has been completed, demonstrating favorable safety and tolerability, along with preliminary efficacy in functional recovery at Day 90 post-treatment.

LT6001 / CS026 – Exosome Technology Platform

Lumosa is conducting proof-of-concept animal studies and process scale-up research for its exosome-based platform. The Company is committed to lifecycle management strategies that extend patent protection and enhance licensing value. Through collaborations with academic and research institutions, Lumosa actively identifies and co-develops promising early-stage candidates, reducing licensing costs and strengthening its competitive position in the market.

R&D Cost Proportion for the Most Recent 3 Years

Unit: Thousand New Taiwan Dollars

Items \ Fiscal Yr.	2022	2023	2024
R&D Cost (A)	280,459	369,303	322,855
Operational Cost (B)	320,480	417,258	374,833
A/B	88%	89%	86%

3.6 Innovation and Research & Development

Technologies or Products Successfully Developed

Product/ Pipeline	Development Progress	R&D Result
LT1001 (Naldebain®)	Obtained marketing authorization in Taiwan, Singapore, Thailand, Malaysia, Ukraine, and Brunei	In August 2015, Lumosa successfully completed the Phase III clinical trial for LT1001, meeting all primary endpoints. Taiwan's Food and Drug Administration (TFDA) granted marketing approval in March 2017. Subsequent regulatory approvals were obtained from the Health Sciences Authority (HSA) of Singapore in December 2020, the Thai FDA in December 2021, Malaysia's Drug Control Authority (DCA) in June 2022, and both the State Medical Drugs Control (SMDC) of Ukraine and the Brunei Darussalam Medicines Control Authority (BDMCA) in 2023.
LT3001	Enrollment of the Phase 2, single-dose trial has been completed. Two Phase II multi-dose administered alone, and multi-dose administered in combination with mechanical thrombectomy trials are still on-going	Two Phase II clinical trials are currently underway in Taiwan, the United States, and Europe. One trial evaluates the safety and potential efficacy of LT3001 in combination with mechanical thrombectomy for stroke patients. The other assesses the safety and efficacy of multi-dose LT3001 in patients who are ineligible for thrombectomy or rt-PA treatment. Both trials have successfully initiated patient enrollment. In China, a Phase II trial led by Lumosa's licensing partner, Shanghai Pharmaceuticals, was completed in November 2024. The results demonstrated strong safety profile and well tolerance for LT3001, along with preliminary efficacy in functional recovery at Day 90 post-treatment—laying a critical foundation for future development.

Intellectual Property Management

Lumosa conducts annual intellectual property training for its R&D and legal teams to strengthen domain expertise and enhance IP protection capabilities. As of the end of 2024, the Company holds 91 granted patents across various jurisdictions, with an additional 26 patent applications under review.

3.7 Safety of Clinical Trial Participants

Material Topic	Safety of Clinical Trial Participants
Impact on the Company	Protecting the health and safety of clinical trial participants is a fundamental value at Lumosa. This commitment not only fosters trust but also enhances the Company's brand reputation. However, failure to promptly report or manage serious adverse events (SAEs) could significantly damage the Company's credibility, regulatory compliance, and business partnerships. Such incidents may lead to trial suspension, legal liabilities, increased R&D costs, and delays in project timelines.
Policies/ Commitments	• Lumosa fully adheres to Good Clinical Practice (GCP), International Council for Harmonization (ICH) guidelines, Taiwan's "Guidelines for Good Pharmacovigilance Practice," and all relevant international regulations. • The Company has established and maintains internal standard operating procedures (SOPs) to ensure consistent quality monitoring by both contract research organizations (CROs) and internal teams. • All adverse events—especially serious and unexpected ones (SUSARs and SARs)—are reported promptly and within the timelines required by regulatory authorities. • SOPs and monitoring systems are regularly reviewed and enhanced to ensure that all outsourced activities meet the highest quality standards.
Short-term Goals	• CROs are subject to periodic evaluations and audits to ensure ongoing compliance with regulatory requirements. • At least one clinical trial-related training session is conducted annually for internal clinical teams. • Regular investigator meetings, educational materials, and consultation channels are provided to ensure participants fully understand the trial. Key performance indicators include audit pass rates for informed consent procedures, the number of consent-related disputes, and completion rates for participant education sessions

3.7 Safety of Clinical Trial Participants

Material Topic	Safety of Clinical Trial Participants
Mid-, Long-term Goals	• The Company maintains a zero-violation record under GCP standards, ensuring uninterrupted clinical trial operations. • By maintaining rigorous compliance with international standards, Lumosa aims to be the partner of choice for global pharmaceutical companies.
Resource Investments and Practical Actions	• CROs are selected and monitored in accordance with Lumosa's SOPs to ensure full compliance with GCP and ICH guidelines. • A specialized team is responsible for adverse event reporting, ensuring all cases are submitted within the required regulatory timelines. • Regular workshops and training sessions are held to keep both internal teams and CROs up to date with the latest compliance requirements.
Performance Results	One clinical trial-related training session was successfully completed in 2024.
Responsible Department	Clinical Development Division

Lumosa is committed to safeguarding the health and well-being of clinical trial participants. Through rigorous trial design, robust subject protection protocols, continuous data monitoring, and proactive risk management, the Company minimizes trial-related risks while ensuring the scientific integrity and reliability of its results. This commitment is not only a moral obligation to participants but also a cornerstone of sustainable operations and product credibility.

After the trial has completed, Lumosa continues to monitor the health status of participants to ensure long-term safety. In the event of adverse reactions related to the investigational product, the Company provides necessary medical support or compensation.

3.7 Safety of Clinical Trial Participants

In cases of Suspected Unexpected Serious Adverse Reactions (SUSARs), sponsors are required to report to regulatory authorities within legally mandated timeframes to protect participant rights. According to Article 106 of Taiwan's Good Clinical Practice (GCP) guidelines:

- **Unexpected fatal or life-threatening adverse reactions** must be reported to the Ministry of Health and Welfare or the Taiwan Drug Relief Foundation within 7 days of awareness, with a detailed written report submitted within 15 days.
- **Other unexpected serious adverse reactions** must be reported within 15 days, along with comprehensive documentation.

A SUSAR must meet all three of the following criteria:

1. **Causality:** A reasonable possibility that the reaction is related to the investigational drug.
2. **Seriousness:** The event results in one or more of the following:
   - Death
   - Life-threatening condition
   - Permanent disability
   - Congenital anomaly or birth defect
   - Hospitalization or prolonged hospitalization
   - Other medically significant conditions requiring intervention to prevent permanent damage
3. **Unexpectedness:** The reaction is not described in the product information, or differs in nature or severity from what is documented. For marketed drugs undergoing clinical trials, all serious adverse reactions—whether expected or not—must be reported in accordance with applicable regulations.

3.8 Drug Safety

Drug safety is directly tied to patient health and survival. For pharmaceutical companies, it represents not only a legal and ethical responsibility but also a critical factor in brand reputation, market trust, and long-term competitiveness. Ensuring product quality and minimizing adverse effects are essential to maintaining regulatory compliance and meeting international standards.

Although Lumosa does not engage in direct manufacturing, it partners with GMP-certified contract manufacturing organizations (CMOs) in Taiwan to ensure that all production processes meet Good Manufacturing Practice (GMP) standards. Additionally, the Company ensures that its supply chain and distribution operations comply with Good Distribution Practice (GDP) guidelines, safeguarding the safety and efficacy of its products throughout their lifecycle.

Material Topic	Safety of Clinical Trial Participants
Impact on the Company	Drug safety is directly tied to patient lives and health, and it plays a critical role in shaping corporate reputation and market trust. Enhancing product quality and minimizing adverse effects not only reduce healthcare risks but also strengthen the Company's competitive position while ensuring compliance with regulatory and international standards.
Policies/ Commitments	Lumosa is committed to full compliance with Good Manufacturing Practice (GMP) and Good Distribution Practice (GDP) standards. The Company ensures that every stage—from R&D and manufacturing to distribution—is closely monitored to prevent counterfeit risks and protect consumer safety. Strict adherence to GDP standards ensures that all products meet local regulatory requirements in each market. Packaging and transportation processes are tightly controlled. The Company responds promptly to any product complaints or recalls, in full compliance with pharmaceutical regulations and international norms.
Goals	1. Renew or extend GMP certifications as scheduled to maintain regulatory qualifications. 2. Conduct and pass all regular internal and external audits. 3. Conduct training programs on GMP and GDP standards

3.8 Drug Safety

Material Topic	Safety of Clinical Trial Participants
Resource Investments and Practical Actions	1. Both in-house and licensed products undergo rigorous quality checks to ensure compliance with pharmaceutical manufacturing and quality standards in all domestic and international markets. 2. Product names, packaging, inserts, and labeling strictly adhere to the disclosure requirements of each sales region.
Performance Results	1. All products and services fully comply with the production and quality regulations of the markets in which they are sold. 2. No recalls due to product defects to date.
Evaluation Mechanisms	1. Internal Audits: Audits are conducted by the Quality Assurance department to ensure ongoing compliance. 2. External Inspections: The Company undergoes inspections by both domestic and international pharmaceutical safety authorities.
Responsible Department	Product Development and Intellectual Properties Division, Quality Assurance

3.8 Drug Safety

Lumosa is firmly committed to upholding the highest standards of Good Manufacturing Practice (GMP) and Good Distribution Practice (GDP), ensuring that every stage of the pharmaceutical lifecycle—from production to distribution—meets international regulatory and quality benchmarks.

GMP ensures that manufacturing processes consistently meet stringent quality and safety requirements, while GDP safeguards the integrity and stability of pharmaceutical products during transportation and storage, mitigating the risk of counterfeit drugs. Through these rigorous quality management systems, Lumosa is able to:

- Enhance drug safety and protect patient health and lives
- Ensure regulatory compliance, facilitating market approval and sustained market access
- Strengthening brand reputation, increasing competitiveness, and building customer trust.

Looking ahead, Lumosa will continue to refine its GMP and GDP frameworks to ensure product quality, reduce supply chain risks, and maintain world-class standards in pharmaceutical safety and quality across global markets.

Image by Megan Rexapin Conde from Pixabay

3.9 Product Health and Safety

Material Topic	Safety of Clinical Trial Participants
Impact on the Company	Robust product safety management enhances Lumosa's brand credibility, reduces the risk of adverse events—including serious adverse events (SAEs), unexpected side effects, long-term safety concerns, and adverse reactions in special populations—and ensures regulatory compliance while protecting patient health. Effective safety oversight is essential to sustainable operations. Conversely, failure to manage these risks could lead to safety incidents, legal liabilities, or reputational damage.
Policies/ Commitments	Lumosa is committed to full compliance with pharmaceutical quality regulations. The Company has established rigorous standard operating procedures (SOPs) covering all stages of the product lifecycle—from R&D and manufacturing to market launch and post-marketing surveillance. These SOPs align with GMP (Good Manufacturing Practice), GCP (Good Clinical Practice), and ICH (International Council for Harmonization) standards. Regular employee training and strict supply chain audits are conducted to ensure high levels of safety awareness and operational excellence.
Goals	The Company implements comprehensive pharmacovigilance programs to meet all legal obligations, including timely submission of safety data. Periodic Safety Update Reports (PSURs) are submitted in accordance with post-marketing regulatory requirements.
Resource Investments and Practical Actions	Lumosa has dedicated resources and personnel for product safety and risk management, conducting regular risk assessments and staff training. Internal and external adverse event reporting systems are in place. For example, the safety and risk profile of LT1001 (Naldebain®) is monitored annually in close collaboration with supply chain partners to ensure compliance with safety standards.

3.9 Product Health and Safety

Material Topic	Safety of Clinical Trial Participants
Performance Results	1. Completed all required pharmacovigilance reports and submissions in accordance with TFDA directives 2. Achieved a 100% on-time reporting rate for safety data within regulatory timelines 3. Reported zero serious adverse drug reactions (SADRs) in 2024 for marketed products 4. Recorded no violations of health and safety regulations related to products or services 5. Conducted one pharmacovigilance training session during the year
Evaluation Mechanisms	1. Maintained real-time safety reporting mechanisms in compliance with regulatory requirements across all jurisdictions 2. Submitted Development Safety Update Reports (DSURs) and PSURs to relevant authorities on a regular basis 3. Periodically evaluated the effectiveness of real-time safety reporting systems
Responsible Department	Product Development and Intellectual Property Division, Clinical Development Division

Our Corporate Culture and Values

Core Measures in Product Health and Safety Management

To ensure that every stage of the pharmaceutical lifecycle complies with international standards and regulatory requirements, Lumosa has implemented a comprehensive set of standard operating procedures (SOPs) that govern the development, manufacturing, distribution, and post-marketing surveillance of its products.

3.9 Product Health and Safety

Ensuring Safety and Efficacy During Drug Development

Throughout the drug development process, Lumosa adheres to the standards set by the International Council for Harmonization (ICH) and Good Clinical Practice (GCP) to ensure scientific rigor, data reliability, and patient safety:

- Preclinical Research: In vitro and animal studies are conducted to evaluate pharmacological effects, safety profiles, and toxicity.
- Clinical Trial Design: Trials are designed in accordance with ICH-GCP guidelines to meet ethical and clinical standards and are approved by Institutional Review Boards (IRBs).
- Risk Assessment and Safety Monitoring: An independent Data Monitoring Committee (DMC) is established to review adverse events and serious adverse events (SAEs). Trials may be modified or terminated as needed to protect participants.

Implementation of GMP and GDP Standards

Lumosa is committed to full compliance with Good Manufacturing Practice (GMP) and Good Distribution Practice (GDP) to ensure that pharmaceutical products are manufactured and distributed in accordance with global quality and safety standards.

Product Launch and Post-Marketing Surveillance (PV, Pharmacovigilance)

Following market approval, Lumosa continues to monitor product safety through a robust pharmacovigilance program. This includes ongoing assessment of adverse events and long-term safety data to ensure continued protection of patient health.

Internal Training and Compliance Management

Lumosa regularly conducts professional training programs to strengthen employee awareness and capabilities in pharmaceutical safety management:

- GMP, GDP, and GCP Training

Annual internal and external training sessions are held to ensure employees stay current with regulatory updates and quality management standards.

- Internal Audits and Regulatory Compliance

Routine internal reviews and audits are conducted to ensure all operations comply with SOPs and international regulations. When issues are identified, Corrective and Preventive Actions (CAPA) are promptly implemented.

3.9 Product Health and Safety

- **Future Outlook and Continuous Improvement**

Product health and safety management is not only vital to Lumosa's reputation and market competitiveness—it directly impacts patient lives. The Company will continue to strengthen regulatory compliance and digitalize its safety management systems to raise pharmaceutical safety standards and deliver more reliable treatment options to patients worldwide.

Adverse Event (AE) and Serious Adverse Event (SAE) Reporting Mechanism

- Lumosa has established a global pharmacovigilance system that enables physicians, pharmacists, and consumers to report adverse events. These reports are regularly reviewed to assess product safety and risk profiles.
- A cross-departmental response protocol is in place to evaluate serious or unexpected adverse reactions. If necessary, the Company initiates product recall procedures to mitigate risk and protect patient safety.

Periodic Safety Update Reports (PSUR) and Risk Management Plans (RMP)

- In accordance with country-specific regulations, Lumosa submits PSURs or Periodic Benefit-Risk Evaluation Reports (PBRERs) to provide updated assessments of product safety and risk.
- When specific safety concerns are identified, the Company develops and implements Risk Management Plans (RMPs) to mitigate risks and ensure patient protection.

3.10 Supplier Management

Supplier Management Policy and Implementation

Lumosa applies rigorous quality control standards beginning with the selection of active pharmaceutical ingredient (API) suppliers and extending through to contract manufacturing organizations (CMOs). The Company conducts periodic audits of manufacturing facilities to ensure compliance with Taiwan's and international PIC/S GMP and ICH standards. All CMOs must be certified by local health authorities.

Lumosa is committed to delivering high-quality pharmaceuticals that meet societal expectations and uphold its corporate responsibility to patients. On the commercial side, the Company partners with reputable domestic and international pharmaceutical firms for licensing and distribution. All marketing and labeling practices comply with the regulatory requirements of each jurisdiction, including full disclosure of product ingredients on package inserts to help patients and healthcare professionals identify potential allergens and ensure safe use.

Lumosa's primary suppliers include pharmaceutical R&D service providers and academic medical institutions, both of which operate in sectors with strong environmental and social commitments. Prior to engagement, suppliers are informed of the Company's integrity policies and are expected to uphold shared values in corporate social responsibility. Contracts with key suppliers include clauses requiring compliance with or exceeding minimum legal standards, and explicitly outline expectations for ethical conduct.

Human Rights Compliance for Suppliers

Lumosa is committed to protecting the fundamental rights of all stakeholders—including employees, suppliers, and customers. The Company's human rights policy is guided by the Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, and the International Labour Organization (ILO) conventions. Labor-management agreements, regular labor-management meetings, and a code of ethical conduct are in place to safeguard employee rights and ensure ethical business practices.

Suppliers are required to comply with relevant regulations and local labor laws, including prohibitions against child labor and labor exploitation. Lumosa has established internal policies and confidential reporting channels to allow stakeholders to report misconduct or raise concerns. Beginning in 2025, ESG-related requirements will be incorporated into the supplier onboarding process and basic information forms, with implementation starting for all new suppliers.

3.10 Supplier Management

Local Procurement

Item \ Fiscal Yr.	2022	2023	2024
Percentage of local suppliers（%）	80.36%	79.17%	78.02%
Percentage of local purchase amount（%）	41.60%	38.63%	22.97%

Supplier Evaluation

Lumosa conducts performance evaluations and risk assessments of its suppliers in accordance with its “Quality Assurance Process for Contracted Services.” Evaluation criteria include operational performance, product quality, and production controls. Suppliers with substandard evaluations are subject to audits and corrective guidance, while high-risk suppliers are placed under continuous improvement and monitoring programs.
In 2024, Lumosa completed the design of a supplier sustainability questionnaire, which will be distributed to both new and existing suppliers in 2025. The results will inform performance evaluations and risk assessments to ensure that all suppliers meet the Company’s standards for quality, delivery, cost, and sustainability.

Chapter

4

Sustainable Environment

4.1 Environmental Management Policies

Lumosa integrates environmental sustainability into its core operations, demonstrating its commitment to environmental stewardship through a comprehensive set of environmental management policies. The Company is dedicated to reducing resource consumption, promoting circular use, and managing waste responsibly to achieve harmony between business growth and environmental protection.
While advancing new drug development, Lumosa actively minimizes its environmental footprint through a range of initiatives, including energy conservation, waste reduction, and enhanced reuse and recycling practices—setting a strong example for the biotechnology industry.

Our Practices

Energy Conservation and Carbon Reduction

- Powering down personal computers before leaving the office
- Setting idle computers to sleep mode
- Unplugging appliances after use
- Turning off lights during lunch breaks
- Switching off lights in unused meeting rooms
- Regularly cleaning office refrigerators
- Participating in HVAC efficiency checks coordinated by the building management to reduce energy waste

Waste Reduction and Recycling

- Using double-sided printing and repurposing single-sided paper
- Reducing paper towel usage by encouraging cloth or handkerchief alternatives
- Using personal utensils to minimize disposable tableware
- Recycling used coffee grounds
- Proper battery recycling
- Reusing office supplies and stationery

Chemical Waste Management

All laboratory liquid and biological waste is handled in accordance with Taiwan's Waste Disposal Act
Toxic chemical substances are managed under the Toxic and Concerned Chemical Substances Control Act and disposed of by licensed contractors approved by regulatory authorities

4.2 Energy Management

As global energy demand rises and sustainability becomes increasingly critical, energy management has emerged as a core issue across industries. Being a leader in pharmaceutical innovation, Lumosa not only pursues excellence in medical technology but also implements efficient energy management strategies to optimize resource use and reduce environmental impact.

Energy Sources and Usage

In 2024, Lumosa's energy consumption was entirely derived from non-renewable sources, specifically purchased electricity. The Company does not currently use or produce renewable energy, and all energy is consumed internally.
Electricity is used primarily at the Company's headquarters and laboratories. In 2024, total electricity consumption reached **89,977 kWh—18,834 kWh** for office operations, **6,759 kWh** for laboratory use and **64,384 kWh** from the sharing of public electricity consumption (including air conditioning, lighting, elevators and etc.)—an increase of **6,842 kWh** compared to **83,135 kWh** in 2023 (with **21,939 kWh** for offices, **1,503 kWh** for labs and **59,693 kWh** from the sharing of public electricity consumption).

Electricity consumption by office

18,834 kWh

Electricity consumption by laboratory

6,759 kWh

Sharing of public electricity consumption

64,394 kWh

While the office's share of total energy consumption decreased from 2023 to 2024, overall increase was driven by the sharing of public electricity consumption. The establishment of a new laboratory under the subsidiary Cytoengine at the end of 2023 and the launch of new R&D projects and trials in 2024.

4.2 Energy Management

Electricity Consumption by Area and Energy Use Breakdown

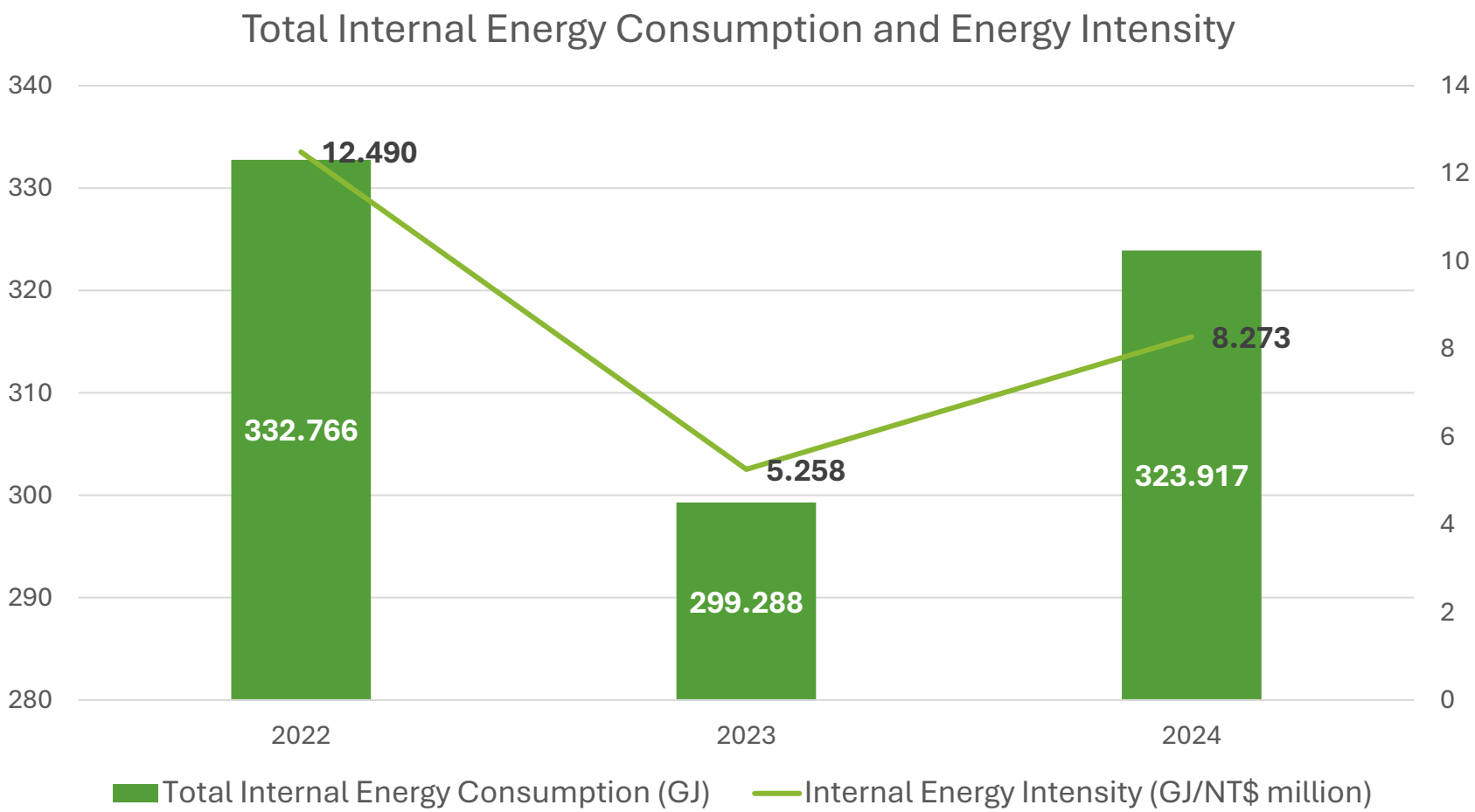
Year	Total Internal Energy Consumption								
	Electricity Consumption (kWh)			Energy Consumption (GJ)			Energy Consumption Ratio		
	Office	Laboratory	Public Utility	Office	Laboratory	Public Utility	Office	Laboratory	Public Utility
2022	25,744	4,895	61,796	92.6784	17.622	222.4656	13.5040%	6.3487%	80.1473%
2023	21,939	1,503	59,693	78.9804	5.4108	214.8948	10.7177%	0.7342%	88.5481%
2024	18,834	6,759	64,384	67.8024	24.3324	231.7824	20.9320%	7.5119%	71.5561%

Total Energy Consumption and Energy Intensity

Fiscal Year	Total Energy Consumption (GJ)	Annual Revenue (Million New Taiwan Dollar)	Energy Intensity (GJ/Million New Taiwan Dollar)
2022	332.766	26.642	12.490
2023	299.288	56.916	5.258
2024	323.917	39.154	8.273

Note 1: Each kilowatt-hour is 3.6 million joules, 1GJ is 109 joules, and 1 Kcal is 4,186J.
Note 2: Energy intensity (GJ/ NT$ million) = total energy consumption (GJ)/annual revenue (NT$ million)

4.2 Energy Management



4.2 Energy Management

Energy Savings in 2024

Replacing fluorescent light fixtures

- **Energy Consumption Savings**
  9 Sets of T5 fluorescent lamp fixtures were replaced with T8 LED lamp fixtures, which are estimated to save 288kwh and 1.0368GJ per year

- **Estimation method**
  T5 fluorescent tubes 14W x 4 tubes x 9 fixtures x 8 hours x 250 working days = 1,008,000wh/yr = 1.008 kwh/yr.
  T8 LED tubes 10W x 4 tubes x 9 fixtures, 8 hours x 250 working days = 720,000 wh/yr = 720kwh/yr

1.008 kwh/yr (traditional T5 fluorescent tube)
– 720kwh/yr (T8 LED tube)
288 kwh/yr

Energy and Greenhouse Gas Management Policy

- Comply with national energy laws
- Improve energy efficiency
- Purchase equipment with energy-saving label

4.3 Greenhouse Gas Management

Lumosa is committed to integrating sustainability into its core business strategy, with a strong focus on carbon reduction. As the Company's greenhouse gas (GHG) emissions are primarily Scope 2—stemming from purchased electricity—our efforts are concentrated on improving energy efficiency and implementing a range of energy-saving initiatives to reduce overall consumption.

We conduct annual GHG inventories to track emissions and refine our reduction strategies accordingly. These assessments enable us to tailor our actions to current environmental conditions and adjust our approach as needed to meet evolving climate expectations.

Although Lumosa is not a major emitter or energy consumer, we take a proactive and responsible stance on climate issues. We are committed to driving a green transition in collaboration with our employees and stakeholders. Looking ahead, we will continue promoting energy efficiency and advancing environmentally responsible operations, striving to become a model for sustainable development in the biopharmaceutical industry. Lumosa is dedicated to contributing to global net-zero goals and protecting the planet. Aside from carbon dioxide emissions from electricity use, the Company reports no emissions of ozone-depleting substances (ODS), nitrogen oxides (NOx), sulfur oxides (SOx), or other significant air pollutants.

Greenhouse Gas Emission Source Types and Emission Statistics

Types of Emission		Scope 2 Energy Indirect Greenhouse Gas Emissions	Total Emissions Equivalent
2022	Emissions Equivalent (CO_2e tons/yr)	45.7925	45.7925
2023	Emissions Equivalent (CO_2e tons/yr)	41.0689	41.0689
2024	Emissions Equivalent (CO_2e tons/yr)	42.6492	42.6492

Note 1: The electricity carbon emission coefficient is calculated based on the annual coefficient announced by the Bureau of Energy, Ministry of Economic Affairs. The coefficient for 2022 is 0.495 kg CO_2e, the coefficient for 2023 is 0.494 kg CO_2e, and the electricity carbon emission coefficient for 2024 is 0.474 kg CO_2e

Note 2: The fuel coefficient is based on the Greenhouse Gas Emission Coefficient Management Table Version 6.0.4 announced by the National Greenhouse Gas Registration Platform

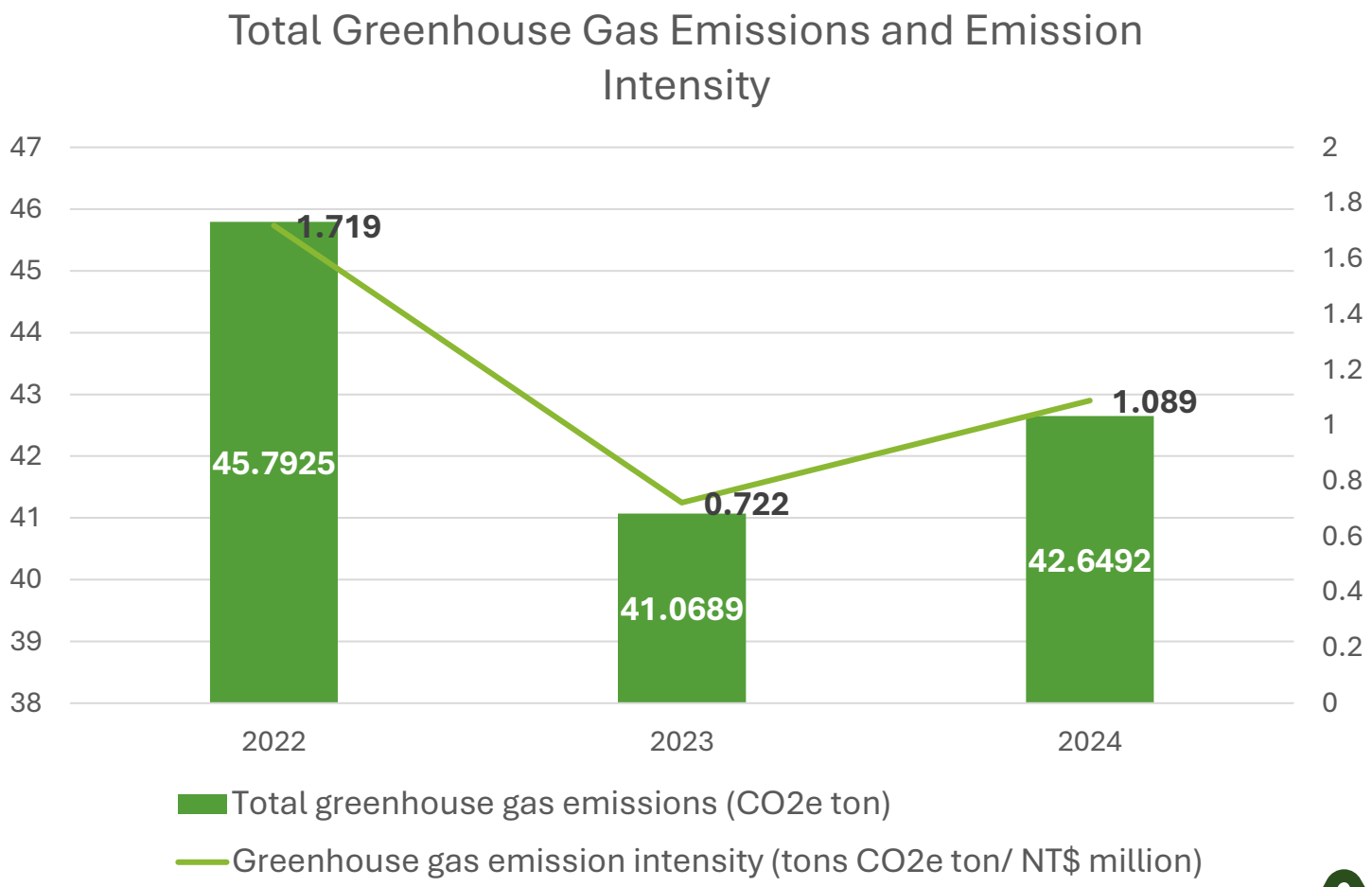
Note 3: The greenhouse gas inventory data of Lumosa is self-estimated; the scope of the Scope 2 inventory in 2022~2024 is offices and laboratories

4.3 Greenhouse Gas Management

Total Greenhouse Gas Emissions and Emission Intensity

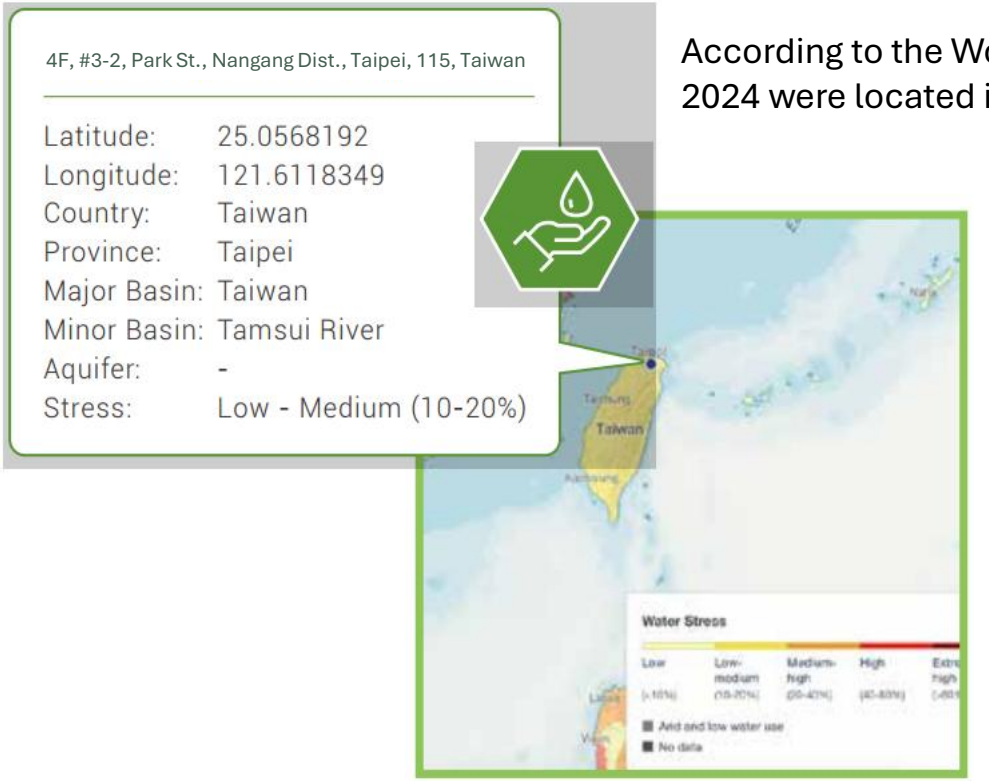
Fiscal Year	Total Emissions Equivalent (CO_2e tons)	Annual revenue (NT$ million)	Emission Intensity (CO_2e tons/NT$ million)
2022	45.7925	26.642	1.7188
2023	41.0689	56.916	0.7216
2024	42.6492	39.154	1.0893

Note: Greenhouse gas emission intensity (tons CO2e ton/ NT$ million) = total greenhouse gas emissions (CO2e ton) / annual revenue (NT$ million)



4.4 Water Resources Management

As a biotechnology and pharmaceutical company not engaged in manufacturing, Lumosa does not require process water for production. Water usage is limited to domestic purposes such as office sanitation and cooling systems. The Company is headquartered in the Nangang Software Park, a region not classified as water-stressed. Based on internal assessments, Lumosa's operations pose no significant environmental impact on local water resources or surrounding ecosystems.



According to the World Resources Institute (WRI) water risk assessment tool, all of Lumosa's operational sites in 2024 were located in areas categorized as having low to medium water stress.

Water Withdrawal and Discharge

All water used by Lumosa is sourced from the Taiwan Water Corporation and classified as third-party freshwater (≤1,000 mg/L total dissolved solids). The Company does not draw from surface water, seawater, groundwater, or reclaimed sources. Water is primarily used for general office needs and limited HVAC functions, such as restrooms and cooling towers. Wastewater is discharged through the Nangang Software Park's centralized treatment facility.

Although the Greater Taipei area is not considered water-stressed, Lumosa remains committed to responsible water stewardship. The Company focuses on infrastructure maintenance and upgrades to improve water efficiency and actively promotes water conservation awareness among employees to minimize environmental impact.

4.4 Water Resources Management

Operation locations

Nangang

Water source

Fuicui Reservoir

Water supply

Taiwan Water Corp.

Purpose

Domestic

Water Resources Statistics

(Unit: millions liter)

Water Resources Usage			
Fiscal Year	Total Water Withdrawn	Total Water Discharged	Total Water Consumption
2022	0.8079	0.8079	0
2023	0.8764	0.8764	0
2024	0.8028	0.8028	0

Water Resource Management

- Promote water conservation measures
- Regularly replace filter media and test water quality in water dispensers to ensure water safety
- The industrial park management committee maintains, disinfects, and cleans water towers to improve the efficiency of water-using equipment
- Notices regarding water, electricity, and resource conservation are posted on bulletin boards or sent to the employees via e-mail. Provide training to new and existing employees on correct knowledge of water and electricity usage

4.5 Laboratory Waste Management

As environmental awareness grows and regulations tighten, waste management has become a critical responsibility for corporations. Lumosa recognizes that effective waste management is not only a regulatory obligation but also a cornerstone of environmental sustainability and corporate social responsibility.

Material Topic	Laboratory Waste Management
Impact on the Company	Proper handling of pharmaceutical waste enables Lumosa to fulfill its environmental commitments, align with sustainable development principles, and mitigate pollution risks. These efforts enhance the Company's environmental reputation and build trust with licensing partners and local communities.
Policies/ Commitments	1. Lumosa follows the 4R framework—Reduce, Reuse, Recycle, and Recover—to minimize waste generation and maximize resource efficiency. 2. All laboratory industrial waste is handled by government-certified waste management contractors. Lumosa regularly audits these vendors to ensure compliance and operational efficiency.
Short-term Goals	1. All laboratory waste is processed in full compliance with applicable regulations, achieving a 100% qualified disposal rate. 2. The Company conducts periodic training and awareness campaigns on pharmaceutical waste classification to strengthen environmental consciousness among employees. 3. Proper storage containers are used, clearly labeled, and regularly inspected to ensure the integrity of waste storage facilities.
Mid-, Long-term Goals	1. Waste Minimization Initiatives: Lumosa promotes both internal and external waste reduction strategies to minimize environmental impact. 2. Waste Minimization Initiatives: Lumosa promotes both internal and external waste reduction strategies to minimize environmental impact.

4.5 Laboratory Waste Management

Material Topic	Laboratory Waste Management
Resource Investments and Practical Actions	1. Specialized storage zones are designated for laboratory waste to ensure safe and compliant handling. 2. Lumosa collaborates exclusively with certified waste disposal firms to ensure proper and lawful waste treatment.
2024 Performance Results	The effectiveness of waste management is evaluated through key performance indicators, including: Regulatory compliance rates, waste generation and disposal volumes, number of waste leakage incidents, employee training completion rates, storage facility inspection pass rates, and SOP compliance audit scores.
Responsible Department	Produce Development and Intellectual Property Division, Pre-clinical Development Division

Operational waste includes general industrial waste, biomedical waste, and chemical waste liquids. Biomedical waste primarily consists of plastic and other materials from biological experiments, while chemical waste liquids are generated from organic solvents used in analytical testing. Given the relatively small volume of chemical waste, it is temporarily stored in laboratories until it reaches the threshold for collection and disposal. All laboratory waste and chemical liquids are handled by qualified third-party contractors to ensure full regulatory compliance and prevent environmental or legal risks. Beyond compliance, Lumosa actively monitors regulatory developments and integrates environmental principles into every stage of R&D and operations. By focusing on source reduction and improving material efficiency, the Company strives to minimize waste generation at its origin.

Waste Management Policy

- Comply with national waste management laws and regulations
- Commit to not use products containing substances or raw materials that are banned
- Actively promote waste reduction and recycling

4.5 Laboratory Waste Management

Waste Output Statistics

Items		2022	2023	2024	Disposal Method	Disposal Location
Commercial waste	Office Waste	4.53	3.95	3.68	Incineration	Off-site
Hazardous industrial waste	Solids	0.19	0.19	0.29	Incineration	Off-site
	Liquids	0.24	0	0	Incineration	Off-site
Total		4.96	4.14	3.97	-	

Note 1: Data on commercial waste is derived from the Ministry of Environment's national general waste generation data.
Note 2: Estimation of biomedical waste from 2022 to 2023: The basic weight of waste removed by manufacturers is 16 kg/month x 12 months = 192 kg
Note 3: Per capita household waste formula: actual working hours of the company in the current year * total number of employees at the end of 12/31 * per capita waste weight per person per day in the current year

Waste Intensity

Fiscal Year	Total Amount of Waste (metric ton)	Annual Revenue（NT$ million）	Waste Intensity (metric ton/ NT$ million)
2022	4.96	26.642	0.1862
2023	4.14	56.916	0.0727
2024	3.97	39.1540	0.1014

Note: Waste intensity = total waste (metric tons) / annual revenue (NT$ million)

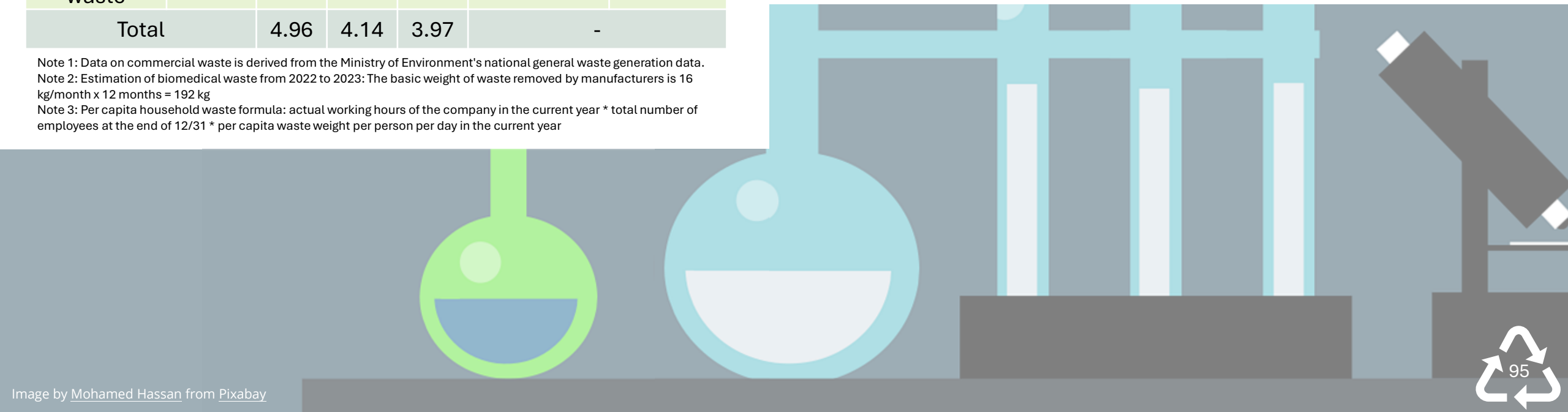
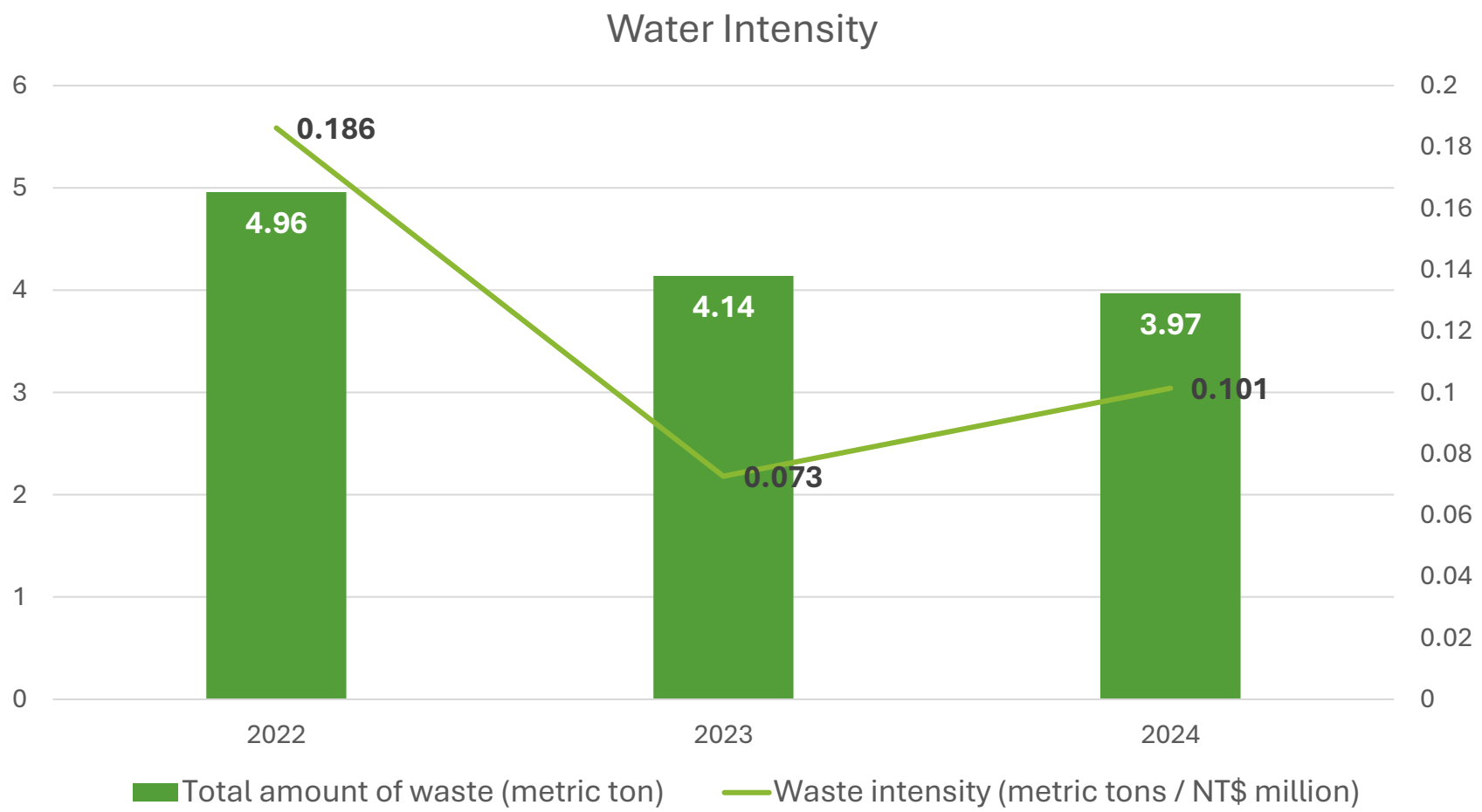


Image by Mohamed Hassan from Pixabay

4.5 Laboratory Waste Management



Chapter

5

Social Prosperity

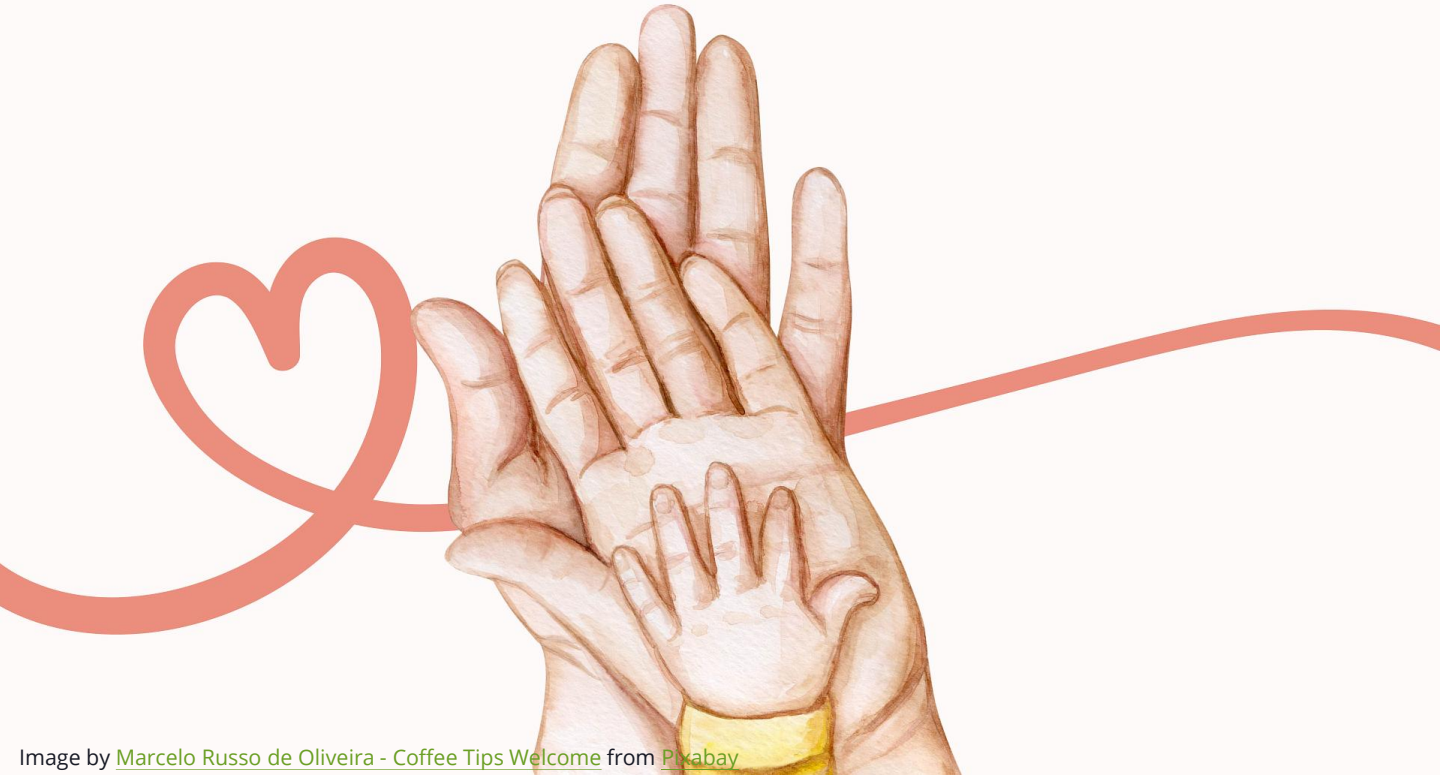


Image by Marcelo Russo de Oliveira - Coffee Tips Welcome from Pixabay

Lumosa upholds the corporate spirit of “Caring for Life, Committed to Service,” with a mission to address unmet medical needs and improve the quality of life for patients worldwide. Social responsibility is embedded in the Company’s core values, reflected in its active engagement in public welfare, support for underprivileged communities, and commitment to creating a safe, inclusive, and empowering workplace.

The Company offers competitive and equitable compensation and benefits, supports professional development and career planning, and fosters a culture of mutual respect and trust through gender equality policies and open communication channels. These efforts ensure that every employee can thrive in a fair and supportive environment.

5.1 Employee Structure

Lumosa is committed to building a workplace grounded in fairness and respect. The Company implements a range of equality measures to eliminate disparities in working conditions and ensure a discrimination-free environment for all employees. Through gender equality policies, equitable compensation structures, and transparent promotion and performance management systems, Lumosa safeguards the labor rights of its workforce.

Human Rights Protection

Lumosa's human rights policy is guided by the Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights, and the International Labor Organization (ILO) conventions. The Company requires all suppliers and partners to comply with relevant regulations and local labor laws, including prohibitions on child labor and labor exploitation.

To ensure compliance, Lumosa promotes awareness of labor rights and human rights protections among new and existing employees. A confidential whistleblower mechanism is in place, with designated personnel responsible for investigating reports. Whistleblowers are protected from retaliation, and all reports are handled with strict confidentiality. In 2024, there were no reported human rights violations.

Sexual Harassment Reporting Channels		
Direct phone contact with HR personnel	Submission of a sexual harassment complaint form	Anonymous reporting through the Company's internal website

Employee Statistics

As of the end of 2024, Lumosa employed 32 full-time staff, all under open-ended contracts. There were no fixed-term or part-time employees. Women made up 72% of the workforce and 80% of management roles, while men accounted for 28%. Approximately 75% of employees were between the ages of 30 and 50, including a majority of both managerial and non-managerial staff. Most employees held bachelor's or master's degrees.

Lumosa has consistently maintained a 100% local hiring rate for senior management over the past three years, reflecting its commitment to developing domestic talent.

5.1 Employee Structure

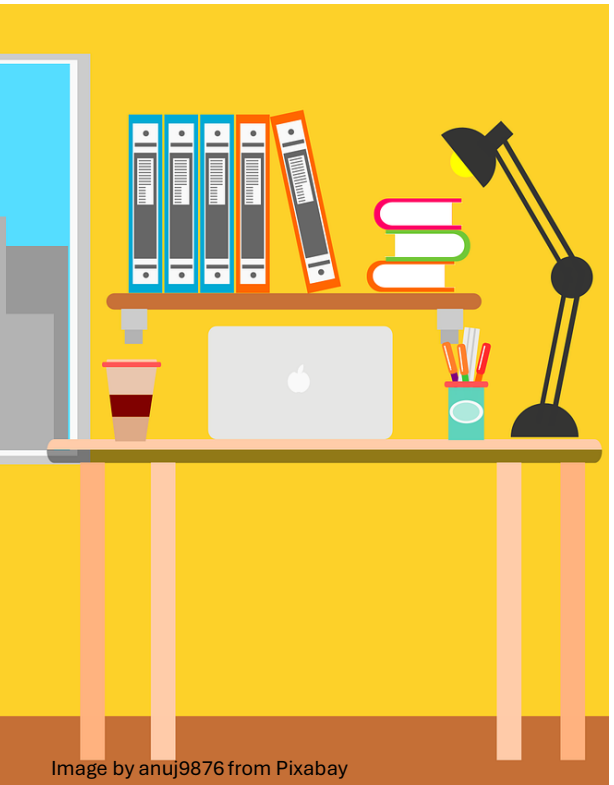
Statistics / Fiscal Yr		2022		2023		2024	
Total Number of Employees (Note 1)		41		35		32	
Employment Contracts (Note 2)		Permanent full-time staff	Temporary employees and employees without guaranteed working hours	Permanent full-time staff	Temporary employees and employees without guaranteed working hours	Permanent full-time staff	Temporary employees and employees without guaranteed working hours
Gender	Male	12	0	11	0	9	0
	Female	28	1	24	0	23	0
Region	Taiwan	40	1	35	0	32	0
	Overseas	0	0	0	0	0	0
Employment Type (Note 3)		Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Gender	Male	12	0	11	0	9	0
	Female	29	0	24	0	23	0
Region	Taiwan	41	0	35	0	32	0
	Overseas	0	0	0	0	0	0

Note 1: Total number of employees for the reporting year is based on the headcount as of December 31.
Note 2: Employment contracts are categorized as open-ended contracts (permanent employees) and Fixed-term contracts, which include short-term, seasonal, or project-based roles, as well as temporary replacements for employees on maternity or parental leave. These contracts remain valid until the original employee returns to work.
Note 3: Employment types are classified as: Full-time employees, whose weekly working hours meet the statutory maximum, and part-time employees, whose weekly working hours fall below the statutory threshold. This category includes interns, hourly workers, and healthcare professionals hired by the Company on a part-time basis.

5.1 Employee Structure

Non-employee Workforce

As of 2024, the Company engaged 2 non-employee personnel



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Diversity, Turnover, and Resignation Statistics

Diversity Statistics / Fiscal Year				2022		2023		2024	
				Number of Employee	%	Number of Employee	%	Number of Employee	%
Employee	R&D	Gender	Male	8	19.51%	8	22.86%	7	21.88%
			Female	21	51.22%	17	48.57%	18	56.25%
		Age	30 and Under	0	0.00%	1	2.86%	0	0.00%
			31~50	28	68.29%	23	65.71%	24	75.00%
			51 and Over	1	2.44%	1	2.86%	1	3.13%
		Education	Graduate	26	63.41%	24	68.57%	24	75.00%
			College	3	7.32%	1	2.85%	1	3.12%
			Others	0	0.00%	0	0.00%	0	0.00%
	Non-R&D	Gender	Male	4	9.76%	3	8.57%	2	6.25%
			Female	8	19.51%	7	20.00%	5	15.62%
		Age	30 and Under	0	0.00%	0	0.00%	0	0.00%
			31~50	11	26.83%	8	22.86%	6	18.75%
			51 and Over	1	2.44%	2	5.71%	1	3.12%
		Education	Graduate	7	17.07%	5	14.29%	3	9.38%
			College	5	12.20%	5	14.29%	4	12.50%
			Others	0	0.00%	0	0.00%	0	0.00%

5.1 Employee Structure

Turnover Statistics

Item / Fiscal Yr.		2022		2023		2024	
Total Number of Employees for the Year(12/31)		41		35		32	
Statistics on New Hires & Resignations		# of Employee	Proportion (Note)	# of Employee	Proportion (Note)	# of Employee	Proportion (Note)
New Hires							
Age	30 and Under	0	0.00%	2	5.71%	0	0.00%
	31~50	10	24.39%	3	8.57%	2	6.25%
	51 and Over	0	0.00%	1	2.86%	0	0.00%
Gender	Male	3	7.32%	3	8.57%	0	0.00%
	Female	7	17.07%	3	8.57%	2	6.25%
Education	Graduate	8	19.51%	3	8.57%	1	3.13%
	College	2	4.88%	3	8.57%	1	3.13%
	Others	0	0.00%	0	0.00%	0	0.00%
Region	Taiwan	10	24.39%	6	17.14%	2	6.25%
	Overseas	0	0.00%	0	0.00%	0	0.00%
Turnovers							
Age	30 and Under	0	0.00%	1	2.86%	0	0.00%
	31~50	6	14.63%	10	28.57%	2	6.25%
	51 and Over	1	2.44%	1	2.86%	3	9.38%
Gender	Male	4	9.76%	4	11.43%	3	9.38%
	Female	3	7.32%	8	22.86%	2	6.25%
Education	Graduate	7	17.07%	7	20.00%	3	9.38%
	College	0	0.00%	5	14.29%	2	6.25%
	Others	0	0.00%	0	0.00%	0	0.00%
Region	Taiwan	7	17.07%	12	34.29%	5	15.63%
	Overseas	0	0.00%	0	0.00%	0	0.00%

Note: Total number of employees is based on headcount as of December 31 of the reporting year. "New hires" refers to all employees recruited during the reporting year, including those who joined and left within the same year. Note: **New hire rate** = (Total number of new hires in a specific category during the year / Total number of employees at year-end) x 100%. **Female new hire rate** = (Total number of female new hires during the year / Total number of employees at year-end) x 100%. **Turnover rate** = (Total number of employees who left in a specific category during the year / Total number of employees at year-end) x 100%. **Turnover rate for employees under age 30** = (Number of employees under 30 who left during the year / Total number of employees at year-end) x 100%

5.2 Talent Sustainability

Lumosa recognizes that talent is the foundation of sustainable growth. The Company is dedicated to providing a respectful and safe work environment, free from discrimination based on race, gender, religion, age, or political beliefs. Employee benefits exceed statutory requirements and include: three days of additional paid travel leave, paid sick leave, annual company outings and team-building events, birthday gifts, subsidized annual health checkups, group insurance coverage. These initiatives promote employee well-being and work-life balance. Lumosa also invests heavily in talent development through domestic and international training programs to enhance professional capabilities. A robust performance-based reward system offers competitive short- and long-term compensation packages, helping to attract and retain top talent and drive the Company's long-term success.

Christmas Banquet

Year-end Banquet

Outdoor Activities Club

5.2 Talent Sustainability

Material Topic	5.2.1Compensation and Benefits
Impact on the Company	Compensation and benefits are central to Lumosa's talent attraction and retention strategy. A competitive pay structure enhances employee satisfaction and loyalty, supporting business stability and innovation. Conversely, uncompetitive compensation may lead to talent attrition and impact long-term performance.
Policies/ Commitments	Lumosa is committed to a "fair, transparent, and performance-driven" compensation philosophy. Key policies include: Regular market benchmarking to ensure pay is at or above industry standards, performance-based salary adjustments, comprehensive benefits including bonuses, allowances, and work-life balance support
Short-term Goals	1. Continuously monitor market salary benchmarks to ensure employee pay meets or exceeds the median. 2. Enhance health benefits by tailoring checkup packages to employee needs and involving staff in provider selection.
Mid-, Long-term Goals	1. Median compensation for non-managerial employees exceeds the industry average. 2. Introduce or update 1–2 new benefit programs annually to diversify offerings. 3. Adjust salary structures annually based on performance and market trends.
Resource Investments and Practical Actions	1. Maintain market-aligned compensation and implement restricted stock awards and performance bonuses to reward contributions. 2. Allocate dedicated budgets annually to enhance benefits such as health subsidies, family support, and leisure allowances. HR regularly collects employee feedback to refine offerings. 3. Provide annual health checkups with a subsidy of NT$4,000 per employee. 4. Offer NT$5,000 per employee annually for language training. 5. Fully fund group insurance for all employees. 6. Provide monetary gifts for birthdays, childbirth, and Labor Day 7. Organize domestic and international travel based on business performance. 8. Organize domestic and international travel based on business performance. 9. Offer RSUs to allow employees to share in the Company's growth and success.

5.2 Talent Sustainability

Material Topic	5.2.1 Compensation and Benefits
2024 Performance Results	1. 11 employees participated in Company-sponsored health checkups, totaling NT$84,000 in subsidies. 2. Group insurance premiums fully covered by the Company totaled NT$192,483. 3. 35 participants joined Company-sponsored travel programs. 4. The year-end banquet was held on January 25, 2024, at the Hanlai Hotel in Taipei, with a 94% participation rate and a 63% prize draw win rate. 5. No employee complaints or grievances were filed with local authorities in 2024.
Responsible Division	Business Administration Division e-mail: esg@lumosa.com.tw

At Lumosa, employees are regarded as key partners in the Company's long-term sustainability. The Company is committed to fostering a supportive and fulfilling workplace by offering a comprehensive benefits package that spans financial security, healthcare, lifestyle support, and career development. The following are the core components of Lumosa's employee benefits program:

- **Insurance and Retirement Benefits**

  In compliance with local labor laws, Lumosa provides labor and health insurance coverage and administers retirement pension plans. In addition, the Company fully funds group insurance policies—including life, accident, critical illness, and various medical insurance plans—offering robust protection for employees and their families.

5.2 Talent Sustainability

- **Insurance and Retirement Benefits**

  In compliance with local labor laws, Lumosa provides labor and health insurance coverage and administers retirement pension plans. In addition, the Company fully funds group insurance policies—including life, accident, critical illness, and various medical insurance plans—offering robust protection for employees and their families.

- **Annual Health Checkups**

  Employees receive complimentary annual health screenings. The benefit includes a fixed subsidy that can be accumulated and used over two years, encouraging employees to adopt proactive health management habits.

- **Diverse Incentives and Employee Care**

  Lumosa offers a range of employee care initiatives, including birthday bonuses, Labor Day gifts, wedding and childbirth allowances, to foster a culture of appreciation and support.

- **Career Development and Incentives**

  Under the Company's "Employee Stock Option Plan," eligible employees are granted stock options, allowing them to share in the Company's growth and strengthening their sense of ownership and belonging.

- **Employee Activities and Education Subsidies**

  Depending on business performance, Lumosa organizes domestic and international employee trips, as well as year-end and Lunar New Year celebrations. Each employee is also eligible for an annual NT$5,000 subsidy for language education, supporting continuous learning and personal growth.

5.2 Talent Sustainability

Annual Employee Welfare Expenditures for Each Fiscal Year	FY 2022	FY 2023	FY 2024
Annual Employee Welfare Expenditures	64,568	68,379	94,067
Average Welfare Expenditures per Employee	1,614	1,756	2,703

2024 Performance Evaluation Statistics (2024/3)		Actual Number of Evaluation Conducted	Number of Employee in the Category	Percentage
Gender	Male	10	10	100%
	Female	23	23	100%
Employee Type	R&D	25	25	100%
	Non-R&D	8	8	100%

Note: Contract staff and employees with less than three months of tenure are excluded from annual performance reviews.

Salary information for full-time, non-managerial employees is publicly disclosed via the Market Observation Post System (MOPS). To access the data, please visit the MOPS website and search under: Listed Companies → Year → Biotechnology & Medical Industry, using stock code 6535.

https://mops.twse.com.tw/mops/#/web/t100sb15

5.2 Talent Sustainability

Parental Leave Statistics

Employee Parental Leave Statistics / Fiscal Year	Gender	2022	2023	2024
Number of Employees Eligible for Parental Leave (Note 1)	Male	1	1	1
	Female	1	1	1
Number of Employees Applied for Parental Leave	Male	0	0	0
	Female	0	0	0
Number of Employees Who Should Return from Parental Leave (A) (Note 2)	Male	0	0	0
	Female	0	0	0
Number of Employees Who Had Returned from Parental Leave a(B)	Male	0	0	0
	Female	0	0	0
Return-to-work Rate (B/A) (Note 3)	Male	0	0	0
	Female	0	0	0
Number of Employees Still Employed 12 Months after Returning from Leave (C)	Male	0	0	0
	Female	0	0	0
Return Rate (Note 4) (Current Year C/Previous Year B)	Male	0	0	0

Note 1: Number of employees eligible for parental leave is based on those who applied for maternity or paternity leave in the past three years.
Note 2: The number of employees who returned from parental leave includes those who returned earlier than scheduled.
Note 3: Return-to-work rate = (Number of employees who returned from parental leave during the year / Number of employees expected to return during the year) × 100%
Note 4: Retention rate = (Number of employees still employed 12 months after returning from leave / Number of employees who returned from leave in the previous year) × 100%

5.2 Talent Sustainability

Base Salary and Renumeration Statistics

Base Salary and Renumeration Ratio			2022		2023		2024	
Key Operational Sites	Employee Type	Item	Male	Female	Male	Female	Male	Female
Taiwan	R&D	Base Salary	1.00	1.29	1.00	1.37	1.00	1.36
		Remuneration	1.00	1.26	1.00	1.39	1.00	1.32
	Non-R&D	Base Salary	1.00	0.82	1.00	0.82	1.00	0.72
		Remuneration	1.00	0.79	1.00	0.81	1.00	0.70

Note 1: Base salary includes monthly salary and meal allowance.
Note 2: Total remuneration includes base salary, meal allowance, Mid-Autumn Festival bonus, Dragon Boat Festival bonus, year-end bonus, performance bonus, and other incentives.
Note 3: Gender pay ratio = (Average salary of female employees / Average salary of male employees)
Note 4: Employees with less than one year of service are excluded from compensation ratio calculations.

Statistics	Gender	Standard Salary (Note 2) / Local Base Salary
Entry-level Employees in Taiwan (Note 1)	Male	1.66
	Female	1.63

Note 1: "Entry-level employees" are defined according to the Company's internal HR system as the lowest-ranking full-time employees.
Note 2: Standard salary refers to the monthly wage (base salary + meal allowance) for entry-level full-time employees.

Retirement Benefits

Since July 1, 2005, Lumosa and its domestic subsidiaries have contributed 6% of each employee's monthly salary to individual pension accounts managed by the Bureau of Labor Insurance, in accordance with the Labor Pension Act.

5.2 Talent Sustainability

Material Topic	5.2.2 Talent Development
Impact on the Company	Talent is the cornerstone of Lumosa's success. Investing in professional development enhances the Company's capacity for innovation, competitiveness, and long-term sustainability. A strong talent development framework enables Lumosa to attract and retain top-tier professionals, foster skill advancement, and cultivate a dynamic, growth-oriented workplace culture.
Policies/ Commitments	Lumosa is committed to providing diverse and continuous learning opportunities. The Company offers clear career development pathways and has established dedicated teams to design training programs tailored to various job levels and functions—covering both technical and managerial competencies. By fostering a supportive environment and offering competitive compensation and benefits, Lumosa strengthens employee engagement and satisfaction.
Short-term Goals	1. Internal and external training programs are designed to enhance innovation and competitiveness across all employee categories. 2. Technical and managerial skills are continuously refined to maintain the Company's leadership in pharmaceutical innovation. 3. New hire onboarding training completion rate: 100% 4. Functional training completion rate for new hires: 100% 5. Learning subsidies are provided to support employees in developing workplace competencies.
Mid-, Long-term Goals	1. Employees are offered personalized training programs to support their career progression. 2. Functional training for new hires has consistently achieved a 100% completion rate.
Resource Investments and Practical Actions	1. Annual budgets are allocated to support participation in external professional conferences and certification programs. Internal knowledge-sharing sessions are held to promote learning and application. 2. Managerial training is reinforced to develop future-ready leaders. 3. Cross-functional project collaboration enhances practical experience and problem-solving capabilities. 4. Performance evaluations, incentive programs, and promotion opportunities are aligned to encourage continuous learning and value creation.

5.2 Talent Sustainability

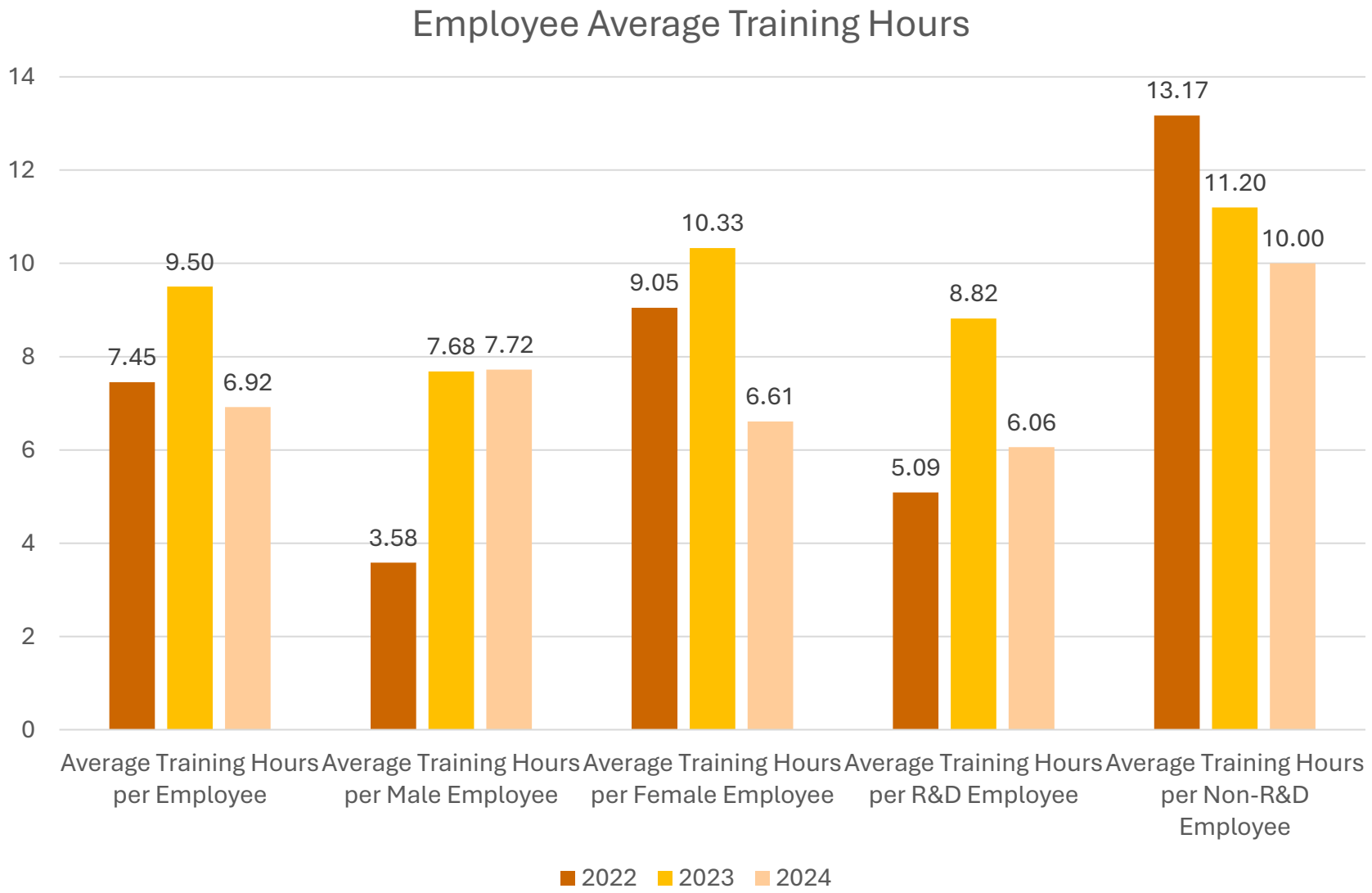
Material Topic	5.2.2 Talent Development
2024 Performance Results	Participation in international professional conferences: 5 instances Functional training completion rate for new hires: 100% Total training hours in 2024: 221.44 hours Average training hours per employee: 6.92 hours
Responsible Division	Business Administration Division e-mail: esg@lumosa.com.tw

Employee Training Statistics

Item	2022	2023	2024
Number of Employees	41	35	32
Total Annual Training Hours	305.45	332.5	221.44
Average Training Hours per Employee	7.45	9.50	6.92
Average Training Hours per Male Employee	3.58	7.68	7.72
Average Training Hours per Female Employee	9.05	10.33	6.61
Average Training Hours per R&D Employee	5.09	8.82	6.06
Average Training Hours per Non-R&D Employee	13.17	11.20	10.00

Note: Average training hours per employee = (Total training hours for all employees during the year / Total number of employees at year-end)
Note: Average training hours per female employee = (Total training hours for female employees during the year / Total number of female employees at year-end)
Note: Average training hours by employee category = (Total training hours for a specific category / Total number of employees in that category at year-end)

5.2 Talent Sustainability



5.2 Talent Sustainability

Competency Development

Lumosa values internal talent and knowledge continuity. The Company rehired retired executives as senior advisors to support drug development and international regulatory compliance. In 2023, one retired executive served as a drug development consultant and another as an intellectual property advisor. Lumosa actively promotes career development, encouraging participation in professional training and international conferences to enhance skills and global perspective. Internal knowledge-sharing sessions further support collective growth and ensure employees remain professionally competitive.

Labor-Management Communication

Although Lumosa has not established a labor union or signed a collective agreement, it holds labor-management meetings in accordance with legal requirements. In 2024, four such meetings were held. Management representatives included senior executives and HR leaders, while labor representatives were elected by employees and participated in negotiations to ensure their voices were heard.

Meeting outcomes are transparent and accessible. Employees may also submit feedback via suggestion boxes, labor representatives, or other channels. In 2024, there were no labor complaints, disputes, or mass layoffs. Should large-scale layoffs occur, Lumosa will comply with the Act for Worker Protection of Mass Redundancy, including a 60-day advance notice.

Image by Nisriina Aisy from Pixabay

5.3 Occupational Safety and Health

Lumosa upholds the principle that "protecting employee health and safety is a core corporate responsibility." The Company has established a Workplace Safety and Health Code, based on the Occupational Safety and Health Act, covering responsibilities, equipment management, workflows, training, and incident response. All employees are included in the safety management system. Operating primarily in office environments, Lumosa assigns dedicated safety personnel and conducts regular HVAC inspections to ensure air quality. In 2024, the Company achieved zero occupational injuries, zero occupational fires, and zero occupational illnesses.

Worker Participation, Consultation and Communication

The Workplace Safety and Health Code ensures a safe working environment and prevents accidents and occupational diseases. A dedicated employee suggestion box is managed by HR. In 2024, no occupational safety complaints were received.

Occupational Safety and Health Training for Workers

In compliance with safety regulations, Lumosa provides structured training to enhance awareness and emergency response capabilities:

- New hires or employees changing roles receive at least 3 hours of training, covering regulatory overviews and safety concepts.
- All employees undergo refresher training every three years, with a minimum of 3 hours.
- Specialized roles require certification, and hazardous equipment must be operated by qualified personnel.

Occupational health Services and health Promotion

Preventive measures are in place for repetitive tasks, shift work, and potential workplace violence. Regular health checkups and environmental risk assessments are conducted. On-site amenities include a gym, table tennis club, and various wellness programs. The Company sponsors an outdoor activity club to promote physical and mental well-being.

Contractor Management

Before contractors begin maintenance work, Lumosa verifies relevant certifications. If hazards are identified, safety gear is required. Safety personnel conduct periodic inspections during operations.

5.4 Social Engagement

Lumosa recognizes its role as a corporate citizen, interdependent with investors, employees, local communities, and other stakeholders. The Company actively fulfills its social responsibilities by partnering with local organizations across its operational sites to ensure resources reach those in genuine need. Through these efforts, Lumosa aims to contribute to a more inclusive and sustainable society.

Blood Drive

Participated in blood drive sponsored by Nangang Software Park in July

Center Laboratories Bootcamp

Lumosa supports recent graduates in gaining a deeper understanding of the current state and future trend of the biopharmaceutical industry, the Company's operational model, and the professional mindset expected in the workplace through Center Laboratories Bootcamp (CLB). The program also helps interns explore and clarify their potential career paths.

Beach Cleaning

33 People participated the Company-sponsored beach cleaning at Jinshan, on the northern coast of Taiwan in November. In all, 76.8 Kg (equivalent of 53.76 Kg CO2)of trash was removed

Appendix

Appendix 1 – GRI Index

Statement of Use	Lumosa Therapeutics Co., Ltd., has referred to the GRI Guidelines in reporting contents taken place between January 1, 2024 and December 31, 2024
GRI 1 Used	GRI 1: Foundation 2021
Applicable GRI Sector Standards	The Company operates in the Biotechnology and pharmaceutical industry; GRI has not yet issued sector-specific standards for this industry
Note	Topics marked with ★ indicate material topics

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
GRI 2: General Disclosures 2021					
The Organization and Its Reporting Practices	2-1	Organizational details	2.1 Company Introduction	29	
	2-2	Entities included in the organization's sustainability reporting	About This Report	5	
	2-3	Reporting period, frequency and contact point	About This Report	5	
	2-4	Restatements of information	About This Report	5	
	2-5	External assurance	About This Report	5	
Activities and Workers	2-6	Activities, value chain and other business relationships	2.1 Company Introduction	29	
	2-7	Employees	5.1 Employee Structure	99	
	2-8	Workers who are not employees	5.1 Employee Structure	99	
Governance	2-9	Governance structure and composition	1.1 Sustainability Development/ Organizational Chart of Lumosa ESG Sustainability Implementation Task Force 2.2 Organization 3.1 Governance Practices	9 31 35	
	2-10	Nomination and selection of the highest governance body	3.1 Governance Practices	35	
	2-11	Chair of the highest governance body	3.1 Governance Practices	35	
	2-12	Role of the highest governance body in overseeing the management of impacts	3.1 Governance Practices 3.2 Risk Management	35 50	

Appendix 1 – GRI Index

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
GRI 2: General Disclosures 2021					
Governance (cont'd)	2-13	Delegation of responsibility for managing impacts	3.1 Governance Practices 3.2 Risk Management	35 50	
	2-14	Role of the highest governance body in sustainability reporting	1.1 Sustainability development	9	
	2-15	Conflicts of interest	3.1 Governance Practices	35	
	2-16	Communication of critical concerns	3.1 Governance Practices	35	
	2-17	Collective knowledge of the highest governance body	3.1 Governance Practices	35	
	2-18	Evaluation of the performance of the highest governance body	3.1 Governance Practices	35	
	2-19	Remuneration policies	3.1 Governance Practices	35	
	2-20	Process to determine remuneration	3.1 Governance Practices	35	
	2-21	Annual total compensation ratio	--	--	Confidentiality restrictions / Classified as company confidential information
Strategy, Policies and Practices	2-22	Statement on sustainable development strategy	Chairperson's Message	3	
	2-23	Policy commitments	1.1 Sustainability Development	9	
	2-24	Embedding policy commitments	1.1 Sustainability Development	9	
	2-25	Processes to remediate negative impacts	3.1 Governance Practices 3.2 Risk Management	35 50	
	2-26	Mechanisms for seeking advice and raising concerns	About This Report 1.2 Identifying Key Stakeholders 3.4 Regulatory Compliance	5 12 60	

Appendix 1 – GRI Index

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
GRI 2: General Disclosures 2021					
Strategy, Policies and Practices (cont'd)	2-27	Compliance with laws and regulations	3.4 Regulatory Compliance	60	
	2-28	Membership associations	2.3 External Organization Participation	32	
Stakeholder Engagement	2-29	Approach to stakeholder engagement	1.2 Identifying Key Stakeholders	12	
	2-30	Collective bargaining agreements	5.2.4 Labor-Management Communication	113	Not applicable: the Company has not entered into a collective bargaining agreement
Economic Aspect					
★Operational Performance					
GRI 3: Material Topics 2021	3-3	Management of material topics	1.4 Identification of Material Topics	16	
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	3.5 Operational Performance	62	
	201-2	Financial implications and other risks and opportunities due to climate change	3.3 Climate-Related Financial Disclosures	54	
	201-3	Defined benefit plan obligations and other retirement plans	5.2.1 Compensation and Benefits	104	
	201-4	Financial assistance received from government	3.5 Operational Performance	62	
GRI 207: Tax 2019	207-1	Approach to tax	3.5 Operational Performance	62	
	207-2	Tax governance, control, and risk management	3.5 Operational Performance	62	
	207-3	Stakeholder engagement and management of concerns related to tax	3.5 Operational Performance	62	
	207-4	Country-by-country reporting	3.5 Operational Performance	62	

Appendix 1 – GRI Index

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
Economic Aspect					
★Innovation and Research & Development					
GRI 3: Material Topics 2021	3-3	Management of material topics	1.4 Identification of Material Topics	16	
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	3.6 Innovation and Research & Development	66	
★Drug Safety					
GRI 3: Material Topics 2021	3-3	Management of material topics	1.4 Identification of Material Topics	16	
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	3.8 Drug Safety	74	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	3.4 Regulatory Compliance	60	
★Safety of Clinical Trial Participants					
GRI 3: Material Topics 2021	3-3	Management of material topics	1.4 Identification of Material Topics	16	
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	3.7 Safety of Clinical Trial Participants	71	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	3.4 Regulatory Compliance	60	
★Safety of Clinical Trial Participants					
GRI 3: Material Topics 2021	3-3	Management of material topics	1.4 Identification of Material Topics	16	

Appendix 1 – GRI Index

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
Economic Aspect					
★Drug Safety					
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	3.7 Safety of Clinical Trial Participants	71	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	3.4 Regulatory Compliance	60	
Market Presence					
GRI 202: Market Presence 2016	202-2	Proportion of senior management hired from the local community	5.1 Employee Structure	99	
Indirect Economic Impacts					
GRI 203: Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported	5.4 Social Engagement	115	
Procurement Practices					
GRI 204: Procurement Practices 2016	204-1	Proportion of spending on local suppliers	3.10 Supplier Management	81	
Anti-corruption					
GRI 205: Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	3.4 Regulatory Compliance	60	
	205-2	Communication and training about anti-corruption policies and procedures	3.4 Regulatory Compliance	60	
	205-3	Confirmed incidents of corruption and actions taken	3.4 Regulatory Compliance	60	
Anti-competitive Behavior					
GRI 206: Anti-competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	3.4 Regulatory Compliance	60	

Appendix 1 – GRI Index

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
Environmental Aspect					
★Laboratory Waste Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	1.4 Identification of Material Topics	16	
GRI 306: Waste 2020	306-1	Waste generation and significant waste-related impacts	4.5 Laboratory Waste Management	93	
	306-2	Management of significant waste related impacts	4.5 Laboratory Waste Management	93	
	306-3	Waste generated	4.5 Laboratory Waste Management	93	
	306-4	Waste diverted from disposal	4.5 Laboratory Waste Management	93	
	306-5	Waste directed to disposal	4.5 Laboratory Waste Management	93	
Energy					
GRI 302: Energy 2016	302-1	Energy consumption within the organization	4.2 Energy Management	85	
	302-2	Energy consumption outside of the organization	4.2 Energy Management	85	
	302-3	Energy intensity	4.2 Energy Management	85	
	302-4	Reduction of energy consumption	4.2 Energy Management	85	
GRI 303: Water and Effluents2018	303-1	Interactions with water as a shared resource	4.4 Water Resources Management	85	
	303-2	Management of water discharge related impacts	4.4 Water Resources Management	85	
	303-3	Water withdrawal	4.4 Water Resources Management	85	

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Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
Environmental Aspect					
Water and Effluents					
GRI 303: Water and Effluents2018 (cont'd)	303-4	Water discharge	4.4 Water Resources Management	85	
	303-5	Water consumption	4.4 Water Resources Management	85	
Emissions					
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	4.3 Greenhouse Gas Management	89	
	305-2	Energy indirect (Scope 2) GHG emissions	4.3 Greenhouse Gas Management	89	
	305-3	Other indirect (Scope 3) GHG emissions	4.3 Greenhouse Gas Management	89	
	305-4	GHG emissions intensity	4.3 Greenhouse Gas Management	89	
	305-5	Reduction of GHG emissions	4.3 Greenhouse Gas Management	89	
	305-6	Emissions of ozone-depleting substances (ODS)	4.3 Greenhouse Gas Management	89	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	4.3 Greenhouse Gas Management	89	
Supplier Environmental Assessment					
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	3.10 Supplier Management	81	
	308-2	Negative environmental impacts in the supply chain and actions taken	3.10 Supplier Management	81	

Appendix 1 – GRI Index

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
Social Aspect					
★Compensations and Benefits					
GRI 3: Material Topics 2021	3-3	Management of material topics	1.4 Identification of Material Topics	16	
GRI 202: Market Presence 2016	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	5.2.1 Compensation and Benefits	104	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	5.1 Employee Structure	99	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	5.2.1 Compensation and Benefits	104	
	401-3	Parental leave	5.2.1 Compensation and Benefits	104	
GRI 402: Labor/Management Relations 2016	402-1	Minimum notice periods regarding operational changes	5.2.4 Labor-Management Communication	113	
★Talent Cultivation					
GRI 404: Training and Education 2016	3-3	Management of material topics	1.4 Identification of Material Topics	16	
	404-1	Average hours of training per year per employee	5.2 Talent Sustainability	103	
	404-2	Programs for upgrading employee skills and transition assistance programs	5.2 Talent Sustainability	103	
	404-3	Percentage of employees receiving regular performance and career development reviews	5.2 Talent Sustainability	103	
★Compensations and Benefits					
GRI 3: Material Topics 2021	3-3	Management of material topics	1.4 Identification of Material Topics	16	

Appendix 1 – GRI Index

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
Social Aspect					
★ Product Health and Safety					
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	3.9 Product health and Safety	77	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	3.4 Regulatory Compliance	60	
Occupational Health and Safety					
Occupational Health and Safety 2018	403-1	Occupational health and safety management system	5.3 Occupational Safety and Health	114	
	403-2	Hazard identification, risk assessment, and incident investigation	5.3 Occupational Safety and Health	114	
	403-3	Occupational health services	5.3 Occupational Safety and Health	114	
	403-4	Worker participation, consultation, and communication on occupational health and safety	5.3 Occupational Safety and Health	114	
	403-5	Worker training on occupational health and safety	5.3 Occupational Safety and Health	114	
	403-6	Promotion of worker health	5.3 Occupational Safety and Health	114	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	5.3 Occupational Safety and Health	114	
	403-8	Workers covered by an occupational health and safety management system	5.3 Occupational Safety and Health	114	
	403-9	Work-related injuries	5.3 Occupational Safety and Health	114	
	403-10	Work-related ill health	5.3 Occupational Safety and Health	114	
Diversity and Equal Opportunity					
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	3.1 Governance Practices 5.1 Employee Structure	35 99	
	405-2	Ratio of basic salary and remuneration of women to men	5.2.1 Compensation and Benefits	104	

Appendix 1 – GRI Index

Topic	Items Disclosed	Explanation	Chapter	Page Number	Omissions/Remarks
Social Aspect					
Non-discrimination					
GRI 406: Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	5.1.1 Human Rights Protection	99	
Freedom of Association and Collective Bargaining					
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	3.10 Supplier Management 5.1.1 Human Rights Protection	81 99	
Child Labor					
GRI 408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	3.10 Supplier Management 5.1.1 Human Rights Protection	81 99	
Forced or Compulsory Labor					
GRI 409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	3.10 Supplier Management 5.1.1 Human Rights Protection	81 99	
Supplier Social Assessment					
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	3.10 Supplier Management	81	
	414-2	Negative social impacts in the supply chain and actions taken	3.10 Supplier Management	81	
Customer Privacy					
GRI 418: Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	3.4 Regulatory Compliance	60	

Appendix 2 – SASB Sustainability Accounting Standards – Biotechnology & Pharmaceuticals Sector

SASB Topic	SASB Code	SASB Metric	Type	Unit	Reporting Commentary
Safety of Clinical Trial Participants	HC-BP-210a.1	Discussion, by world region, of management process for ensuring quality and patient safety during clinical trials	Discussion and Analysis	n/a	Chapter 3.7Safety of Clinical Trial Participants
	HC-BP-210a.2	Number of Inspections related to clinical trial management and pharmacovigilance that resulted in (1) entity voluntary remediation or (2) regulatory or administrative actions taken against the entity	Quantitative	Number	Clinical trial management: 2 cases Active pharmacovigilance: LT3001-203: 2 cases LT3001-205: 9 cases
	HC-BP-210a.3	Total financial losses from legal proceedings related to clinical trials of drugs in developing countries	Quantitative	Presentation currency	There were no legal proceedings related to clinical trials conducted in developing countries; as such, the total financial loss incurred was NT$0.
Access to Medicine	HC-BP-240a.1	Description of actions and initiatives to promote access to health care products for priority diseases and in priority countries as defined by the Access to Medicine Index	Discussion and Analysis	n/a	The Company did not participate in any related initiatives and has not implemented corresponding measures.
	HC-BP-240a.2	As a product on the PQP list of pre-qualified medicines	Discussion and Analysis	n/a	None of the Company's products are listed under the World Health Organization's Prequalification of Medicines Program (PQP).
Affordability and Pricing	HC-BP-240b.2	Percentage change in: (1) weighted average list price and (2) weighted average net price across U.S. product portfolio compared to previous reporting period	Quantitative	Percentage (%)	1) 0% 2) 0%
	HC-BP-240b.3	Percentage change: (1) pricing and (2) net price of products with the largest increase compared with the same period of the previous year	Quantitative	Percentage (%)	None, this is the first report by the Company

Appendix 2 – SASB Sustainability Accounting Standards – Biotechnology & Pharmaceuticals Sector

SASB Topic	SASB Code	SASB Metric	Type	Unit	Reporting Commentary
Drug Safety	HC-BP-250a.1	Products listed in pubic medical product safety or adverse event alert databases	Quantitative	n/a	No products from the Company have been included in public databases concerning medical product safety alerts or adverse event warnings.
	HC-BP-250a.2	Number of fatalities associated with products	Quantitative	Number	0
	HC-BP-250a.3	Number of recalls issued and the total units recalled	Quantitative	Number	Number of recalls issued: 0 Total units recalled: 0
	HC-BP-250a.4	Total amount of product accepted for takeback, reuse, or disposal	Discussion and Analysis	Metric tons (t)	The Company has not received any recycled, reused or disposed products.
	HC-BP-250a.5	Number of FDA enforcement actions taken in response to violations of current Good Manufacturing Practices (cGMP), by type	Quantitative	Number	No relevant incidents were reported.
Counterfeit Drugs	HC-BP-260a.1	Detail of the methods and techniques to maintain product traceability and prevent counterfeiting throughout the supply chain	Discussion and Analysis	n/a	Anti-counterfeiting labels are used
	HC-BP-260a.2	Discussion of process for alerting customers and business partners of potential or known risks associated with counterfeit products	Discussion and Analysis	n/a	All products are dispensed by prescription through licensed medical professional in medical institutions and are not available for direct purchase by the general public.
	HC-BP-260a.3	The number of searches, seizures, arrests, or criminal proceedings related to counterfeit drugs	Quantitative	Number	0
Ethical Marketing	HC-BP-270a.1	Total amount of monetary losses as a result of legal proceedings associated with false marketing claims	Quantitative	Presentation currency	t There were no legal claims arising from misleading marketing content; therefore, the total financial loss incurred was NT$0.
	HC-BP-270a.2	Description of code of ethics governing promotion of off-label use of products	Discussion and Analysis	n/a	As all products are prescribed by physicians within medical institutions and not accessible to the general public, ethical guidelines are not specifically noted in the product inserts.

Appendix 2 – SASB Sustainability Accounting Standards – Biotechnology & Pharmaceuticals Sector

SASB Topic	SASB Code	SASB Metric	Type	Unit	Reporting Commentary
Employee Recruitment, Development & Retention	HC-BP-330a.1	Explain the recruitment and retention of scientists and R&D personnel	Discussion and Analysis	n/a	Refer to Section 5.2 Talen Sustainability
	HC-BP-330a.2	(1) Voluntary departure rate (2) involuntary departure rate: (a) senior managers, (b) middle-level managers, (c) professionals (d) others	Quantitative	Percentage (%)	In 2024, one employee was involuntarily separated from the Company, representing 3.1% of the total workforce. All other departures were voluntary and attributed to career planning. The overall turnover rate was 5.1%.
Manufacturing & Supply Chain Quality Management	HC-BP-430a.1	Confirm the (1) physical facilities and (2) percentage of primary supplier facilities for those participating in the Rx-360 international pharmaceutical supply chain alliance review plan or equivalent third-party review plan to ensure supply chain quality and drug ingredient integrity	Quantitative	Percentage (%)	No relevant incidents were reported.
Business Ethics	HC-BP-510a.1	Total amount of monetary losses as a result of legal proceedings associated with corruption and bribery	Quantitative	Presentation currency	No relevant incidents were reported.
	HC-BP-510a.2	Description of code of ethics governing interactions with health care professionals	Discussion and Analysis	n/a	Chapter 3.4
Operative Activities Indicator	HC-BP-000.A	Number of patients receiving treatment	Quantitative	Number	29,777
	HC-BP-000.B	1. Number of drugs in product pipeline 2. Number of drugs under development (phase 1-3)	Quantitative	Number	1. Product pipeline: 1 2. Number of drugs under development: Phase 1 predevelopment assessment x5 Phase 2 Under development x3 Phase 3 Registered x0

Appendix 3: TCFD Disclosure Mapping

Aspect	TCFD Disclosure	Corresponding Chapter/Section
Governance	Board Oversight of Climate-Related Risks and Opportunities	3.3 Climate-Related Financial Disclosures
	Role of Management in Assessing and Managing Climate-Related Risks and Opportunities	3.3 Climate-Related Financial Disclosures
Strategy	Identified Short-, Medium-, and Long-Term Climate-Related Risks and Opportunities	3.3 Climate-Related Financial Disclosures
	Impact of Climate-Related Risks and Opportunities on the Company's Business, Strategy, and Financial Planning	3.3 Climate-Related Financial Disclosures
	Resilience of the Company's Strategy, Taking into Consideration Various Climate-Related Scenarios	3.3 Climate-Related Financial Disclosures
Risk Management	Processes for Identifying and Assessing Climate-Related Risks	3.3 Climate-Related Financial Disclosures
	Processes for Managing Climate-Related Risks	3.3 Climate-Related Financial Disclosures
	Integration of Climate Risk Identification, Assessment, and Management into the Company's Overall Risk Management Framework	3.3 Climate-Related Financial Disclosures
Metrics and Targets	Metrics Used to Assess Climate-Related Risks and Opportunities in Line with the Company's Strategy and Risk Management Process	3.3 Climate-Related Financial Disclosures
	Disclosure of Scope 1, Scope 2, and, where applicable, Scope 3 Greenhouse Gas Emissions and Associated Risks	3.3 Climate-Related Financial Disclosures
	Targets Used to Manage Climate-Related Risks and Opportunities and Performance Against These Targets	3.3 Climate-Related Financial Disclosures

Appendix 4: Climate-Related Disclosures for TPEx-Listed Companies

Climate Change Risks and Opportunities Facing the Company and Corresponding Mitigation Measures

Items	Status
1. Provide a description of the Board of Directors' and senior management's oversight roles as well as governance practices pertaining to climate-related risks and opportunities faced by the entity.	• The Board serves as the highest decision-making body for climate risk governance at the Company. It is responsible for defining the Company's risk appetite, strategic direction, and operational plans, while maintaining ongoing oversight of climate-related risk management and disclosures. The Board holds ultimate accountability for enterprise-wide risk management. • Senior management is tasked with ensuring the effectiveness of the climate risk management framework and policies, establishing internal processes for climate risk governance, and implementing necessary measures in response to identified risks. • In 2024, Lumosa established an ESG Sustainability Task Force, chaired by the President. The task force convenes on an ad hoc basis to discuss climate-related risks and opportunities arising from operational activities. Moving forward, the task force will compile annual progress reports for submission to the Board to support strategic climate discussions.
2. Describe how the identified climate-related risks and opportunities may impact on the entity's business operations, corporate strategies, and financial performance over the short, medium, and long-term horizons	• Referencing the 2024 matrix of short-, medium-, and long-term climate risks and opportunities, the Company defines short-term as 1–3 years, medium-term as 3–5 years, and long-term as 6–10 years, aligned with its decade-long strategic planning horizon. • Lumosa identifies climate risk as a material operational risk. Climate change and global warming pose significant threats across the value chain—from upstream suppliers to internal operations and downstream customer demand. To fully understand the potential impacts and opportunities, the Company prioritizes climate-related issues that could materially affect financial performance, alter business strategy or models, or extend across the value chain, and develops targeted mitigation and management strategies accordingly.
3. Describe the impact of extreme climate events and transitions on the entity's financial performance.	Identified Transition Risks: 1. Enhanced Emissions Reporting Requirements: Financial implications include increased compliance costs due to investments in emissions monitoring and reporting systems. Greater transparency may affect investor confidence, potentially influencing capital costs and credit ratings. Non-compliance could result in fines or legal liabilities. 2. Litigation Risk: Exposure to climate-related lawsuits could lead to substantial legal expenses, compensation payouts, share price volatility, and credit downgrades, ultimately undermining financial stability and investor confidence. 3. Rising Raw Material Costs: Extreme weather events may disrupt supply chains, leading to shortages and price hikes. Increased input costs could erode margins and reduce competitiveness.

Appendix 4: Climate-Related Disclosures for TPEx-Listed Companies

Climate Change Risks and Opportunities Facing the Company and Corresponding Mitigation Measures

Items	Status
4. Describe how the climate risk identification, assessment and management processes are integrated into the overall risk management system.	• Lumosa identifies climate risk as a material operational risk. Climate change and global warming pose significant threats across the value chain—from upstream suppliers to internal operations and downstream customer demand. To fully understand the potential impacts and opportunities, the Company prioritizes climate-related issues that could materially affect financial performance, alter business strategy or models, or extend across the value chain, and develops targeted mitigation and management strategies accordingly. • Risk Management Process: 1. The Sustainability Task Force completes collection of greenhouse gas environmental background data, provides climate risk assessment and impact scope evaluation 2. Establish climate risk and opportunity inventory and develop internal operational impact assessment questionnaire 3. The Sustainability Task Force implements climate risk and opportunity impact analysis and determines high-priority risk items 4. Establish action strategies and target setting 5. Annual review by the Sustainability Task Force to discuss action strategy and target achievement effectiveness • Based on the 2024 TCFD-aligned risk assessment, the Company identified four key risks: enhanced emissions reporting obligations, litigation risk, rising raw material costs, and increased severity of extreme weather events such as typhoons and floods. Two opportunities were also identified: innovation in new products and services, and entry into new markets.
5. If scenario analysis is used to assess the resilience against climate change risks, please explain the scenarios used, parameters, assumptions, analytical factors, and key financial impacts.	The Company has not yet adopted scenario analysis.

Appendix 4: Climate-Related Disclosures for TPEx-Listed Companies

Climate Change Risks and Opportunities Facing the Company and Corresponding Mitigation Measures

Items	Status
6. If there is a transition plan for managing climate-related risks, please describe the contents of the plan, as well as the indicators and targets used to identify and manage physical risks and transition risks.	The two primary transition risks identified are enhanced emissions reporting obligations, litigation risk and rising raw material costs. Related action plans are detailed in the 2024 Climate Risk and Opportunity Response section. Key metrics and targets include: • Completion of a greenhouse gas inventory and enhanced public disclosures via the corporate website in 2024. • A target to reduce average GHG emissions by 3% by 2028, compared to 2023 levels.
7. If an internal carbon pricing is used as a planning tool, please explain the basis for determining the price.	The Company has not yet implemented an internal carbon pricing mechanism.
8. If climate-related targets are set, information such as the activities covered, scope of greenhouse gas emissions, planning period, and annual progress should be explained. If carbon offsets or renewable energy certificates (RECs) are used to achieve the relevant targets, the source and amount of carbon reductions offset or the amount of renewable energy certificates (RECs) should be stated.	Climate risk and opportunity response measures, along with defined performance indicators, are reviewed quarterly by the Sustainability Committee. The Company will evaluate the feasibility of carbon offsets or Renewable Energy Certificates (RECs) to support target achievement.
9. Greenhouse gas inventory and assurance status, as well as reduction targets, strategies, and specific action plans (Sections 1-1 and 1-2)	See table below

Appendix 4: Climate-Related Disclosures for TPEx-Listed Companies

1-1 Greenhouse Gas Inventory

Disclose the Emission (tons CO_2e), intensity (tons CO_2e/NT$ million revenue) and the scope of the data

Category	Fiscal year 2023		Fiscal year 2024		Verification Provider and Verification Status
Category 1 – Direct emissions	Total Emissions (metric tons CO_2e)	Intensity (metric tons CO_2e/NT$ million)	Total Emissions (metric tons CO_2e)	Intensity (metric tons CO_2e/NT$ million)	
Parent Company	N/A	N/A	N/A	N/A	Verification has not yet been conducted
Category 2 – Indirect emissions	Total Emissions (metric tons CO_2e)	Intensity (metric tons CO_2e/NT$ million)	Total Emissions (metric tons CO_2e)	Intensity (metric tons CO_2e/NT$ million)	
Parent Company	41.1040	0.7222	42.6825	1.0901	
Category 3 – Indirect emissions, other	Total Emissions (metric tons CO_2e)	Intensity (metric tons CO_2e/NT$ million)	Total Emissions (metric tons CO_2e)	Intensity (metric tons CO_2e/NT$ million)	
Parent Company	N/A	N/A	N/A	N/A	

Note: Consolidated revenue for fiscal year 2023 was NT$56.916 million; for fiscal year 2024, it was NT$39.154 million.

1-2 Greenhouse gas reduction targets, strategies, and specific action plans

Outline the Company's greenhouse gas emission reduction baseline year and corresponding data, reduction targets, strategies, specific action plans, and the extent to which reduction targets have been achieved.

The Company has set a target to reduce GHG emissions by an average of 3% by 2028 compared to 2023 levels.

- Shut down personal computers completely before leaving the office.
- Set idle computers to enter sleep mode.
- Unplug electrical appliances (e.g., rice cookers, ovens, chargers) after use.
- Turn off lights for one hour during the lunch break.
- Turn off lights when leaving meeting rooms.
- Clean the refrigerator regularly.
- In coordination with the building management committee, conduct regular inspections of air conditioning systems to enhance efficiency and reduce energy waste.

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BETTER THERAPY BRIGHTER OUTLOOK