



PLAYNITRIDE

2023

PlayNitride Inc.
Sustainability Report

Message from the Chairman

Since establishment, PlayNitride has been adhering to the concept of "Entrepreneurship with Perseverance" and is committed to the breakthrough and innovation of MicroLED technology. As MicroLED are an emerging display technology, there are numerous development opportunities in terms of production and products. In 2023, through the business model of turnkey solutions (production line establishment service), we increased production capacity to meet customer demand. Meanwhile, we look forward to joining hands with the upstream and downstream development and applications of the industry with innovative technology, welcoming the development prospect of MicroLED continuing to heat up.

We have long been focusing on the R&D of MicroLED technology, not only to upgrade and optimize the experience of existing displays, but also to explore and create "unprecedented" application areas that only MicroLED can achieve. At present, MicroLED have been applied to ultra-large TVs and transparent displays, and the energy consumption of products can be reduced to 10% of LCD and 50% of OLED. Transparent displays can realize a new generation of smart cockpits, such as car windows, windshields, etc. In addition, the 0.49-inch full-color FHD transparent display that breaks through the industry standard will open up the imagination of Metaverse AR/VR applications and bring unprecedented experiences to various application scenarios. In the next few years, MicroLED will become an important technology in human-machine interaction interfaces to be combined with technologies such as big data and the Internet of Things to create diverse terminal applications.



In the face of climate change, countries and leading companies around the world are committed to net-zero policies and climate risk responses. In 2023, we systematically identified the risks and opportunities brought by climate change based on the TCFD framework for the first time. Due to the high efficiency, low power consumption, and long lifespan of MicroLED, we have more advantages in a low-carbon economy. We will continue to focus on low-carbon and sustainable products and low-carbon processes, and plan response measures for related climate risks. We have integrated the spirit of environmental protection, social responsibility and corporate governance into our operations. Since 2021, we have set annual sustainability promotion goals and convene the Sustainability Committee on a regular basis to ensure the progress and performance of various goals. In an effort to practice carbon reduction, we voluntarily completed a GHG inventory in 2023 and passed third-party verification. At the same time, we are seeking more efficient process improvements to effectively reduce the amount of waste chemicals such as acetone, reducing the environmental impact from the process. As the first company listed on the Taiwan Innovation Board, PlayNitride continues to review and improve various management systems, enhance corporate governance performance, and plan human rights due diligence, striving to become an enterprise that values human rights, diversity, and equal opportunities. In addition, through the Supplier Code of Conduct formulated in 2023, we will work with supplier partners to provide customers with greener and more sustainable products and services. At the same time, we have introduced the education and training system, providing colleagues with an environment for continuous learning and growth to realize our vision together.

Sustainability is uninterrupted innovation. We will uphold the spirit of innovation, refine the development of key core technologies, continue to be committed to transforming innovation and technology into commercial value, and integrate ESG into operational strategies to respond to the support and expectations of all parties. We will continue to strive to pursue excellence and make unremitting efforts for sustainability.

Chairman and CEO

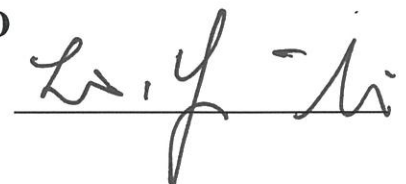


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About the Report

This report is the 2023 Sustainability Report (hereafter "the Report") of PlayNitride Inc. , disclosing PlayNitride's environmental (E), social (S), and governance (G) planning and practical actions for sustainability. As a global pioneer in the MicroLED industry, we are also the first company listed on the "Taiwan Innovation Board". As our operations develop and to respond to stakeholders' expectations, we have initiated the sustainable development promotion plan and periodically issue the Sustainability Report. Relevant information is as follows:

Scope of disclosure	<p>The reporting boundary covers PlayNitride's important operating locations. The economic performance covers all operating activities of all entities in the consolidated financial statements (including PlayNitride's Taiwan Branch, the subsidiary PlayNitride Display Co., Ltd., and the US subsidiary PlayNitride America Corporation). The implementation performance in social and environmental aspects is mainly based on the main operating site, Zhunan Science Park, Zhunan Town, Miaoli County. Information that has not been disclosed yet will take into consideration of the accuracy and completeness of the information collected. We will develop a collection mechanism and will include the disclosure scope in the coming years. The scope of disclosure will not be explained in subsequent reports. In addition, taking into account the comparability of the information, the principle is to disclose the data of the past three years. Except for some performance information that has not been systematically collected, only the data of 2023 is disclosed,</p>
Reporting period and frequency	<p>This is the third issue of the Sustainability Report of PlayNitride. The report is issued once a year. The reporting period of this report is from January 1, 2023 to December 31, 2023.</p> <p>Previous issue: September 2023 Current issue: August 2024</p>
Applicable standards	<p>The Technology and Communications - Semiconductors in the GRI Standards of the Global Reporting Initiative (GRI) of the Sustainability Accounting Standards Board (SASB) has been used as the basis for the preparation of the Report.</p>
Management approach	<p>The data and financial performance disclosed in the Report are based on the consolidated financial statements certified by CPAs. All financial figures are denominated in NTD and the financial data are disclosed based on the IFRSs. All other data in the report were obtained through internal compilation and statistics. Values are rounded to the nearest whole number and expressed in generally accepted numerical terms.</p> <p>The data and information disclosed in the report were provided by the responsible departments to the report working groups for the compilation of this report. The completed report was sent to each department head and the Chief Sustainability Officer for verification. After the Report was reviewed by the Chairman & CEO, the internal review process was completed and the Report was submitted to the Board of Directors for approval prior to disclosing the Report on PlayNitride's official website.</p>
Contact information	<p>If you have any questions regarding this report or any suggestions for PlayNitride, please do not hesitate to contact us through the following methods.</p> <p>Company address: No. 13 Kezhong Rd., Hsinchu Science Park, Zhunan Township, Miaoli County Company tel.: +886-37-586610 Mr. Yeh E-Mail: esg@playnitride.com Company website: https://www.playnitride.com/corpesg/</p>

1. About PlayNitride

1-1 Company Profile

PlayNitride was listed on the Innovation Board of TWSE in August 2022, making it the first company listed on the Innovation Board. PlayNitride Inc. was established in February 2014 and an investment holding company was set up in the Cayman Islands. “PlayNitride Inc. Taiwan Branch (Cayman)” was set up in June of the same year. In 2016, we established subsidiary “PlayNitride Display Co., Ltd.” and in May 2023, PlayNitride America Co. was established.

As a global leader in MicroLED technology and applications, we focus on the R&D, manufacturing, and sales of MicroLED displays, which can be applied to ultra-large displays, vehicles, and wearables. Through innovative R&D and diversified business models, we have now become one of the leading manufacturers in the field of MicroLED technology to provide customers with maximized value.

Company Name	PlayNitride Inc.
Stock Code	6854
Chairman	Charles Li
Established	February 25, 2014
Publicly Listed	August 18, 2022 (listed on TWSE’s "Taiwan Innovation Board")
Business Headquarters	No. 13 Kezhong Rd., Hsinchu Science Park, Zhunan Township, Miaoli County, Hsinchu Science Park
Operating Locations	Taiwan, USA
Service	R&D, manufacturing, and sales of MicroLED displays
Goods/Services	<ul style="list-style-type: none"> ✧ Pixel-type Chip-on-Carrier (COC) ✧ Technical services ✧ Turnkey solution (production line construction service)
Registered Capital	NTD 1.071 billion (as of the end of 2023)
Employees	444 (end of 2023)
Revenue	NTD 943 million (2023)

Vision and Mission

Guided by our vision, mission, and values, we will strive to achieve breakthroughs in MicroLED technology and applications, bring people a brand-new visual experience, promote technological progress, emphasize sustainable development, and create a better future.

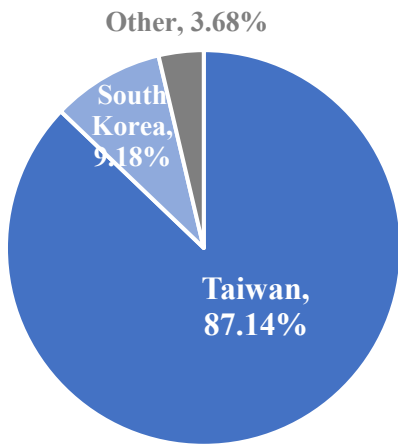
Vision

- Become the world's leading supplier of MicroLED technology and products, and lead the transformation of the world's technology and display technology. We will be driven by technological innovation to develop the most advanced, high-quality MicroLED display solutions and apply them to various fields, from consumer electronics to various commercial and industrial applications.

Mission

- Through innovation and exceptional technology, we provide outstanding MicroLED products and services to customers around the world. We are committed to promoting breakthroughs in display technology to provide people with an excellent visual experience and comprehensive solutions.

Locations of Product Sold in 2023



As a provider of MicroLED display technology, PlayNitride sells to domestic and foreign display terminal brands, car manufacturers, automotive display assembly suppliers, and panel manufacturers. Their related end applications include ultra-large TVs, smart cockpit automotive displays, wearables, AR/VR displays, etc. In 2023, our turnover for COCs reached a record high. At the same time, we signed production line construction contracts with customers, making the operating revenue in 2023 reach NTD 940 million, an increase of approximately 133.53% compared to 2022. In addition to introducing MicroLED into actual products, we continue to demonstrate the possibilities and opportunities in various fields, including a variety of 9.38-inch transparent displays with different characteristics and the stunning features in different applications, 0.49-inch single-chip full-color displays with 4536 PPI and FHD specifications in different application areas, MicroLED displays, video wall displays with pitches of 0.75 mm/0.833 mm and 0.43 mm of pitch LED Matrix Cube Display, and the use of MicroLED as mirror light panels to replace OLED to reshape interactive installation art, etc. Please refer to 3-1 Product Advantages for details.

In 2024, with the rising demand for MicroLED displays and the promotion of application diversification, besides moderately expanding MicroLED production capacity, we will also provide sufficient production capacity through the business model of providing turnkey solutions to meet the needs of customers in MicroLED TVs and MicroLED watches. In addition, through the sales and technology licensing of the self-developed mass transfer equipment and mass repair equipment, we are accelerating the vigorous development of the MicroLED industry and creating another outlet for our sustainability. In terms of new product deployment, the Company aims to expand its customers by producing products such as transparent displays, high-resolution automotive displays, wearable displays, and high-resolution full-color micro displays that can be applied to the Metaverse.

A few years after the MicroLED display technology launched the next-generation display technology, MicroLED products have blossomed and won awards at CES 2024, the largest international consumer electronics show in the US, triggering a new wave of official market growth. Whether it is the astonishing debut of MicroLED TVs or a series of automotive MicroLED display applications, they all fully demonstrate the substantial impact and significant progress that MicroLED have brought to the display field. As MicroLED technology continues to make breakthroughs, it will be expanded to more different types of application models in the future, driving the overall market economic output value. We believe that MicroLED displays will develop vigorously in the next few years, driving strong market demand. With the most advanced MicroLED technology and the widest customer base, PlayNitride plays an essential role in leveraging its operational advantages to lead the industry as a whole.

1-2 Products and Services

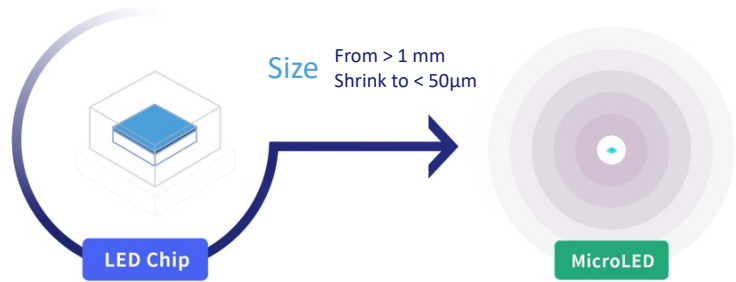
What is MicroLED?

MicroLED are to miniaturize and matrix the structure of the light emitting diode (LED), remove the LED package and substrate, and retain only the epitaxial film, so that the size of the MicroLED chip can be reduced from 1mm to 50 μm ^{Note} or less (length reduced by more than 20 times), and each pixel can be addressed and driven to light up independently.

Millions of MicroLED wafers at the micron (μm) level are transferred with a “mass transfer” method to a driver backplane with circuit structure design. Display applications of various sizes and fields are created with different driver technologies.

MicroLED displays can be used in a variety of display scenarios, covering ultra-large displays, automotive, wearables, etc. Whether it is an upgrade of the user experience of existing displays or brand-new applications that have not yet emerged, MicroLED have demonstrated their outstanding specifications and product advantages as new generation of displays that "inherit the future".

Note: 1mm (millimeters) = 0.1 centimeters, 1 μm (microns) = 0.001mm, and the diameter of one hair is about 50-100 μm .

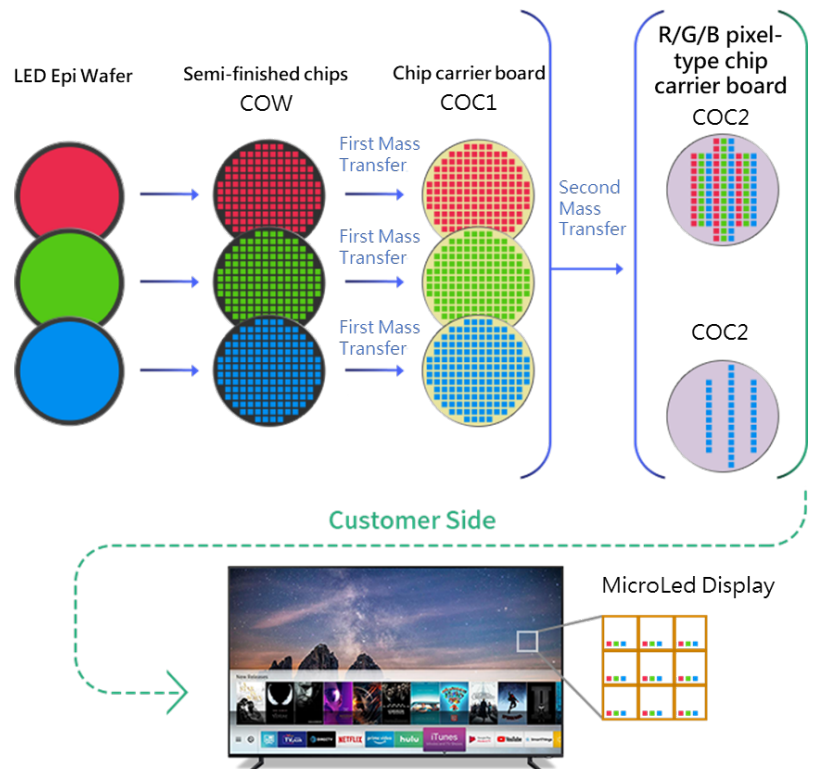


MicroLED Process

In the production process of MicroLED displays, chips of three colors R (red), G (green), and B (blue) need to be transferred from their respective epitaxial wafers to the temporary storage substrate, and then transferred according to the pixel size of the display. The wafers are arranged in the correct position to facilitate the subsequent bulk transfer process.

The storage substrate mentioned above is the chip on carrier (COC) invented by PlayNitride and has become an industry standard.

For detailed introduction, see [the Company's official website](#).

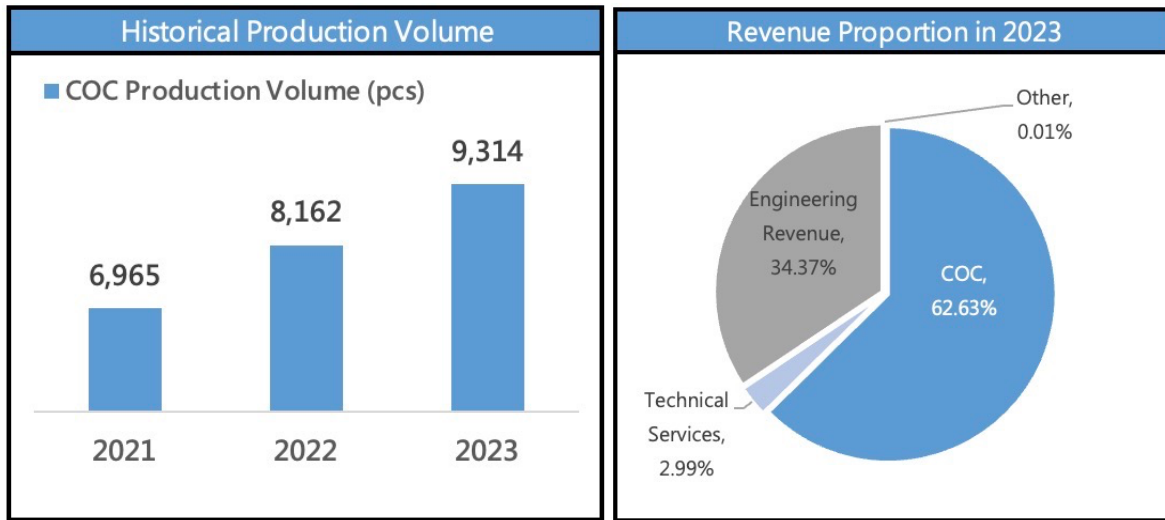


Product/Service Introduction

Our products are mainly 6-inch COCs and MicroLED display samples. We also provide customers with technical services and turnkey solutions), and gradually expand the production capacity of MicroLED through innovative business models in an effort to cater to customer needs. Sales and services of mass transfer equipment are expected to be added in 2024.




As a leader of MicroLED solutions, we have been developing MicroLED applications in different areas year by year, and are working with world-renowned brand customers to explore more application areas that have not received much attention. We have also developed standard products for sale for major application types, while evaluating and discussing the possibility of customized products to accelerate the realization of MicroLED commercialization and expand its future market scale.

Production Value and Output Over the Years



Note 1: In addition to the production and sale of finished products, the output of the Company's production lines includes internal R&D use.

Note 2: The unit of COC is pieces. As there is no consistent unit of measurement for technical services, engineering revenue, and other products, the production volume could be counted.

Products and Services	Main Application Areas	
COC (Chip on Carrier)		
<p>6" Red MicroLED COC</p> <hr/> <p>6" Green MicroLED COC</p> <hr/> <p>6" Blue MicroLED COC</p>	<p>The COC process is the key to MicroLED. We mainly use the excellent epitaxy technology and mass transfer technology of the Company to transfer the MicroLED chips from the primary epitaxial wafer to the storage substrate, and arrange them according to the customer's needs to form the finished products of MicroLED display products.</p>	
Different Drives for Different Applications		
<p>PixelLED Display MicroLED Display</p>	<p>It has a variety of features such as high transparency, high contrast, free flexibility, high reliability, and ultra-high brightness. In 2023, the Company launched a 9.38-inch standard PixelLED Display MicroLED Display with a transparency higher than 65%/brightness higher than 3000 nits, for the automotive and aviation industry to evaluate the next-generation ultimate display that can be used for the front windshield/instrument panel and side windows.</p>	 <p>The image shows a transparent display panel with the 'PIXELED Display' logo at the top. The panel displays a vibrant, colorful scene of a galaxy or nebula, demonstrating its high transparency and brightness.</p>
<p>PixelLED Matrix MicroLED Display (unit module)</p>	<p>Applied to large display signage boards, it can provide P0.3~P0.9 (dot pitch 0.3~0.9mm) seamless, any resolution and size splicing display, which can meet the needs of special size design in hypermarkets, hotels, airports and museums. completed.</p>	 <p>The image shows a large, colorful display board with the 'PIXELED MATRIX' logo at the top. The board displays a vibrant, multi-colored pattern of flowers or abstract shapes, demonstrating its high resolution and seamless splicing capabilities.</p>
<p>μ-PixeLED MicroLED Display</p>	<p>Ultra-thin micro displays with ultra-high brightness and fine image quality are the key to AR glasses. 0.49" FHD full-color reference panels will be promoted to leading AR manufacturers to facilitate rapid assessment and discussion of custom products.</p>	 <p>The image shows a small, square micro-display panel with the 'μ-PIXELED' logo at the top. The panel displays a vibrant, multi-colored pattern, demonstrating its ultra-thin profile and high brightness.</p>

1-3 Value Chain

In order to ensure the development of the end sales market for MicroLED products, we replace competition with cooperation with the upstream and downstream supply chains, and form a close relationship between the upstream and downstream of the

MicroLED supply chain through strategic alliances. In addition, through years of R&D experience and relationship with customers, we conduct customized R&D and design for customers, continue to respond to future market demand, develop products with feasibility for mass production, and grasp the leading advantage.

Industry Chain Connections

The MicroLED industry focuses mainly on the research, development, manufacture and sale of applications related to nitride semiconductor materials. We also develop and design prototypes based on customer specifications. The prototypes are passed to the customer for trial production. Products that pass testing can then be mass produced and sold. Correlation between the upstream, mid-stream and down-stream parts of the MicroLED industry:

Upstream	Midstream	Downstream
<ul style="list-style-type: none"> • Material Supplier: Glass, sapphire substrates, targets, and semiconductor-related chemicals • Touch Control IC Supplier: Driver ICs, timing controllers, SoCs, etc. 	<ul style="list-style-type: none"> • Chip Manufacturers and Display Module Manufacturer: Mass transfer, detection, and remediation • Thin-Film Transistor Liquid Crystal Display Plant (TFT-LCD): Epitaxial wafers and MicroLED 	<ul style="list-style-type: none"> • Various display terminal demand manufacturers: 3C electronic products, electric vehicles, AR glasses, and public displays, etc., for applications in various sizes and fields

1-4 Participation in Public Associations

At PlayNitride, we hope to gather the strength of the upstream and downstream of the industry chain to develop the MicroLED business ecosystem in Taiwan. Therefore, we actively participate in relevant associations and organizations to gather strength and accelerate the pace of technological innovation and market promotion.

Participation in Associations and Organizations	Roles
Taiwan Optoelectronics Semiconductor Industry Association (TOSIA)	Vice Chairman
TOSIA - Industry Development and Technology Committee of Taiwan MicroLED SIG	Chairperson
Taiwan Display Union Association (TDUA)	Supervisor
Taiwan Panel & Solution Association (TPSA)	Executive Director, Vice Chairman of the Technical Committee, Vice Chairman of the International Committee
Taiwan Display Materials & Devices Association (TDMDA)	Executive Director
Society for Information Display (SID Taipei Chapter)	Director
Taiwan Electronical and Electric Manufacturers' Association (TEEIA)	Member
The Society for Information Display (SID)	Member
Smart Display Industrial Alliance (SDIA), the Industrial Development Administration, MOEA - Smart Mobility SIG Group	Member
Taiwan Photonics Society (TPS)	Member
Photonics Industry & Technology Development Association (PIDA)	Member
Maskless Lithography Industry Alliance	Member
SEMI	Member
International Commission on Illumination (CIE)	Member

1-5 Milestones

Important Milestone	
2023	<ul style="list-style-type: none"> • General Enterprise Award in the Information and Communication category of "The 8th National Industrial Innovation Award of the Ministry of Economic Affairs" (2023) • Won the "Best MicroLED Technology Award", "Best AR/VR/MR Module/Product Award" and "Best Medium-sized Booth Award" at SID Display Week • Chairman & CEO Charles Li won the Outstanding Contribution Award at the Gold Panel Awards 2023 • Won the Gold Panel Awards 2023 Technology Excellence Award • Subsidiary, PlayNitride Display Co., Ltd., signed a cooperation contract with AUO to assist AUO in the construction of a 6-inch MicroLED COC production line.
2022	<ul style="list-style-type: none"> • PlayNitride Inc. was listed at NTD 105 per share on August 18, 2022, becoming the first company listed on the Innovation Board of the Taiwan Stock Exchange (stock code: 6854). • Won the Gold Panel Awards 2022 Technology Excellence Award • Won the "Best Display Technology" and "Best Medium-sized Booth" awards at SID Display Week • Won the Gold Award at the 2022 SDIA Awards • Won the Hsinchu Science Park 42nd Anniversary Product Innovation Award • Named as one of the 2022 Red Herring Top 100 Global • Subsidiary, PlayNitride Display Co., Ltd., signed a cooperation contract with Epistar to assist Epistar in the construction of a 6-inch MicroLED COW production line.
2021	<ul style="list-style-type: none"> • Chairman and CEO Charles Li appointed as the Chairman of MicroLED SIG (Special of Interest Groups) for connecting the upstream, midstream and downstream parts of the MicroLED supply chain • Hsinchu Science Park 41th Anniversary Product Innovation Award
2020	<ul style="list-style-type: none"> • Won Taiwan Gold Panel Award • Won Innovative Product Award at TDS Awards • Hsinchu Science Park 40th Anniversary Product Innovation Award • Chairman & CEO Charles Li presented with special contribution award by the Society for Information Display in the U.S. in recognition of Dr. Li and his team at PlayNitride's accomplishments in MicroLED technology development and commercialization.
2019	<ul style="list-style-type: none"> • First MicroLED production line opened. • Won the "Best Display Technology" and "Best Booth" awards at SID Display Week

Product Development History

Year	Item	Description
2023	9.38" ultra-clear, high-brightness, high-resolution (114 PPI), 65% transparency, greater than 2000 nits ultra-high brightness MicroLED transparent display	In collaboration with the Industrial Technology Research Institute (ITRI), we have introduced the transparent display products of ITRI at Xpark in Taoyuan to create "moving deep-sea specimens" through brand-new methods. Visitors are able to bring the originally static specimens back to life through motion sensory interaction.
2022	0.49" Single-Panel AR Full-color MicroLED Display with Highest Pixel Density in the World	Developed the first 0.49-inch 4,536 PPI high-resolution AR full-color MicroLED display, which won the Best New Display Technology award at the 2022 Smart Display Exhibition.
2021	World's First 89" Ultra-wide Curved Stitched MicroLED Display	The first 89" ultra-wide curved stitched MicroLED display in the world was made from 5" unit modules. Large signage can be custom-built to customer requirements. The product won the Hsinchu Science Park Product Innovation Award.
	0.39" Single-Panel AR Full-color MicroLED Display with Highest Pixel Density in the World	The first 0.39" 1141ppi high-definition AR full-color MicroLED Display was unveiled at 2021 Touch Taiwan as our formal entry into the Metaverse industry.
2020	9.4" Flexible Active MicroLED Display	The 9.4" flexible active MicroLED display was revealed in partnership with AUO for applications such as automotive displays. We also took part in the 2020 Gold Panel Awards organized by the Taiwan Display Union Association (TDUA) and received the best technology award.
2019	7.56" Transparent 3-sided Micro-edge Bezel MicroLED Display	Partnered with Tianma to reveal the world's first active 7.56" MicroLED display at SID Week in San Jose, winning the "People's Choice Award - Best Small Booth" and "Best Display Technology."

2. Sustainability Topic Management

2-1 Sustainability Policy and Operations

Sustainability Committee

The Company has formulated the "Sustainable Development Best Practice Principles", and established the "Sustainable Development Committee" in 2021, serving as the highest-level sustainability decision-making center within the Company. The Chairman & CEO serves as the chair of the Committee and the Chief Sustainability Officer (also the Chief Strategy Officer) is responsible for the actual execution. The Committee members include chief executives from different functional departments. They are responsible for formulating the Company's sustainability management policies and goals, and formulating medium and long-term sustainable development plans, drawing up and proposing and implementing relevant management policies. The Chief Sustainability Officer reports on the implementation status and future work plans to the Board of Directors quarterly. In 2023, the Chief Sustainability Officer reported on the results of the implementation of the annual environmental, social and governance objectives to the Board of Directors in March, May, August, October, and November. The Board of Directors regularly listens to the management team's reports and strategic planning, assesses the possibility of strategic success, reviews the strategic progress, and urges the management team to make adjustments if necessary. In addition, according to the Action Plan for Sustainable Development for Listed Companies, it is expected that a functional committee for sustainable development will be established in 2024.

The Sustainability Committee is a cross-departmental organization that is integrated horizontally. The Committee is divided into five working groups: corporate governance, climate governance, product development, environmental sustainability, and social sustainability. A work meeting is convened on a quarterly basis with the Chief Sustainability Officer serving as the general convener and Industrial Safety Department as the executive secretary. The Committee regularly confirmed the quarterly progress, GHG inventory progress and results, action plans, and implementation results of each department's ESG targets and plans for 2023. As well as this, the Committee also shares the latest domestic or international policies or trends to strengthen the consensus and sustainability knowledge of all executives to ensure that the sustainable development strategy is fully implemented in the Company's daily operations. While we realize our corporate vision, we also consider the impact on the economy, environment, and society in order to create value for all stakeholders.

Organizational Chart of the Sustainability Committee



2023 Sustainable Development Goals and Achievements - Governance Issues

	Sub-issue	Short-term Targets (2023)	Implementation Status	2024 Targets
Corporate Governance	Risk Management	<ul style="list-style-type: none"> Strengthen the effectiveness of emergency response management 	<ul style="list-style-type: none"> Completed one new disaster response procedure - electric vehicle fire emergency response procedure Completed two themed emergency response training sessions for the rescue and engineering teams. 	<ul style="list-style-type: none"> Implement the machine safety mechanism, complete the inspection and improvement of the safety standard of the machine interlocking switches, and ensure the safety of the machines.
Operational Performance	Sustainability Disclosure	<ul style="list-style-type: none"> Periodical publication of Sustainability Report in accordance with the regulations for public companies. 	<ul style="list-style-type: none"> The 2022 report in both Chinese and English was published in September 2023 	<ul style="list-style-type: none"> The 2023 report is expected to be completed and published before the end of June.
Ethical Corporate Management	Business Ethics	<ul style="list-style-type: none"> Completed the code of conduct promotion and education training for all employees. 	<ul style="list-style-type: none"> Established and included in the regular implementation items. The training completion of all newcomers was 100% and the training completion of all employees was 96.14%. 	<ul style="list-style-type: none"> Continue to educate new recruits on ethical corporate management regulations, and provide retraining on ethical corporate management for in-service employees and directors.
Innovation Management	Sustainable Design	<ul style="list-style-type: none"> Develop and confirm the panel repair process to reduce panel waste Reuse transfer jigs to reduce the use of new jigs 	<ul style="list-style-type: none"> Developed and repaired methods for panel anomalies and yield rate improvement, and improved the panel pass-through rate Reduced production tooling consumption by 20% 	<ul style="list-style-type: none"> Chip area ratio to be reduced Enhance luminous efficiency and reduce energy consumption
Sustainable Supply Chain	Supply Chain Management	<ul style="list-style-type: none"> Formulate and publish Supplier Code of Conduct Formulate a Supplier Code of Conduct and require suppliers to sign and submit it back 	<ul style="list-style-type: none"> Completed Supplier Code of Conduct. Key supplier signing rate 87.50% 	<ul style="list-style-type: none"> Formulate and publish supplier self-assessment form Increase the signing rate of Supplier Code of Conduct Commitment
Information Security	Digital Governance	<ul style="list-style-type: none"> Revise the information security management policy Regularly convene the annual Information Security Committee System disaster recovery drill Information security education and training Conduct information security ratings 	<ul style="list-style-type: none"> Completed the revision of the information security policy Convened one annual Information Security Committee meeting Completed the system disaster recovery drill The completion rate of information security education and training for indirect personnel was 90.78%. Completed information security rating 	<ul style="list-style-type: none"> The completion rate of information security training for all employees is 100% Implement a virtual host backup plan, a social engineering drill plan, and a virus protection plan for integrated computer manufacturing systems.

2023 Sustainable Development Goals and Achievements - Environmental Issues

Issue	Sub-issue	Short-term Targets (2023)	Implementation Status	2024 Targets
Climate Change	Climate Strategy	<ul style="list-style-type: none"> Promote ISO14064-1 GHG inventory and pass external verification Assess the introduction of the TCFD climate risk assessment mechanism and include it in the supervision of the Board of Directors. 	<ul style="list-style-type: none"> GHG emissions (Scope 1, 2, 3) of 6,020.39 tonnes CO₂e in 2023 were externally verified. The GHG inventory results were reported to the Board of Directors. The TCFD climate risk assessment mechanism was launched at the end of 2023 and will be completed in the first half of 2024. 	<ul style="list-style-type: none"> Complete regular GHG inventory and pass external verification. Establish carbon reduction targets and implement improvement plans. Complete the TCFD climate risk assessment mechanism, and formulate strategies and goals based on the assessment results.
	Energy Management	<ul style="list-style-type: none"> Promote energy reduction projects 	<ul style="list-style-type: none"> Completed the replacement of the energy-saving motor for the VOC cooling windmill, with an estimated annual electricity saving of about 2000 kWh. Completed office air conditioning temperature control, estimated to save about 980 kWh of electricity per year. Completed the total replacement of LED energy-saving lamps and turned off the lamps during the lunch break in the office, with an estimated annual energy saving of about 400 kWh. 	<ul style="list-style-type: none"> Set up solar powered lights in the VOCs area on the roof Replace the desorption windmill of the VOCs treatment system with an energy-saving motor.
Water Resource Management	Water Resource Management	<ul style="list-style-type: none"> Evaluate water-saving/recycling improvement plans 	<ul style="list-style-type: none"> Improved the wafer cleaning process to reduce the water consumption per COC wafer by 1.70%. Continued to promote the replacement of water-saving devices in factories and offices. The industrial wastewater passed two samplings. 	<ul style="list-style-type: none"> Continue to improve process water conservation Strengthen water-saving measures such as water-saving promotion at each unit and water-leakage inspection of pipelines and facilities.
Waste and Recycling	Waste Management	<ul style="list-style-type: none"> Assess the improvement plans for reducing waste generation, recycling and reuse: Evaluate acetone recycling mechanisms to reduce waste generation. 	<ul style="list-style-type: none"> Improved the cleaning and photoresist removal processes to reduce the average acetone consumption per wafer by 60%. 	<ul style="list-style-type: none"> Establish waste reduction targets and implement improvement plans Planning of acetone and photoresist remover solutions
	Material Management			
Product Management	Product Supervision	<ul style="list-style-type: none"> Require raw material suppliers to sign a commitment letter on non-use of prohibited/restricted substances and conflict minerals specified in relevant environmental laws and regulations. 	<ul style="list-style-type: none"> All raw material suppliers signed the pledge. 	<ul style="list-style-type: none"> Conduct an inventory of the Per- and polyfluoroalkyl substances (PFAS) used by material suppliers and formulate a plan for the reduction or elimination of hazardous substances.

2023 Sustainable Development Goals and Achievements - Social Issues

Issue	Sub-issue	Short-term Targets (2023)	Implementation Status	2024 Targets
Human Rights Management	Human rights due diligence	<ul style="list-style-type: none"> Promote human rights due diligence, update the human rights policy, and implement publicity and training internally, and update the policy on the official website. 	<ul style="list-style-type: none"> The design of the human rights due diligence questionnaire has been completed, and the investigation is expected to be conducted in 2024. 	<ul style="list-style-type: none"> Conduct human rights due diligence investigation and formulate relevant supporting measures based on the investigation results. Establish human rights due diligence procedures and specify the frequency of implementation.
Talent Development	Development of human capital	<ul style="list-style-type: none"> Strengthen the cultivation of diversified talent, set topic categories, and introduce an online education and training system for evaluation to facilitate fragmented learning for colleagues. 	<ul style="list-style-type: none"> Introduced the education and training system and established 28 important basic ability training courses 	<ul style="list-style-type: none"> Education and training program achievement rate of 85% Course satisfaction 88%
Talent Attraction and Retention	Talent Attraction and Retention	<ul style="list-style-type: none"> Continue to improve the performance evaluation and promotion system Evaluate employee stock ownership plans (ESOP) 	<ul style="list-style-type: none"> The subjects were 100% assessed and annual duty and level promotion completed Completed the establishment of relevant systems with applications open. As of the end of the year, the employee participation rate was 30%. 	<ul style="list-style-type: none"> Annual retention rate of indirect employees $\geq 85\%$ Annual retention rate of direct employees $\geq 75\%$ Average monthly turnover rate of indirect employees $\leq 1.5\%$ Average monthly turnover rate of direct employees $\leq 4\%$
Occupational Health and Safety	Health and Safety	<ul style="list-style-type: none"> Refinement of the occupation health and safety system, and promotion of safety culture The target value of indicators such as the frequency of disabling injuries is 0, and the target value of near misses is <5. Continue to implement employee physical and mental health promotion programs 	<ul style="list-style-type: none"> 0 disabling injuries and 3 near misses Organize an annual health checkup for all employees that is better than what the law requires; completed a total of 6 health promotion activities including health lectures and sports competitions. 	<ul style="list-style-type: none"> Maintain zero injuries and continue to implement hazard assessment education and training for all departments. Continue to organize activities to promote healthy physical and mental balance of employees Introduce food items of public welfare groups for employee benefits.
Product Responsibility	Product quality and recall management	<ul style="list-style-type: none"> Produce the actual records stipulated in the procedures according to the IATF 16949 quality management system. 	<ul style="list-style-type: none"> Implemented according to the procedural documents and produced MSA and PFMEA execution records. 	<ul style="list-style-type: none"> Complete IATF 16949 quality management system certification by 2025

2-2 Sustainability Topic Management

Material Sustainability Issue Identification Process

We regularly assess and identify material sustainability issues every 2 years. In 2022, we followed the reporting principles and guidelines of the GRI Standards and conducted a 4-stage material sustainability issue management process (as shown in the table below).

The purpose of the material sustainability issue identification process is to identify the issues with the most significant impacts on the economy, environment, and people (including their human rights) in the business activities and business relationships of PlayNitride. After comprehensively considering the significance of the impact of each issue and the results of stakeholder discussions, the Sustainability Committee determined and prioritized the material sustainability issues. After reviewing the scope of impact of each material issue, the boundaries of the management objectives were confirmed, and management policies for each issue formulated, which served as a reference for the disclosure of sustainability information in the future.

Stage 1 Understand the organization's context	1. Establish communication targets	<ul style="list-style-type: none"> Identify 4 types of important stakeholders: Shareholders, customers, employees, suppliers
	2. Collect sustainability issues	<ul style="list-style-type: none"> 19 issues From global sustainability disclosure standards, industry benchmarks, international sustainability rating, stakeholder communication, etc.
Stage 2 Identify impact levels	3. Level of concern	<ul style="list-style-type: none"> 110 valid stakeholder questionnaires
	4. Identify actual and potential impacts	<ul style="list-style-type: none"> 24 Sustainability Committee executives
Stage 3 Assess the materiality of impacts	5. Assess the extent of the impact	<ul style="list-style-type: none"> Severity of impact: Positive or negative benefits/losses Likelihood of impact: Actual/potential probability of occurrence
	6. Draw the materiality matrix	<ul style="list-style-type: none"> Draw a three-dimensional matrix based on the level of stakeholder concern, severity, and probability of impact.
Stage 4 Determine material sustainability issues	7. Identify material issues for priority disclosure	<ul style="list-style-type: none"> Confirm 10 material issues
	8. Disclosure boundary determined	<ul style="list-style-type: none"> Examine the scope and aspects of impact of each material issue from the upstream and downstream stages of PlayNitride's operations, customers, and suppliers.
	9. Corresponding Disclosure Indicator	<ul style="list-style-type: none"> GRI Standards: Topic-specific disclosure indicators SASB Standards: Indicators for the Technology and Communications - Semiconductors (TC-SC)

2-3 Identification of key stakeholders

Identification of key stakeholders

We value the engagement with stakeholders. According to the AA1000 Stakeholder Engagement Standard, we have identified four categories of important stakeholders, namely employees, customers, suppliers, and shareholders, based on the five dimensions of “responsibility, influence, tension, diverse perspectives, and dependence”. After discussion by the Sustainability Committee in 2023, it was confirmed that there was no significant change in the identification of existing stakeholders.

Significance of Important Stakeholders to the Company

In the operational process, we use multiple communication channels to continuously communicate and discuss important issues with various stakeholders to ensure that their concerns and expectations are incorporated into our operational strategies and goals, and that we respond to stakeholders with concrete operating results.

Key Stakeholder	Importance to PlayNitride
Employees	Talent is the key to continuous innovation and maintenance of our leading position in the industry. PlayNitride expects employees to have innovative thinking and the power to take action and retain talent with diverse rewards and benefits. We continue to add value to talent, and improve individual employees' contribution to the team, thereby achieving PlayNitride's operational development goals.
Customers	The support of customers has enabled PlayNitride to realize the commercialization of advanced MicroLED technology. Additionally, the insights of customers into market information also enable PlayNitride to develop technologies more suitable and more quickly for end use. We continue to develop displays with innovative and high-quality MicroLED products to open up new horizons and new blue ocean for the industry.
Suppliers	Suppliers' provision of high-quality raw materials and services is not only the foundation of product quality but also the best partner for jointly creating key technologies. We look forward to closer collaboration with upstream and downstream supplier partners and promote mutual cooperation in the direction of sustainability. We collaborate with our partners to build a more resilient MicroLED industry chain.
Shareholders	The support from shareholders and investors for PlayNitride's development potential and operational decision-making enables us to focus on innovation and challenge the limits. We will be committed to operational growth, sustainable development, and enhanced information transparency to respond to shareholders' and investors' expectations. By doing so, we will gradually fulfill the responsibility of being the first company listed on the Taiwan Innovation Board.

Key Stakeholder Communication Channels and Frequency

Key Stakeholder	Communication Channel	Communication Frequency	Communication Effectiveness
Employees	<ul style="list-style-type: none"> Occupational Health and Safety Committee Labor-Management Meeting Employee Welfare Committee Counseling/Employee Interview Employee Suggestion Box/Sexual and Workplace Harassment Complaints Box 	<ul style="list-style-type: none"> Quarterly Quarterly Quarterly Ad hoc On demand 	<ul style="list-style-type: none"> Four meetings convened in 2023 Four meetings convened in 2023 Four meetings convened in 2023 Five employee interview cases were opened in 2023 and all cases are now closed. Six suggestions were received in 2023 and all cases are now closed.
Customers	<ul style="list-style-type: none"> Customer visits, Conference-call E-mail Project meeting Customer satisfaction survey 	<ul style="list-style-type: none"> Ad hoc On demand Ad hoc Yearly 	<ul style="list-style-type: none"> 20 new customers developed by 2023 Customer satisfaction survey in 2023 reached 84.6 points
Suppliers	<ul style="list-style-type: none"> New supplier assessment Supplier audit Environmental safety risk assessment 	<ul style="list-style-type: none"> Ad hoc Yearly Ad hoc 	<ul style="list-style-type: none"> Hazardous substance report required for validation and review of new and alternative materials Targeted audits for tier-1 raw material suppliers Safety and hygiene assessments conducted for contractors or service providers working on-site
Shareholders	<ul style="list-style-type: none"> Convening of General Shareholders' Meeting Convening of Board of Directors Spokesperson system 	<ul style="list-style-type: none"> Yearly Quarterly Ad hoc 	<ul style="list-style-type: none"> An AGM is convened each year in accordance with the Company Act and the Articles of Incorporation. The Board of Directors is convened every quarter with additional sessions convened as necessary. Communicate with shareholders or potential investors through investor conferences; eight sessions were held in 2023.

2-4 Identification of Material Sustainability Topics

We identify material sustainability topics every 2 years. The material sustainability topics were identified in 2022, and after discussion by the Sustainability Committee, we confirmed the original material issues would be maintained in 2023. In 2024, we expect to identify material issues with reference to the "Double Materiality" principle of the European Sustainability Reporting Standards (ESRS) to assess the impact of each sustainability issue on society, the environment, and our own operations, and will determine the material sustainability issues to be reported first.

Collect Sustainability Issues

As a start-up company that has just entered the Taiwan Innovation Board, we need to quickly establish good corporate governance, a sound system to ensure the compliance and transparency of the organization, and build the foundation for the organization's long-term success. With human rights issues becoming the focus of social attention in recent years, we hope to emphasize human rights in organizational activities and business relationships to meet the expectations of outstanding talent, investors, customers, and authorities. Given this, we have prioritized the two sustainability issues of "corporate governance and human rights management" as our top management tasks.

With reference to global sustainability disclosure standards (GRI Standards, SASB Standards, TCFD Framework), the sustainability information disclosure and practices of benchmark companies, international sustainability ratings, and other information, combined with the sustainability context of the Company's operating activities and business relationships, and issues of concern collected during the discussion with various important stakeholders were summarized into 19 sustainability issues for subsequent identification of impact levels.

Investigate the Level of Concern of Stakeholders

We continue to interact with stakeholders. In November 2022, we conducted a questionnaire on the level of concern of important stakeholders and collected 110 questionnaires to understand stakeholder concerns and expectations on various sustainability issues. The results were provided to the Sustainability Committee as a reference for analyzing the impact of sustainability issues.

Top 3 Issues of Concern for Various Stakeholders

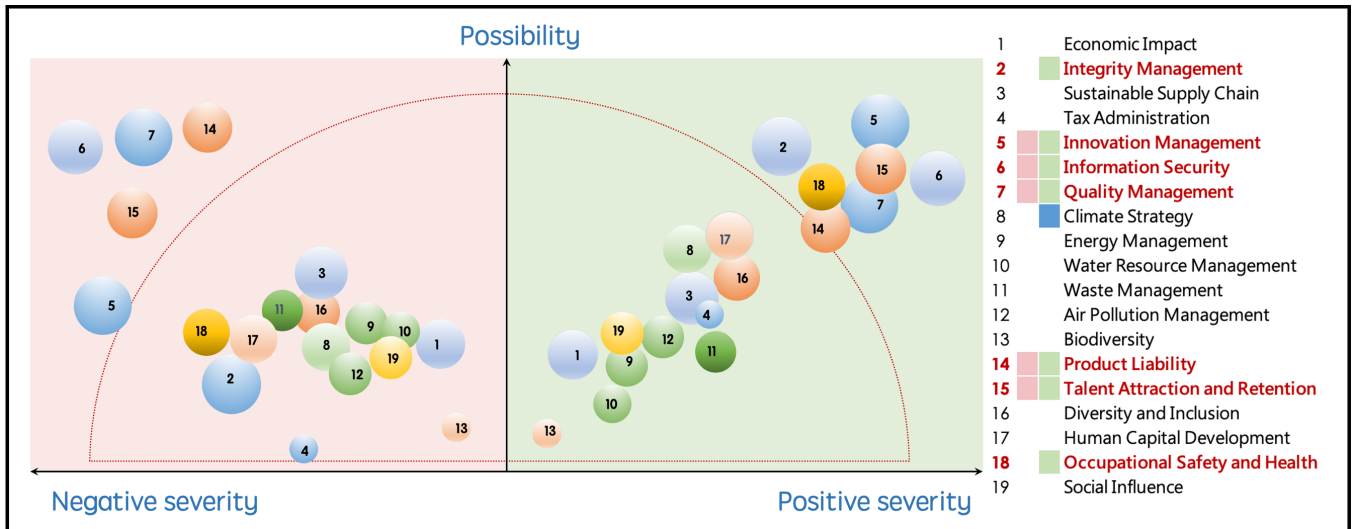
Shareholders	Customers	Employees	Suppliers
<ul style="list-style-type: none"> •Economic Impact •Innovation Management •Quality Management 	<ul style="list-style-type: none"> •Sustainable Supply Chain •Quality Management •Information Security 	<ul style="list-style-type: none"> •Innovation Management •Ethical Corporate Management •Talent Attraction and Retention 	<ul style="list-style-type: none"> •Ethical Corporate Management •Quality Management •Sustainable Supply Chain

Identify Actual and Potential Impacts

In 2022, 24 executives of the Sustainability Committee underwent an assessment of the possible positive or negative, actual or potential impacts that may arise from 19 issues. Through the evaluation of impact questionnaires and on-site discussions, we weighed the extent of the impact and examined whether the issue is of "financial significance" and "impact materiality", i.e., the impact the issue has on the development, performance, and status of the Company, based on the spirit of dual materiality of "severity" and "probability". Whether the impact of value creation is significant, or whether the sustainability issue will have an impact on the economy, the environment, and people (including their human rights). When identifying, if the issue has actual or potential human rights risks, the severity will be rated as the highest score.

The assessment results of the impact of each sustainability issue were summarized with the concerns of important stakeholders combined in order to develop a three-dimensional sustainability issue impact analysis matrix.

Sustainability Issue Impact Analysis Matrix



Note: X: Impact severity (positive/negative) Y: Impact probability bubble size: Level of stakeholder concern

Material Sustainability Issues Prioritized for Disclosure

Based on the matrix analysis results, the Sustainability Committee conducted a comprehensive discussion and evaluation and ranked eight core sustainability issues: "ethical corporate management, innovation management, information security, quality management, product responsibility, talent attraction and retention, occupational safety and health, and climate strategy". Together with the aforementioned two primary issues: corporate governance and human rights management, a total of ten sustainability issues are considered as material issues for the promotion of sustainable management. Among them "climate strategy" was originally excluded from the material issue after matrix analysis. After discussion of the executives and taking into account the domestic and international trends of net zero transition, the climate strategy was listed as an issue of priority concern and management. After comparing the disclosure requirements of SASB standards for the semiconductor sector, the management performance and promotion focus of energy management, water resource management, waste and recycling, which were not included in the material topics in this analysis, are still disclosed.

With reference to the material sustainability issues identified in 2022, we formulated short-term goals in 2023 and continued or adjusted relevant goals and solutions to meet the needs of organizational development. In addition, a report was submitted to the Board of Directors on the identification results and the set promotion goals. By doing this, we were able to understand the Board's views and suggestions on the promotion of sustainable management by PlayNitride. In 2024, we will continue to formulate a long-term management policy, and begin to plan and promote relevant programs to reduce possible impacts and to serve as the basis for sustainability information disclosure in the future.

2-5 Corresponding Disclosure Indicators for Material Sustainability Issues

By integrating the semiconductor sector indicators of the GRI and SASB standards, the management approach, promotion goals and substantive performance, and future plans of each material sustainability issue are reported. After reviewing the impact of each material issue on the upstream and downstream of innovation and the value chain, we confirmed that the disclosure boundary is within the entities of the organization as the disclosure boundary. The scope of impact of each issue varies slightly depending on the issue.

Sustainability Issue	Compared to Last Year	Scope of Impact			Impact Aspect				Impact Time Scope			Correspondence between GRI Standards and SASB Standards	Corresponding Section	
		PlayNitride's operations	Customers	Suppliers	Economic Aspect	Environmental Aspect	People	Human Rights	Occurred	Likely to Cause an Impact in the Future				
										Within 1 Year	Within 3 Years			Over 3 Years
Corporate Governance	Maintained material	•	•	•	•		•				•		GRI 2 General Disclosure 2021: 3 Governance	4-1 Corporate Governance
Human Rights Management	Maintained material	•		•			•	•				•	GRI 406: Non-discrimination 2016	6-3 Human Rights Management
Ethical Corporate Management	Maintained material	•		•	•		•		•				GRI 205 Anti-corruption 2016 TC-SC-520a.1 Intellectual property protection and competitive behavior	4-2 Ethical Corporate Management
Innovation Management	Maintained material	•	•	•	•	•	•		•				Self-defined Topic	3-1 Product Advantages 3-2 Technical Advantages 3-3 Intellectual Property Management
Quality Management	Maintained material	•	•	•	•	•			•				Self-defined Topic	3-6 Quality Management
Talent Attraction and Retention	Maintained material	•			•		•	•				•	GRI 202: Market Presence 2016 GRI 401 Employment 2016 GRI 402: Labor/Management Relations 2016 TC-SC-330a.1 Recruiting & managing a global & skilled workforce	6-1 Talent Attraction and Retention

Sustainability Issue	Compared to Last Year	Scope of Impact			Impact Aspect				Impact Time Scope			Correspondence between GRI Standards and SASB Standards	Corresponding Section	
		PlayNitride's operations	Customers	Suppliers	Economic Aspect	Environmental Aspect	People	Human Rights	Occurred	Likely to Cause an Impact in the Future				
										Within 1 Year	Within 3 Years			Over 3 Years
Occupational Health and Safety	Maintained material	•		•	•		•	•	•				GRI 403 Occupational Health and Safety 2018 TC-SC-320a.1, TC-SC-320a.2 Employee health and safety	6-4 Employee Health and Safety
Climate Strategy	Maintained material	•	•	•	•	•					•		GRI 305 Emissions 2016 TC-SC-110a.1, TC-SC-110a.2 GHG emissions	5-1 Climate Strategy 5-2 GHG Emission Management
Product Responsibility	Maintained material	•	•	•	•	•			•				GRI 416 Customer Health and Safety 2016 GRI 417 Marketing and Labeling 2016 TC-SC-410a.1, TC-SC-410a.2 Product lifecycle management	3-4 Hazardous Substance Management
Information Security	Maintained material	•			•		•		•				Self-defined Topic	4-5 Information Security

Voluntary Disclosure Topics

Sustainability Issue	Scope of Impact			Impact Aspect				Impact Time Scope			Correspondence between GRI Standards and SASB Standards	Corresponding Section	
	PlayNitride's operations	Customers	Suppliers	Economic Aspect	Environmental Aspect	People	Human Rights	Occurred	Likely to Cause an Impact in the Future				
									Within 1 Year	Within 3 Years			Over 3 Years
Energy Management	•				•			•				GRI 302 Energy 2016 TC-SC-130a.1 Process energy management	5-3 Energy Management
Water Resource Management	•				•			•				GRI 303 Water 2018 TC-SC-140a.1 Water management	5-4 Water Resource Management
Waste Management	•				•			•				GRI 306 Waste 2020 TC-SC-150a.1 Waste management	5-5 Waste Management

2-6 Management Approach to Material Sustainability Issues

Corporate Governance/Ethical Corporate Management

Description of External Impacts	Positive Benefits	Sound corporate governance and ethical corporate management are the core of the Company. By protecting the rights and interests of shareholders and stakeholders, we enable the Company to continue to grow steadily, and gradually enhance the sustainable development of the Group.
	Negative Impacts	Failure to implement or violation of relevant regulations may result in penalties, affecting the trust of customers and suppliers, and affecting the Company's future development in the capital market.
Policy		<ul style="list-style-type: none"> Corporate Governance Best Practice Principles, Sustainable Development Best Practice Principles Code of Ethical Conduct, Code of Ethical Corporate Management, Operating Procedures for Ethical Management, and Code of Conduct
Commitment		<ul style="list-style-type: none"> Comply with various laws and regulations and implement corporate governance to protect the rights of relevant stakeholders. In the course of business activities, the Company shall not directly or indirectly offer, promise, request or accept any illegitimate benefits, or engage in other dishonest conducts such as breach of good faith, wrongdoing, or breach of fiduciary duty, or obtain or maintain benefits.
Goals and Targets		<ul style="list-style-type: none"> Be among the top 21% - 35% in the corporate governance evaluation (ESG evaluation) by 2025 Zero fines, zero violations of the law, zero integrity violations, or unhandled complaints
Action Plan		<ul style="list-style-type: none"> Continue to improve policies, systems, and information disclosure with reference to the corporate governance evaluation items. The Board Performance Evaluation Procedures have been formulated and self-evaluation has been implemented and reported to the Board of Directors. Regular promotion and training on ethical corporate management for employees and newcomers Formulated the "Supplier Code of Conduct" to ensure that suppliers understand PlayNitride's requirements for ethical conduct Report to the Board of Directors on the implementation of ethical corporate management in the previous year
Annual Achievements		<ul style="list-style-type: none"> Since listing on Taiwan Innovation Board in 2022, we have been establishing various systems. The evaluation results in 2023 were 81%-100%. We will continue to refer to the practices of benchmarking companies to improve related management and information disclosure. In 2023, the self-performance evaluation of the Board of Directors and functional committees were completed, and the results were both excellent. In 2023, no case was received through the whistleblowing and grievance channel. In 2023, no related violations were punished by the competent authority 2023 Results of training on ethical corporate management: 100% of directors and new recruits, 96.14% of all employees. In 2023, the return rate of the Supplier Code of Conduct was 87.5%. The 2023 implementation results are expected to be reported to the Board of Directors in March 2024.
Follow-up Review Mechanism		<ul style="list-style-type: none"> The management effectiveness is regularly tracked by the Corporate Governance Officer and the meeting affairs unit and reported to the Board of Directors. The Board of Directors conducts a self-performance evaluation every year, and an external professional and independent institution conducts a self-evaluation at least once every three years. Regularly track the progress of various communication channels or complaint mailboxes
Responsibility		<ul style="list-style-type: none"> Corporate governance: Board of Directors, management, meeting affairs units, Corporate Governance Officer Ethical corporate management: Human Resources Division, Audit Office, Legal Office
Stakeholder Engagement and Grievance Mechanism		<ul style="list-style-type: none"> Board performance evaluation Various communication channels or grievance mailboxes

Human Rights Management

Description of External Impacts	Positive Benefits	Through sound human rights management, we can create a more harmonious and friendly working environment, comply with government regulatory requirements, and meet customer expectations of suppliers.
	Negative Impacts	In the event of a human rights-related controversy, employees may suffer unreasonable treatment and harm, which will also affect the Company's external image.
Policy	<ul style="list-style-type: none"> Formulate human rights-related policies and rules, and implement equal opportunity regulations in human resource management. Establish relevant grievance channels 	
Commitment	<ul style="list-style-type: none"> By formulating relevant policies and aid application channels, we advocate the importance and standards of human rights policies within the Company, and conduct advocacy and training through diverse channels. 	
Goals and Targets	<ul style="list-style-type: none"> Zero complaints related to human rights violations. 100% completion rate for education and training on issues related to human rights protection for new recruits. Completed the planning and design of human rights due diligence implementation methods. 	
Action Plan	<ul style="list-style-type: none"> Complaint mailboxes for sexual harassment prevention and workplace bullying are in place. Clear and smooth internal communication channels, including the suggestions box and regular labor-management meetings. Promote human rights protection in new employee training and related communication and complaint channels Consult internal and external opinions of the Company to plan the implementation method of human rights due diligence. Suppliers are required to respect labor human rights through the supplier code of conduct. 	
Annual Achievements	<ul style="list-style-type: none"> In 2023, there were no complaints related to human rights violations. In 2023, all internal communication cases were handled (6 suggestions, 5 employee negotiations). In 2023, the completion rate of human rights-related training for new recruits was 100%. In 2023, the design of the human rights due diligence questionnaire was completed, and the questionnaire is expected to be conducted for supervisors in 2024. The formulation of the Supplier Code of Conduct was completed in 2023, and it includes the protection of human rights as one of the requirements for suppliers. 	
Follow-up Review Mechanism	<ul style="list-style-type: none"> Thoroughly follow up on sexual harassment prevention, workplace bullying, and other complaints Thoroughly follow up on the implementation of internal communication channels and the status of case handling. 	
Responsibility	<ul style="list-style-type: none"> Human Resources Division 	
Stakeholder Engagement and Grievance Mechanism	<ul style="list-style-type: none"> Regular promotion and training on human rights management for employees and newcomers Grievance mailboxes and labor-management meetings and other feedback channels 	

Innovation Management

Description of External Impacts	Positive Benefits	Create a leading position in MicroLED technology, provide customers with complete technical solutions, reduce product costs, enhance market competitiveness, and continue to optimize R&D and design to reduce environmental impact.
	Negative Impacts	Failure to properly protect business secrets can cause considerable damage to the Company.
Policy	<ul style="list-style-type: none"> Invest in R&D funds to develop independent equipment and materials for key processes and continue to optimize processes. Encourage the Company's colleagues to engage in innovative thinking, organize innovation competitions, and provide patent and trade secret bonuses. 	
Commitment	Increase the product yield rate, shorten the product production cycle, and quickly adjust and develop the corresponding process in response to the different needs of customers.	
Goals and Targets	<ul style="list-style-type: none"> Reduce chip size by 50% annually compared to the previous year Continue to increase the number of patents 	
Action Plan	<ul style="list-style-type: none"> Regularly hold cross-departmental meetings to discuss the development direction for process innovation and process machine capabilities. Establish a sustainable design evaluation aspect, and each R&D department responds to its design or reduction evaluation goals. Introduce a patent management system and combine the existing business secret registration system to implement the management and protection of core technology intellectual property. Regularly publish the status of patent strategy deployment, provide the status of proposal application, and encourage R&D colleagues to strive for proposal bonuses. 	
Annual Achievements	<ul style="list-style-type: none"> The chip size has been reduced by more than 70% compared to the previous year, and the brightness has remained unchanged, saving the use of raw materials and making the end use more energy-efficient. In 2023, we introduced a patent management system to implement comprehensive patent management, from patent application and certification to maintenance cost management, to ensure that the status of each patent is monitored and updated in a timely manner. In 2023, 86 new patents were applied for, and 816 MicroLED-related patents have been applied for over the years, 64% of which are for core mass production technologies and 36% for potential innovative technologies. In 2023, a total of 45 cases were filed, and 54 R&D colleagues won the patent proposal application bonus and patent certification bonus. 	
Follow-up Review Mechanism	<ul style="list-style-type: none"> Management and decision-making departments confirm the development progress of each R&D department on a quarterly basis. The Sustainability Committee tracks process optimization to reduce environmental impact results on a quarterly basis. 	
Responsibility	<ul style="list-style-type: none"> Panel Technology Development Division 	
Stakeholder Engagement and Grievance Mechanism	<ul style="list-style-type: none"> Increase industry-academia cooperation, encourage personnel to attend international academic conferences to absorb new knowledge, and continue to cultivate R&D talent. Planning and handling of intellectual property application and protection courses for R&D personnel Continue to hold review meetings with suppliers to meet the process requirements and specifications of new products. Confirm quality inspection errors with customers based on new product verification results, and adjust process equipment parameters to improve product specifications. 	

Quality Management

Description of External Impacts	Positive Benefits	The effective operation of the ISO quality management system improves production efficiency, reduces production costs, improves product quality, and enhances customer satisfaction and trust, enabling the Company to continue to thrive.
	Negative Impacts	If the quality is not maintained, customer satisfaction will decrease and the Company's development will be affected.
Policy	<ul style="list-style-type: none"> Quality policy: Take in customer comments and pursue innovation and excellence. ISO 9001:2015 Quality Management System 	
Commitment	Through the operation of the ISO quality management system, we promote quality management activities and strengthen personnel quality awareness to ensure compliance with the requirements of laws and regulations. Furthermore, we strive to improve production efficiency, reduce production costs, improve product quality, and improve customer satisfaction.	
Goals and Targets	<ul style="list-style-type: none"> Pass the annual audit of quality system certification, and the target is no major deficiencies. Continue to control the customer complaint closure rate Complete IATF 16949 quality system certification in 2025 	
Action Plan	<ul style="list-style-type: none"> Execute internal audits to confirm the continuous operation of the quality system, identify and correct potential problems, and ensure compliance with the quality system certification requirements before audits. Statistical monitoring, follow-up and improvement of customer complaint closure rate In response to the needs of expanding automotive customers, the IATF 16949 quality system introduction plan was launched at the end of 2023, and related awareness raising and resource preparation will be carried out in 2024. 	
Annual Achievements	<ul style="list-style-type: none"> In 2023, we passed the ISO 9001 annual audit in 2023 with no major deficiencies. In 2023, customer complaint closure rate was 100%. In 2023, the procedural documents were executed, and the measurement system analysis (MSA) and Process Failure Mode Effect Analysis (PFMEA) execution records were produced, and the certification evaluation and schedule planning were completed in Q1 2024. 	
Follow-up Review Mechanism	<ul style="list-style-type: none"> Customer complaint closure rate and internal audit results are reviewed and discussed in the annual management review meeting. Annual review of the deficiencies in the internal audit of the management system and external third-party verification and audit 	
Responsibility	<ul style="list-style-type: none"> Quality Division 	
Stakeholder Engagement and Grievance Mechanism	<ul style="list-style-type: none"> Monthly key performance indicator (KPI) management. Annual ISO quality management system internal audit and ISO quality management system management review meetings. Customer satisfaction survey. 	

Talent Attraction and Retention

Description of External Impacts	Positive Benefits	Attract and retain outstanding talent with diverse rewards and benefits to create a more competitive organization, ensuring that PlayNitride can continue to innovate and maintain its position in the industry.
	Negative Impacts	The loss of outstanding talent may affect the smoothness and efficiency of business development.
Policy	Attract high-quality talent and retain key outstanding talent.	
Commitment	Create a friendly working environment, establish a comprehensive career development path, and create competitive salaries and benefits.	
Goals and Targets	<ul style="list-style-type: none"> • Annual retention rate of indirect employees $\geq 85\%$ • Annual retention rate of direct employees $\geq 75\%$ • Average monthly turnover rate of indirect employees $\leq 1.5\%$ • Average monthly turnover rate of direct staff $\leq 4\%$ • Continue to promote talent attraction and retention and related solutions. 	
Action Plan	<ul style="list-style-type: none"> • Promote a long-term employee incentive and reward system. In July 2023, the employee stock ownership trust scheme was implemented. • Regularly conduct market salary and welfare surveys to maintain market competitiveness in salary and welfare. • Continue to improve the promotion system and performance evaluation system. • Conduct interviews and analyze the reasons for employee turnover. • Promote various corporate promotion activities and establish industry-academia partnerships to increase corporate market exposure and attractiveness. 	
Annual Achievements	<ul style="list-style-type: none"> • As of the end of 2023, the number of participants in the employee stock ownership trust scheme was 137, a participation rate of approximately 30%. • In 2023, 100% of the candidates were evaluated, and the average salary increase was 4.5%, and the internal promotion was also completed. • In 2023, the talent retention rate and turnover rate were tracked every quarter, and the annual average reached the target. The relevant indicators are as follows: Annual retention rate of indirect employees $\geq 89\%$ Annual retention rate of direct employees $\geq 87\%$ Average monthly turnover rate of indirect employees 1.2% Average monthly turnover rate of direct employees $\leq 3\%$ • In 2023, we organized the first MicroLED Forum, delivered speeches at major technology exhibitions, and participated in other industry-academia collaboration activities, reaching a cumulative total of 1,300 people. 	
Follow-up Review Mechanism	<ul style="list-style-type: none"> • Review the employee retention rate and recruitment status every month, and track the improvement status every quarter. • Follow up on the implementation of various recruitment and retention policies. 	
Responsibility	<ul style="list-style-type: none"> • Human Resources Division 	
Stakeholder Engagement and Grievance Mechanism	Employees can give feedback through multiple communication channels such as the suggestion box. The Company also communicates relevant policies through formal meetings/informal communication channels.	

Occupational Health and Safety

Description of External Impacts	Positive Benefits	We operate an effective occupational safety management system to create a safe working environment for employees and comply with government regulations and customer self-assessment requirements for suppliers.
	Negative Impacts	Accidents and injuries may affect the physical and mental health of employees, resulting in loss of working hours and penalties.
Policy	<ul style="list-style-type: none"> • Safety, Health, and Environmental Management Policy • ISO 45001:2018 Occupational health and safety management system 	
Commitment	Through the operation of the occupational safety and health management system, we ensure the safety of equipment and facilities, the effective operation of the management system, strengthen the safety awareness of employees, cultivate a safety culture, and create a zero occupational disaster environment.	
Goals and Targets	<ul style="list-style-type: none"> • Zero major accidents • Zero fines 	
Action Plan	<ul style="list-style-type: none"> • The occupational safety and health management system must pass internal/external audits on a regular basis to maintain the validity of the certificate. • Work environment risk identification and prevention, improve the safety of hazardous gas piping and valves, and the disposal of waste liquid barrels. • Emergency response measures and management, and improve the linkage access control of the fire protection system. 	
Annual Achievements	<ul style="list-style-type: none"> • In 2023, there was one disabling injury, no major accident, and no government penalty. • In 2023, the Company passed the external audit which is to be renewed every three years, maintaining the validity of the management system certificate. • Completed the assessment of hazardous gas piping valves and replaced chlorine valves with a long service life and higher risks. • Completed the improvement of the waste liquid barrel removal and transportation operation, and reconfigured the pipeline position to reduce the risk of waste liquid contact. • Investigated the status of interlocking access control in the fire protection system, and adjusted and improved the wiring of all non-linked access control systems. 	
Follow-up Review Mechanism	<ul style="list-style-type: none"> • Quarterly Occupational Safety and Health Committee review • Annual internal audit and external verification audit of the management system 	
Responsibility	<ul style="list-style-type: none"> • Industrial Safety Department 	
Stakeholder Engagement and Grievance Mechanism	<ul style="list-style-type: none"> • Occupational Safety and Health Committee. • Established the Environmental Safety and Health Consultation and Communication Management Procedures for the communication with internal and external units. • Established the Occupational Accident Reporting and Investigation Management Procedures to report accidents. • Contractor Safety, Health and Environmental Management Procedures are in place, and contractor work meetings are held to communicate and cooperate with contractors on related matters. 	

Climate Strategy

Description of External Impacts	Positive Benefits	Under the climate change and global net zero trend, the Company's products have competitive advantages of high efficiency, energy saving, and low carbon emissions. We have also completed a GHG inventory on our own initiative. In the face of physical risks, transition risks, and opportunities brought about by climate change, we formulate long-term response strategies and invest transformation resources to enhance corporate resilience.
	Negative Impacts	Drastic climate change may cause shortages of water and electricity, resulting in the risk of operation interruption. Stricter government policies and investors' attention, as well as a large amount of capital and resource investment in the implementation of relevant carbon reduction measures, may lead to the current research and development stage. of companies' short-term economic burdens.
Policy	<ul style="list-style-type: none"> • Conduct GHG inventories in accordance with ISO14064-1:2018 • Comply with the requirements of the Climate Change Response Act and the Sustainable Development Roadmap for TWSE/TPEX Listed Companies 	
Commitment	With reference to the Climate-related Financial Disclosure (TCFD) framework, we will introduce the implementation plan in stages, set carbon reduction targets and formulate response plans, dedicated to reducing environmental impact.	
Goals and Targets	<ul style="list-style-type: none"> • Control GHG emissions every year and strive to reduce them • Regularly publish the implementation results of the Climate Change Financial Disclosure (TCFD) in the Sustainability Report 	
Action Plan	<ul style="list-style-type: none"> • Voluntary GHG inventory and external verification • TCFD risk assessment project planning and execution 	
Annual Achievements	<ul style="list-style-type: none"> • Completed the 2023 GHG inventory and passed external verification • In 2023, the total GHG emissions were 6,020.39 tonnes CO₂e, an increase of 696.96 tonnes CO₂e (an increase of 13.09%) compared to 2022. The main contribution came from indirect energy emissions from the use of electricity, accounting for 62.80% of the total emissions. • In 2023, we continued to promote energy-saving measures, and the emission intensity (tonnes CO₂e/million revenue) was 6.38, a decrease of 6.80 (51.57%) from 2022. • Completed the first systematic promotion of climate risk and opportunity identification and assessment; identified 4 major risks and 4 types of possible opportunities: major risks include floods, droughts, wind disasters, and rising raw material costs; major opportunities include making good use of public sector incentives, using clean energy, strengthening internal management mechanisms, and improving process efficiency. 	
Follow-up Review Mechanism	<ul style="list-style-type: none"> • Quarterly review by the Sustainability Committee • Pass annual external GHG inventory verification • Regularly report the implementation results to the Board of Directors 	
Responsibility	<ul style="list-style-type: none"> • Climate Governance Team under the Sustainability Committee 	
Stakeholder Engagement and Grievance Mechanism	<ul style="list-style-type: none"> • Convene the Sustainability Committee • Collaborate with academic institutions and industry associations to promote energy-saving and low-carbon LED products. 	

Product Responsibility

Description of External Impacts	Positive Benefits	100% compliance with hazardous substance regulations to meet customer expectations of suppliers.
	Negative Impacts	Violation of laws and regulations and customer requirements will damage the corporate brand image.
Policy	Hazardous Substances Environmental Policy	
Commitment	Adhere to the concept of environmental protection, use green materials, fully implement green processes, comply with regulatory requirements, and become an excellent manufacturer of green products.	
Goals and Targets	<ul style="list-style-type: none"> • 100% of our products are in compliance with international regulations such as RoHS and REACH. • Establish clear mechanism for chemical management 	
Action Plan	<ul style="list-style-type: none"> • Establish a supplier's list of hazardous substances to ensure that raw materials meet the legal requirements for hazardous substances. • Update the list of prohibited/restricted substances for products and maintain the effectiveness of the management system. • Regular annual audit of the product hazardous substance management system 	
Annual Achievements	<ul style="list-style-type: none"> • In accordance with the latest list of prohibited/restricted substances in products announced by RoHS and REACH, we updated the questionnaire to suppliers every six months and requested them to sign the Letter of Commitment. The supplier signature rate is 100%, ensuring that the various chemical substances in products do not cause harmful effects to and impact on the environment and human health. • Passed the internal audit of the product hazardous substance management system to maintain the effectiveness of the management system. • Materials used in our products are 100% in compliance with international, regional, national and customer standards for environmentally related substances and hazardous substance content in products. 	
Follow-up Review Mechanism	<ul style="list-style-type: none"> • Announce the latest list of prohibited/restricted substances in products • Annual internal audit of the hazardous substance management system 	
Responsibility	<ul style="list-style-type: none"> • Quality Division 	
Stakeholder Engagement and Grievance Mechanism	<ul style="list-style-type: none"> • Established product hazardous substance management procedures and required suppliers to conduct hazardous substance testing of raw materials and products by a third-party notary. • The Supplier Management Procedures have been established to audit the supplier's environmental protection and hazardous substance management systems. • Suppliers shall comply with the Letter of Commitment and the List of Prohibited/Restricted Substances from the Use of Prohibited/Restricted Substances in relevant environmental laws and regulations. 	

Information Security

Description of External Impacts	Positive Benefits	Effective information security control and management enhance colleagues' information security awareness, create a safe information work environment, comply with government regulatory requirements, and enhance customer trust.
	Negative Impacts	The occurrence of information security incidents may result in the loss of the Company's digital assets and property, the loss of customer trust, impact on profits, and the incurrence of fines by government agencies.
Policy	<ul style="list-style-type: none"> Information Security Policy Electronic Computer Recycling Operation 	
Commitment	Adhere to the information security policy and circular operation of computers to ensure the effective operation of the information system and network, strengthen the information security awareness of all employees, and create a secure information environment.	
Goals and Targets	<ul style="list-style-type: none"> Zero major information security incidents Zero information security penalty records 	
Action Plan	<ul style="list-style-type: none"> Regularly conduct information security education and training for all employees Regularly conduct social engineering drills Annual third-party information security inspection Regular annual audits on the internal control and management of the information environment 	
Annual Achievements	<ul style="list-style-type: none"> In 2023, the training completion rate of information security personnel, IT personnel, and new employees was 100%, and the training completion rate of all indirect personnel was 90.78%. In 2024, the training scope will be extended to all employees. Improved the Company's network architecture to enhance the overall network speed and network security. In 2023, we passed internal control and external audit In 2023, there were no major information security incidents and no record of penalties from the government. 	
Follow-up Review Mechanism	<ul style="list-style-type: none"> Annual regular review by the Information Security Committee Annual external verification audit 	
Responsibility	<ul style="list-style-type: none"> Information Technology Department 	
Stakeholder Engagement and Grievance Mechanism	<ul style="list-style-type: none"> Convene the Information Security Committee Information security-related education and training 	

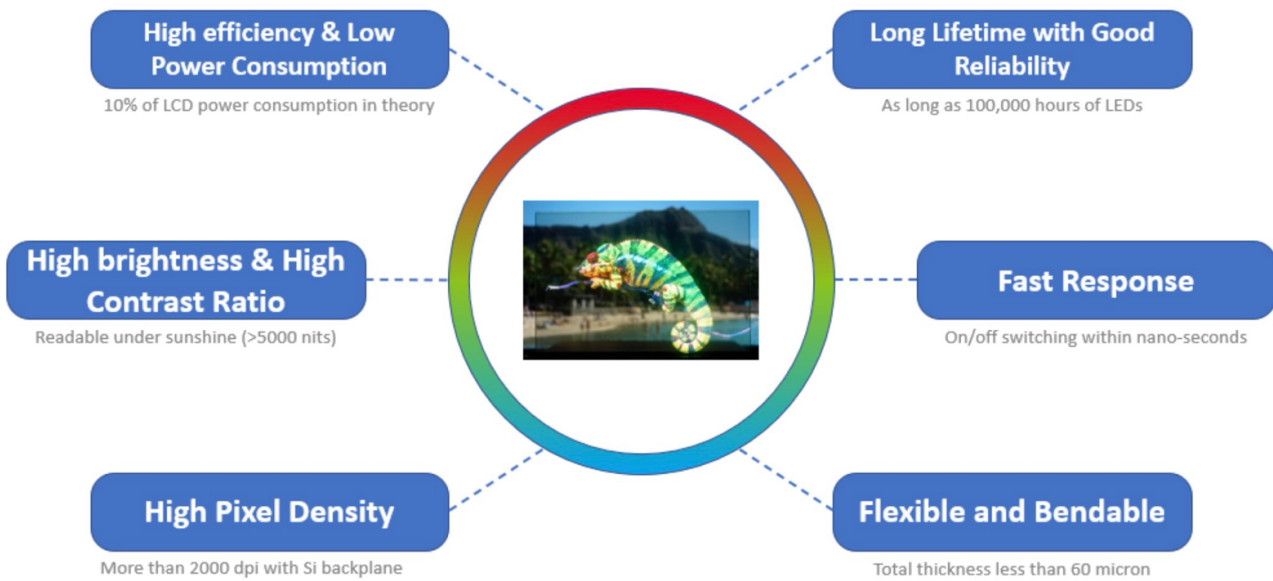
3. Sustainable Product Innovation

3-1 Product Advantages

Product Advantages

MicroLED are recognized as the ultimate next-generation display technology in the industry as its related technology and specifications are superior to other traditional display technologies, and its development potential is more likely to come from the application of "future display".

The rise of emerging fields such as 5G communication, big data, and the Internet of Things will bring new application opportunities to the MicroLED display market to realize ubiquitous smart life and interactive display technology, including ultra-high resolution and virtual-reality integration of ecosystems, smart vehicles, energy-saving and low-carbon design requirements are all areas where MicroLED are more advantageous.



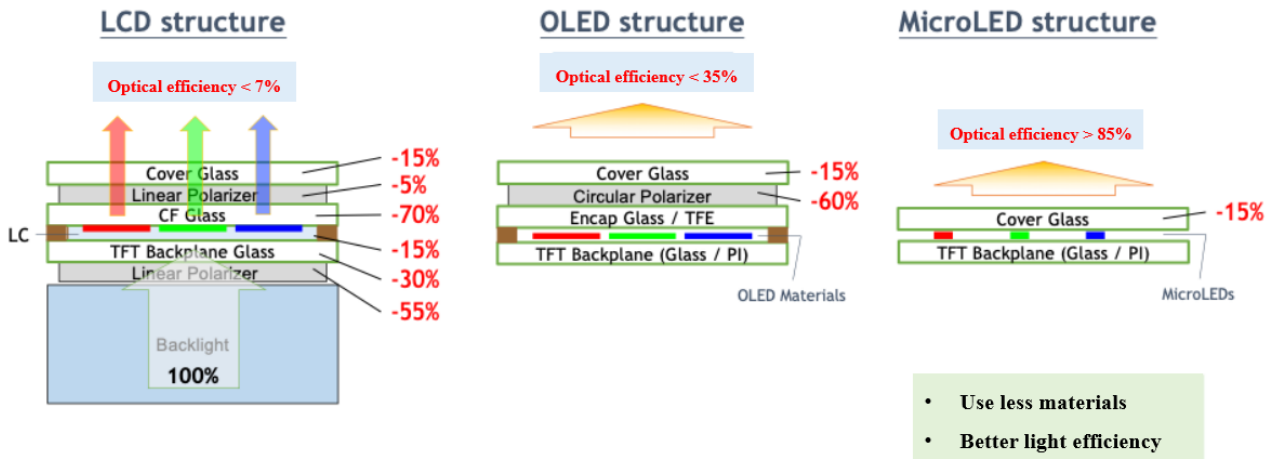
Comparison of MicroLED and other displays

MicroLED displays have a screen resolution unmatched by other display technologies as their light-emitting components have been miniaturized to the micron level. Compared with LCD (Liquid-Crystal Display), OLED (Organic Light-Emitting Diodes), MicroLED can emit light by themselves, save power compared to LCD, has a faster response speed, higher brightness and higher contrast. In addition, compared with the same self-emitting OLED display, as the light-emitting material is inorganic, MicroLED have no disadvantages of screen imprinting or color degradation, and can adapt to higher and lower temperature working environments. MicroLED have a longer service life, and is better than OLEDs in response speed and power consumption. The shortcomings of both LCDs and OLEDs can be compensated by MicroLED.

FEATURES	LCD	OLED	MicroLED
Self - Emissive	X	✓	✓
Contrast Ratio	5000:1	∞	∞
Life	3 icons	1 icon	6 icons
Response Time	ms	µs	ns
Operating Temperature	☀️ -40 ~ 100°C ☀️	☀️ -30 ~ 85°C ☀️	☀️ -100 ~ 120°C ☀️
Power Consumption	4 battery icons	3 battery icons	1 battery icon
Viewing Angle	Low	Medium	High
Pixel Density	Up to 1500ppi	Up to 1000ppi	Up to 6000ppi

Source: Compiled by the Company

Compared with LCD and OLED, MicroLED displays are simpler in structure and have better luminous efficiency. They consume less energy when applied to end use. In addition, MicroLED displays require fewer materials and have less impact on the environment.



Product Application Performance

Transparent Display Combined With Interactive Technology to Create Smart Display Entertainment Applications

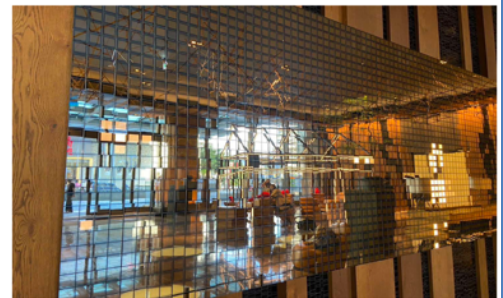
Our transparent MicroLED displays were the first to have been applied to museums and exhibition venues. Through the new type of display technology, MicroLED displays have become a new highlight of the exhibition by combining education and entertainment. With the cooperation of the Industrial Technology Research Institute, we have created an extremely transparent and high-brightness "transparent deep-sea fish display" in the deep-sea fish specimen display area of Xpark Aquarium in Taoyuan, with a transmission rate of 65% and 114 PPI, and an ultra-high brightness of more than 2,000 nits. This is coupled with image-recognition technology, allowing visitors to see deep-sea fish transforming from a skeleton specimen to a lifelike swimming real fish by simple gestures. In doing this, the Aquarium hopes to arouse visitors' interest so that they gain in-depth understanding and learning of fish-related knowledge.



MicroLED technology is applied to social education institutions to present "moving deep-sea fish specimens". In addition to subverting the traditional static display of taxidermy, MicroLED technology brings a brand new experience to the audience. The technology also enables the general public to get up close with MicroLED for the first time, enhancing their understanding of MicroLED's display advantages such as high transparency, high brightness, and high resolution.

Combining technology and art with interactive installation art using MicroLED

Restoration of a work of art can be more complex, both aesthetically and technically, than it is when working with an artist. In 2023, PlayNitride was invited to restore the interactive installation art ^{Note} in the lobby of the W Hotel in Taipei. This work

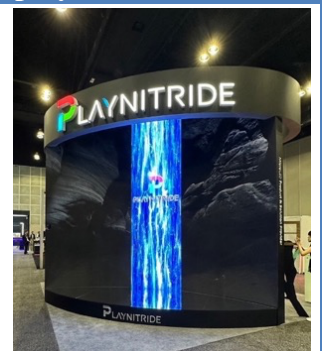


ingeniously combines technology and art to interact with viewers through light and shadow, using complex programming, cameras and sensors to form a control system that responds to human movement. In order to perfectly reproduce the original design concept, we successfully replaced OLEDs with MicroLED as the light-emitting material to complete the splicing of 2,688 MicroLED panels. The entire device uses nearly 40 million MicroLED, further optimizing the gloss level of the glass mirrors of the panels to enhance the sense of static art. Technically, it is not only necessary to customize the arrangement of MicroLED on the light panel to match the original control system, but also to redesign the driving circuit, and then perform detailed settings and repeated fine-tuning to make the response rhythm smooth. The light panels can be adjusted or restored as needed to maintain the vitality and sustainability of the artworks. This special cooperation project highlights the diverse application aspects of MicroLED. Not only can MicroLED be used as a display, but also can be extended to various fields of light demand, presenting their potential wide range of applications.

Note: The interactive installation art "To Light You Fade" was designed by Random International Design Company 10 years ago. Originally, OLED was used as the light-emitting source. As the organic light-emitting material of OLED deteriorates over time, its brightness decreases. In October 2023, PlayNitride re-interpreted this artwork using MicroLED to reproduce the beautiful mirror luster and dynamic gradation of light and shadow of the original design.

MicroLED Remove Constraints on Production of Large Displays

The market demand for home displays (TVs) over 75" is increasing year by year, and super-large has become the main product. However, the existing LCD and OLED display technologies have a size upper limit that is difficult to break due to the economical cutting size of glass substrates and border restrictions. Through the modular design, MicroLED can be used to splice ultra-large displays of various sizes and ratios, providing a more shocking viewing experience with seamless splicing like giant canvases. The ultra-high image quality and high precision make MicroLED a large display that can present detailed image effects, which is ideal for close-up viewing.



As consumers continue to watch programs on streaming platforms such as Netflix and Disney+, if they want to enjoy a higher quality audiovisual entertainment experience, the image display trend will inevitably move towards high-resolution 4K HDR or even 8K. The market demand for home theater systems that meet the needs of high-end consumers and integrate audiovisual enjoyment into interior design is gradually increasing. MicroLED displays that can be connected to the wall will be the ultimate choice for the home theater market.

In 2023, the 166-inch Portrait Seamless MicroLED Modular Display exhibited at SID and won the Best MicroLED-based Technology Award. This ultra-large video wall has a brightness of over 2,000 nits, a contrast ratio of up to 5,000,000:1, 16-bit grayscale control, and a refresh rate of 3840Hz.

Compared with display technologies such as LCD and OLED, MicroLED's power consumption is about 20% of that of LCD and 25% of OLED of the same size, which helps reduce the power consumption of large displays. In the future, as the energy efficiency of MicroLED continues to improve, we will move towards mainstream displays in the era of zero carbon economy. The MicroLED TVs launched by brand customers, ranging in size from 76" to 114", were officially launched in 2023. The products are mainly used in home theaters designed for high-end residential furniture, while public display products are mainly used in smart retail venues, control centers, and public spaces.

Interpretation of the new display style of smart mobility, MicroLED display technology provides a virtual and real interactive platform

In-vehicle displays must cope with the ultra-high and ultra-low brightness of the outdoor environment and withstand the harsh environment of high and low temperature. Under the trend of smart mobility innovation, displays, as an important interface for "human-vehicle interaction", have large screens, multiple screens and interactivity, providing clear information and audiovisual enjoyment, and integrating different interior materials to show the brand design style. In addition, with the increase in the number of displays in cars, power saving will also be a key consideration. MicroLED have the advantages of high brightness, high contrast, wide color gamut, fast response speed, and high reliability, with power consumption only 10% of that of LCD. One of the reasons is that MicroLED can effectively reduce the electricity burden of future electric vehicles and increase the cruising range.

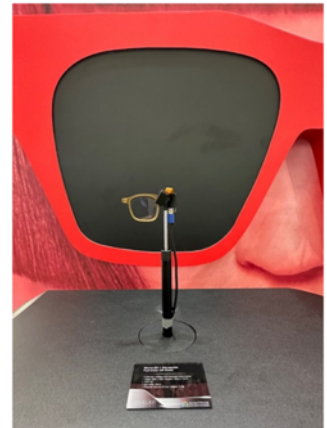
In 2023, PlayNitride had been recognized by many automakers and brands, and we began to provide samples to automakers and Tier 1 auto parts manufacturers for concept car and concept display design, while conducting important evaluation items such as life testing and optoelectronic performance. At CES in early 2024, the Company and a number of Tier 1 auto parts manufacturers jointly participated in the exhibition of the application scenarios of simulated automotive cockpit display systems, such as side windows, rear seat displays, and luxury crystal instrument panels. Our aim was to highlight the high transparency, flexibility, and high brightness of MicroLED technology, demonstrating the new in-vehicle display environment.



In addition, MicroLED is also expected to be applied to the aviation industry in the future. Besides high reliability, MicroLED's ultra-high and ultra-low brightness variability enables it to be highly adaptable in the sky during daytime and nighttime. At the same time, its wide color gamut can also provide drivers with accurate information and improve flight safety.

MicroLED Set to Become Key Display Component for Metaverse

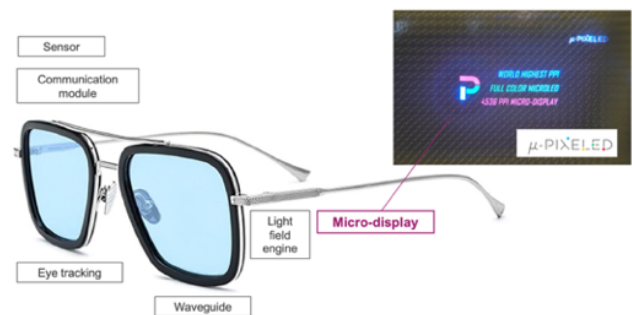
Since major foreign social media companies published the Metaverse Future Blueprint, the development of augmented reality (AR) and virtual reality (VR) equipment has attracted much attention and is also regarded as the next generation of mobile computing platforms after smartphones. Although a few products have come out at this stage, there is still a lot of room for improvement in terms of brightness, image quality, lightness, and comfort. Microdisplays are an important component in entering the metaverse. They need to achieve transmission and high-definition display on a display panel the size of eyeglasses. Therefore, MicroLED is also recognized as the most important microdisplay technology in the future. Currently, there are very few companies with full-color microdisplays, and the brightness specifications are generally lower than 100,000 nits. The μ -Pixel LED technology developed by PlayNitride uses the miniaturization of MicroLED chips and silicon wafers to drive backplanes to easily achieve more than 4500PPI, with a brightness of up to 150,000 nits, enabling the creation of lighter, higher-resolution, and brighter future AR equipment, realizing a more intuitive and immersive user experience, and ushering in a new era of human-machine interfaces.



In 2023, we exhibited a 0.49-inch 4536 PPI FHD single-chip full-color MicroLED micro display with ultra-high pixel density, ultra-high brightness, and ultra-high color saturation at SID. The 1.2-cm³ optical engine allows visitors to experience the effects of AR glasses live and won the 2023 SID Best AR/VR/MR Demo/Product Award.

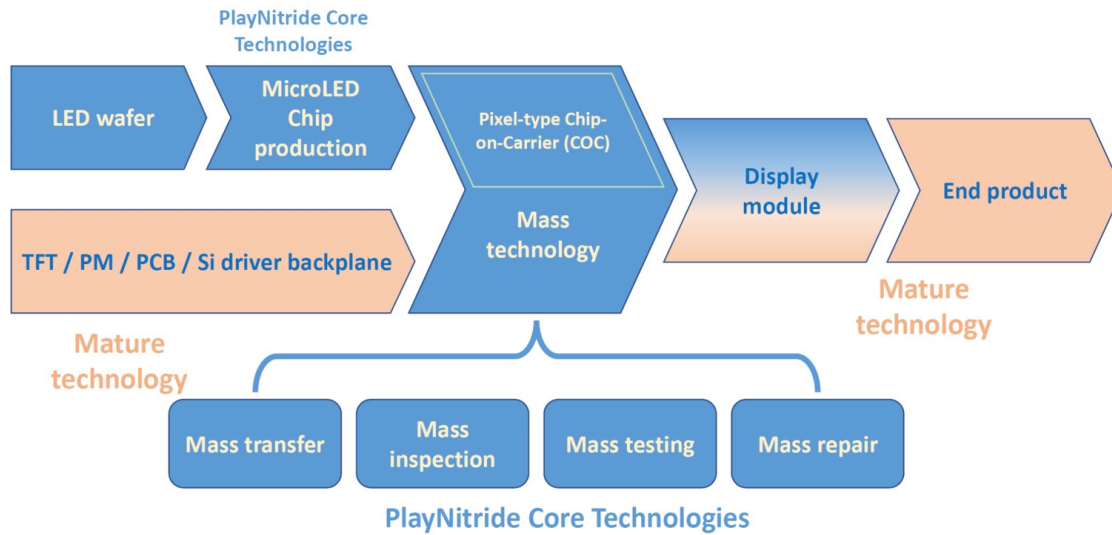
We have maintained a leading position in the world in terms of brightness. In 2023, we will continue to break through technical challenges and increase the brightness to 150,000 nits, which is three times more than our own specifications in 2022. This brightness is much higher than that of other display technologies, such as MicroOLED, by 10 times to 50 times, attracting many customers to actively develop new products. In 2023, PlayNitride continued to work with brand customers to develop AR glasses. Due to the high initial cost and relatively specialized technology, the priority products to enter the market will be mainly commercial scenarios that can improve the efficiency of professional fields, such as industrial, medical, and aviation. In the future, the most important usage scenarios for AR glasses will be light, thin and stylish smart accessories that can be integrated into daily life. In the future, with the continuous advancement of technology and cost reduction, AR glasses will become as indispensable product to life as smartphones.

MicroLED is the key micro display for AR glasses



3-2 Technical Advantages

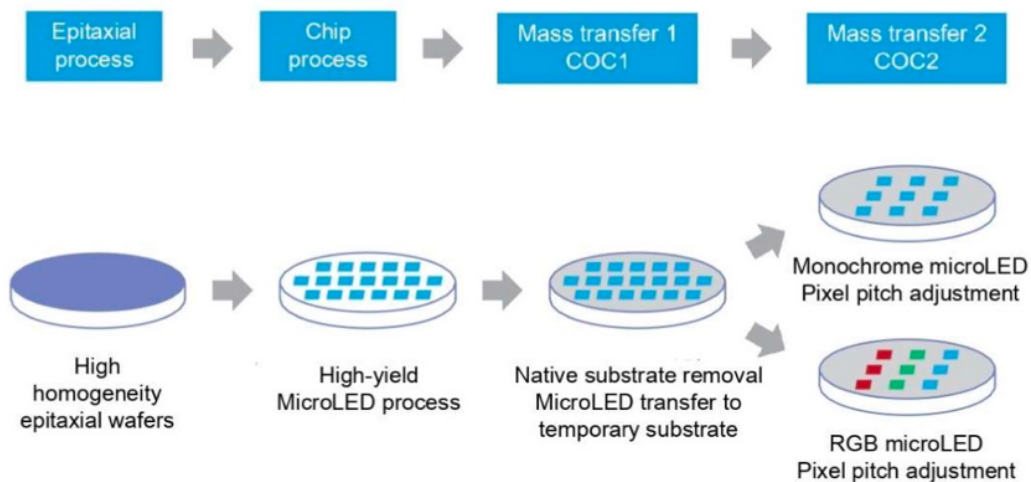
MicroLED is a technology that requires extremely high integration. Our R&D scope covers from upstream to downstream, including epitaxial wafer development, MicroLED chip design, mass transfer and testing, and module design. In this brand-new display field, no existing LED or display industry company can complete the development of MicroLED technology alone. Therefore, compared to the companies in the industry, PlayNitride, with high technology integration, is more flexible in R&D and process design.



Continue to Lead the Way in Mass Production and Shipment

As one of the few manufacturers in the industry with a track record of shipping, we have technical advantages and continuous breakthroughs in various key processes to provide customers with complete MicroLED solutions. The miniaturization of MicroLED chips is the long-term direction of our R&D innovation. For the 6-inch COC1 product shipped in 2023, the size of the MicroLED chips on wafers decreased by more than 70% compared to that of the previous year, increasing the number of wafers by two times, improving wafer yield and wafer efficiency and further reducing energy consumption per unit of MicroLED chip manufacturing process.

In 2024, we will continue to develop MicroLED chips with higher luminous efficiency, and are expected to launch a cross-generation MicroLED chip structure to further reduce the energy consumption of MicroLED displays.



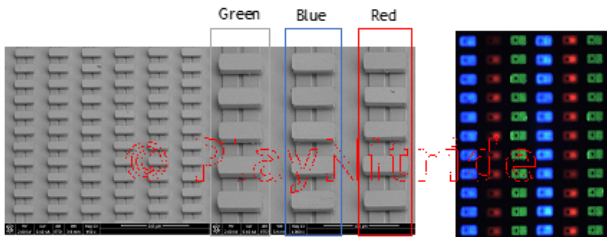
Technical Advantages

High uniformity 6-inch R/G/B LED wafer

- Uniform brightness across wavelengths, no need for binning

High yield R/G/B Micro LED chips

- Chip on wafer yield > 99%
- LED wafer utilization > 80%



Industry-leading mass transfer, inspection and testing

- Self-made automatic mass transfer equipment
- Massive addressing repair technology

Self-developed Micro LED one-stop solutions

- Cooperating with industry-leading panel display manufacturers
- Providing various Micro LED chips for various displays including ultra-micro, tiling, highly transparent and flexible Micro LED displays.
- Supporting customers design needs for different applications

Product Sustainability Design

MicroLED's high efficiency, low power consumption, and long life cycle are the essence of a new generation of low-carbon products. In response to the international trend of net zero and circular economy, we will continue to evaluate how to optimize R&D design at all stages of the product lifecycle to minimize environmental impact.

R&D and Design Stage

Optimized Structure	<p>The size of the MicroLED chip has decreased compared to the previous year, which doubles the number of chips on each 6-inch wafer. Under the same process, the energy consumption per unit chip in the process can be reduced by 50%.</p> <p>When the chip maintains the same luminous efficiency but decreases in size, it will also make displays using MicroLED more energy-efficient.</p>
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Production and manufacturing stage

Increase production efficiency	<p>Through the introduction of automated equipment in the COC product cleaning process, the need for rework caused by human or manual operations has been greatly decreased. After the introduction, the rework rate has been greatly reduced from about 50% to less than 1%. After the improvement, the production capacity of this process section has approximately doubled.</p>
Reduce the use of raw materials	<p>We continued to evaluate acetone reduction plans. Acetone is mainly used for COW cleaning and photoresist removal processes. We continued to adjust some related processes by introducing water to replace acetone to maintain the same removal effect. Compared with before the introduction, the average acetone usage on a single wafer is reduced by about 60%.</p>
Extend tool life	<p>The Company introduced a key mass repair technology to extend the life of the fixture replacement by 20% in 2023 while maintaining the original panel pass-through rate to reduce the cost of new fixture production.</p>
Circular economy	<p>By collecting the precious metals remaining on the equipment or materials during the manufacturing process to be refined and recovered by the OEMs, 80% of the precious metals can be recovered and purified to promote the recycling of resources. Mainly from the equipment liner and chamber wall baffle of the E-beam evaporation machine in the coating process, the tape in the lift-off process, and the waste liquid from the wafer cleaning process.</p>

Product Use Stage

Low power design

For high-volume products, we continue to reduce power consumption through R&D, and the chip size is reduced by more than 70% compared to the previous year. Since the number of MicroLED chips used in displays of the same resolution and specifications is the same, when the chips maintain the same luminous efficiency but shrink in size, they can be driven with less power, and the power consumption of the application in the display can be reduced by about 20% compared to the previous year.

3-3 Intellectual Property Management

Management Mechanism

The "Intellectual Property and Legal Division" is the responsible unit for intellectual property protection and management. We have also formulated the "Procedures for Related Intellectual Property Assurance" for related matters. We apply for a patent or list it as a trade secret for each new technology or new improvement plan established to achieve intellectual property protection, facilitating the effective implementation of R&D operations.

At present, there are corresponding patent

applications for each core item from the development of epitaxy materials and structures, the design of die structure to mass transfer, testing technology, or the technology of transforming machine equipment. For the more critical R&D achievements that are not suitable for external patent applications, we established a comprehensive trade secret registration system in 2022 to properly preserve and control confidential information, and clearly define the scope of trade secrets and how to classify and manage them for management. At the same time, we strictly control the relevant access rights to fully implement the intellectual property protection of core technologies. In order to further protect the intellectual property rights of R&D results and technologies, and to ensure proper authorization management of R&D documents and data at all stages, the patent management system was introduced in 2023 to implement comprehensive patent management, from patent application and certification to maintenance cost management. Process management ensures the monitoring and real-time update of the status of each patent, and can automatically generate and provide data analysis to reduce manual errors and operation time, and help the management make more informed decisions based on patent status, cost, and potential value.

All employees are obliged to protect the Company's secrets. We continue to enhance intellectual property protection awareness through education and training, and sign confidentiality agreements with customers to protect the rights and interests of both parties. The use of personal storage devices and photography and video equipment in the plant is prohibited. Through the abovementioned mechanisms, we ensure the integrity of PlayNitride's intellectual property and prevent information leakage.

Patent Application

We apply for patents for potential innovations and optimize the quality and scope of patent applications to obtain the best protection effect. Regularly review the patent portfolio that has been applied for and conduct value assessment to identify high-value patents and formulate corresponding commercialization strategies. Continue to monitor the development of relevant technologies and newly applied patents in the market to assess the impact on the Company's patent portfolio.

Intellectual Property Strategy Blueprint	
Patent Management	Trade Secret Management
<ul style="list-style-type: none"> • Patent Management System • Patent Protection Strategy • Regular Review of Patent Portfolios • Patent Value Evaluation • Formulate Commercialization Strategies • Monitor Market Competition Information 	<ul style="list-style-type: none"> • Trade Secret Registration System • Document Classification and Management • Strictly Control Access Rights
Basic Policy and Training	Reward Innovation
<ul style="list-style-type: none"> • Intellectual property education and training for all employees • Regular patent knowledge training and compliance guidance for R&D personnel 	<ul style="list-style-type: none"> • R&D Patent Bonus • Proposal Competition Incentives

As of the end of 2023, a total of 816 international patents related to MicroLED technology had been applied for, of which 65% are for core mass production technologies and 35% for potential innovative technologies. Our patent portfolio covers the application fields of various panel products, enabling the Company to produce different types of panel products including large-size commercial displays, automotive displays, ultra-thin displays, high-brightness wearable displays, and ultra-thin and flexible displays. These products are suitable for a wide range of end markets. In all the above categories of end applications, we have established a comprehensive patent strategy to form a strong technical patent protection barrier.

In anticipation of the rapid growth of the MicroLED market, PlayNitride plans to further expand its patent application countries from major countries such as the U.S., China, Taiwan, and South Korea to other important markets including Europe and Asia. In addition, PlayNitride is evaluating the implementation of patent licensing strategy to develop additional sources of income and bring more economic benefits to the Company.

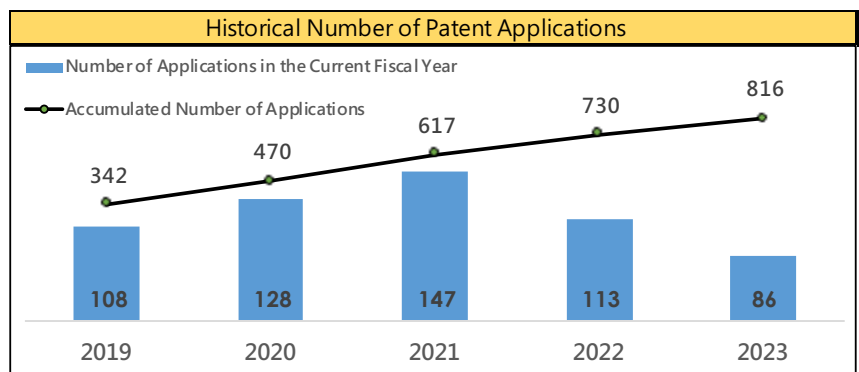
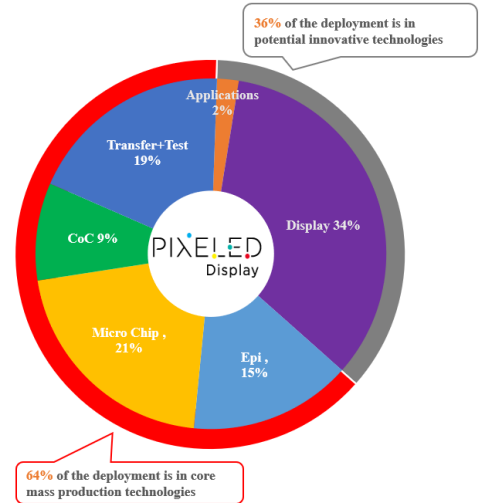
Reward Innovation

Incentives are provided every year based on the performance of the proposed application targets to reward patent applications and patents obtained in various countries, and encourage R&D personnel to actively seek new technologies or improvements that can be patented. In 2023, with each department as a unit, the status of patent strategic deployment was regularly published and the status of patent applications provided to encourage R&D colleagues to strive for patent applications and obtain patents. There was a total of 45 patent proposals and a total of 54 R&D colleagues have been granted application bonus and patent certification bonus.

There was a total of 45 patent proposals and a total of 54 R&D colleagues have been granted application bonus and patent certification bonus.

Education and Training

Through training planning and execution, the R&D personnel have a deeper understanding of the intellectual property application and protection system. This helps achieve the simultaneous improvement of the quality and quantity of patents, and to strengthen the awareness of trade secrets protection.



Training Category	Course Title	Trainees	Frequency	Number of Participants	Total Training Hours
Intellectual Property Application Process	Introduction to Patents	R&D Engineers	1	100	1.5 hours
Intellectual Property Protection Knowledge	Understanding Confidentiality Agreements and Copyrights in Law Classroom	R&D Engineers	1	100	1.5 hours
Intellectual Property Application Process	Course on PlayNitride's "Trade Secret Protection and Incentive Measures"	R&D Engineers	1	60	1 hour
Intellectual Property Protection Knowledge	Introduction to Trade Secrets	Manufacturing Center Engineers	1	100	1.5 hours

3-4 Hazardous Substance Management

In response to the international environmental protection trend and customer requirements, we have introduced a green product management mechanism, set up a management mechanism for raw materials. At the same time, we continue to track product safety information to ensure that the materials used in products comply with international, regional, national and customer standards for environmentally related substances and hazardous substance content in products, fulfilling our commitment to product safety. At present, the main management basis of the EU RoHS, REACH and Taiwan CNS management requirements for hazardous substances is to update the survey with the suppliers according to the latest list of prohibited/restricted substances announced by RoHS and REACH every six months and request the suppliers to sign back the commitment. The supplier signature rate is 100%. Formulate a hazardous substance management policy and establish a product hazardous substance management system to comply with product environmental regulations throughout the entire life cycle of product planning, development, and production to avoid environmental pollution and harm to human health.

Hazardous Substance Management Policy

- **Compliance Pollution Prevention**
- **Continuous Improvement Sustainable Management**

Product Management Items

Material Approval	<p>A management list of environmental substances and hazardous substance compliance standards for products is maintained. The R&D department includes the requirement for suppliers to provide the Safety Data Sheet (SDS) and test report from an independent third-party in the “Material Approval Sheet” to ensure compliance with standards in subsequent procurements.</p> <p>Customer requirements on disclosure of hazardous substance information for products such as RoHS, REACH, lead-free, halogen-free are identified. Particular emphasis is given to the requirements of potential customers on hazardous substance standards (e.g. RoHS and REACH).</p>
Supplier Management	<p>Supplier materials that conform to PlayNitride’s management standards on environmental and hazardous substances can undergo the green product rating program of PlayNitride’s supplier management standards. Once it meets all other standards then the supplier can be added to the list of approved suppliers for procurement. Regular supplier audits will be conducted in accordance with the Supplier Management Procedures to ensure their management effectiveness.</p>
Procurement Management	<p>Under the “Hazardous Substances in Products Management Procedure”, suppliers are required to provide their SDS, “Declaration of non-use of substances prohibited/restricted by the relevant environmental regulations”, and RoHS test report.</p>
Quality Assurance Inspection	<p>Suppliers must carry out third-party X-Ray Fluorescence Spectrometer (XRF) testing for all materials they supply. An ICP test report from within the last year must also be provided by suppliers. If more than one year had passed then a test report from an independent third-party must be provided or the materials will be rejected. If the hazardous substance test report of a raw material is unsatisfactory, the finished product in the plant must be labeled immediately, and must be moved to a designated area for controlled isolation and disposal, and must not be put into production.</p>
Education and Training	<p>We arrange for employees to receive education and training on environmental protection and professional knowledge and operation methods related to hazardous substances in products once a year, and announce the latest international regulations on hazardous substances and customer standards from time to time.</p>

3-5 Supply Chain Management

Supplier Management

PlayNitride regards suppliers as important partners in creating key technologies and improving product quality. In 2023, with reference to the Responsible Business Alliance (RBA) we formulated the [PlayNitride Supplier Code of Conduct](#), requiring suppliers to comply with the standards of business conduct with respect to labor, health and safety, environment, business integrity and management system. Moreover, a new score for technical capabilities is added to the annual evaluation item. In doing this, we hope to work hand in hand with suppliers in terms of operations and sustainable development to create a more resilient MicroLED industry chain. In Q4 2023, we promoted the Supplier Code of Conduct to key suppliers and required them to sign the letter of commitment. By the end of 2023, the supplier signing rate was 87.5%.

Supplier management covers 4 stages: new supplier assessment, supplier assessment, annual audit, and improvement coaching.

New supplier assessment		Supplier assessment	Annual supplier audit	Coaching and improvement
Object	New suppliers	Key suppliers ^{Note}	Key suppliers	<ul style="list-style-type: none"> Suppliers rated C Major raw material suppliers that have not obtained designated international certifications
Purpose	Select and introduce qualified suppliers	Ensure that the quality, delivery, service, and technical capabilities of suppliers meet the requirements.	Examine whether the supplier's management system is maintained in compliance with the requirements of PlayNitride and customers	Assist suppliers to improve quality, or require suppliers to obtain relevant management system certification
Frequency	Ad hoc	Monthly/yearly	Yearly	Ad hoc

Note: Key suppliers are all direct material suppliers and outsourced processors

New supplier assessment

We refer to the eco-partner specifications for sustainable supply chain management of major international manufacturers, and the introduction units must follow the internal specifications for material recognition. Suppliers of direct materials/packaging materials are required to provide the following documents and pass the written evaluation, on-site evaluation, sample evaluation prior to becoming qualified suppliers. Starting in 2023, a technical score document was added to examine whether a supplier has the ability to innovate in technology and can support and cooperate with the quality and innovative product needs of PlayNitride and customers in the field of MicroLED.

New Supplier Introduction Qualification

- Letter of Commitment for Substances Prohibited/Restricted in Environmental Regulations (including REACH substances)
- RoHS test report (valid within one year)
- Safety Data Sheet (SDS)
- Conflict Minerals Reporting Template (CMRT)
- Technical documents

Supplier assessment

An identification and classification management system has been established in the supplier management procedure. All direct materials and outsourced processing suppliers are listed as key suppliers. Monthly and annual evaluation mechanisms have been set up to fully grasp the current status of suppliers and ensure the quality of materials to reduce supply risks. PlayNitride divides the supplier assessment scores from A to E, and requires suppliers with a rating below C to propose appropriate improvement plans. Suppliers with two consecutive E ratings will be disqualified from cooperation.

In 2023, the supplier's delivery time, service, and quality were assessed on a monthly basis. The annual assessment included new technical capabilities, with a passing score of 80 points. In 2023, the average total supplier score reached 94.1, and no suppliers were rated below grade C, and 100% of the suppliers should have completed the assessment.

Annual Supplier Audit

Annual audits are performed according to the schedule. Through the annual Quality System Audit (QSA) survey, combined with on-site audits or video methods, all key suppliers are reviewed every year for whether their quality systems, green product systems, environmental safety and health systems continuously meet the requirements of both PlayNitride and customers. In 2023, 100% of the targets were audited, with an average audit score of 99.67 points and an average of 9.8 defects, which have all been tracked and improved.

Supplier Coaching and Improvement

For the main raw materials, suppliers are required to provide certificates of validity of the ISO international standard management system certification. A monitoring mechanism is in place for the important characteristics of raw materials. If there are any abnormalities, the Company will discuss with the suppliers on the improvement measures.

For the links in the regular evaluation and audit results that the suppliers do not meet the requirements, we will propose improvement requirements or provide guidance to help improve the performance of the suppliers. There was no such situation in 2023.

Conflict Mineral Management

At PlayNitride, we are committed to not using conflict minerals, and will continue to perform due diligence on new and existing suppliers. Materials and equipment components/parts provided by suppliers must not contain conflict minerals such as Gold (Au), Tantalum (Ta), Tin (Sn), Tungsten (W), Cobalt (Co), and their derivatives sourced from the Republic of Congo and its surrounding countries/regions.

Every year, suppliers of specific raw materials are required to complete the report according to the Conflict Minerals Reporting Template (CMRT) format and submit the report to PlayNitride for confirmation. The investigation of the designated suppliers was completed in 2023, and we will continue to improve our practices in the future to ensure that our suppliers do not use conflict minerals.

3-6 Quality Management

Quality Management

We have passed the ISO 9001:2015 quality management system certification since 2019, and have established and implemented an effective quality management system with international certification standards to enhance customer satisfaction.

In response to and confirming the needs of future automotive customers, the system began to operate in 2023 in accordance with the IATF 16949 Quality System Architecture Procedures completed in 2022 to produce Measurement System Analysis (MSA) and Failure Analysis (PFMEA) records. Based on the spirit of improvement, we review the procedures and formulate improvement directions. We plan to update the system structure and procedures in 2024, and the goal is to complete the implementation of the IATF 16949 management system and obtain certification in 2025.

In addition, MicroLED is a semiconductor manufacturing process. In order to achieve robust electro static discharge (ESD) protection, it is expected that we refer to the ANSI/ESD S20.20 electrostatic discharge protection standard and the Company's production site conditions. We plan to formulate an ESD protection procedure document in 2024 Q2 to prevent ESD from affecting product quality.

Introduction of Smart Management

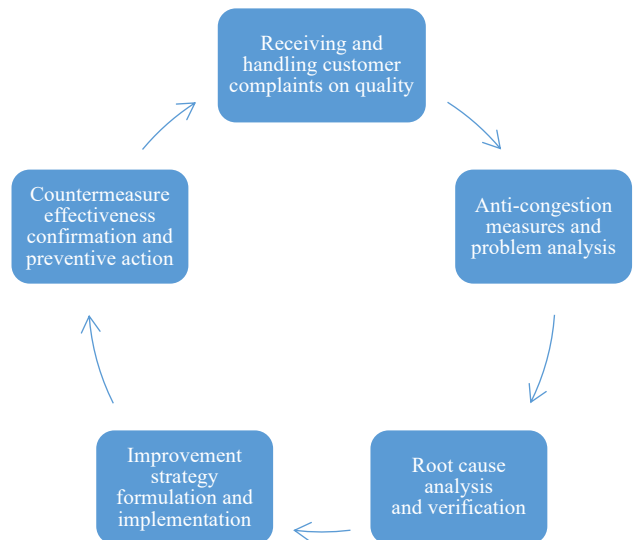
In order to continuously improve the timeliness and transparency of quality management data, the Computer Integrated Manufacturing (CIM) system has been established since 2022, and the optimization continued in 2023 to create an automated system for yield monitoring based on semiconductor process specifications. Through the management of production automation data, machine monitoring information, and statistical process control, the quality and process information of the entire production process can be tracked from material entry to the production line to shipment, so as to continuously improve the process, production efficiency, and product quality.

Customer Complaint Handling Process

We regard every customer feedback as an opportunity for continuous improvement and the driving force behind our continuous improvement. We have established a comprehensive customer complaint mechanism to ensure that customers' complaints and opinions can be effectively communicated, handled and responded to through a systematic and standardized process. We track and confirm that all complaints are properly dealt with before closure to prevent recurrence. In 2023, the customer complaint closure rate was 100%.

Quality Policy

- Take in customer comments
- Pursue innovation and excellence



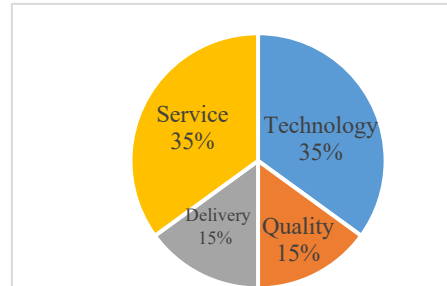
Customer Relationship Management

We continue to pursue innovation and quality to provide customers with MicroLED products and services.

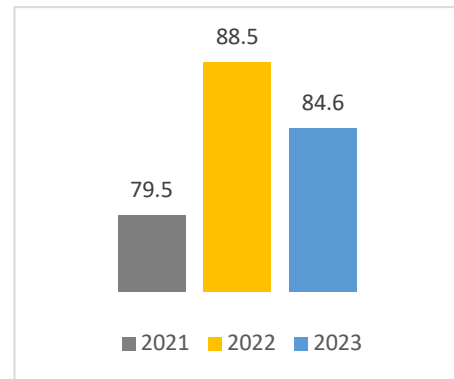
We have customer data protection management systems and policies in place to protect customer privacy, and closely guard the confidential information of customers through internal audits, external verifications, and education and training. There is a dedicated product manager for customer service, who actively checks and confirms the implementation of the customer service policy, protects customer rights and improves customer satisfaction.

In order to understand customer opinions, feedback and needs for products and services, the "Customer Satisfaction Survey" is distributed to the customers of the year to understand their ratings on four aspects: technology, quality, delivery, and service. The survey was sent out to our major customers who accounted for more than 90% of our revenue in 2023, and the overall average of the customer satisfaction rating was 84.6 points, which was 3.9 points lower than the 88.5 points in 2022. The customer satisfaction survey results will also be used as a reference for the Company's future strategic planning and improvement. In 2023, mainly due to the rapid increase in customer demand, the supply exceeded demand, resulting in an unsatisfactory delivery time. However, the accuracy of shipments has improved compared to the previous year. In the future, we expect to continue communication and improvement with customers on production capacity and delivery time communication.

Distribution Ratio of the Four Aspects of the Customer Satisfaction Survey



Customer Satisfaction



4. Corporate Governance

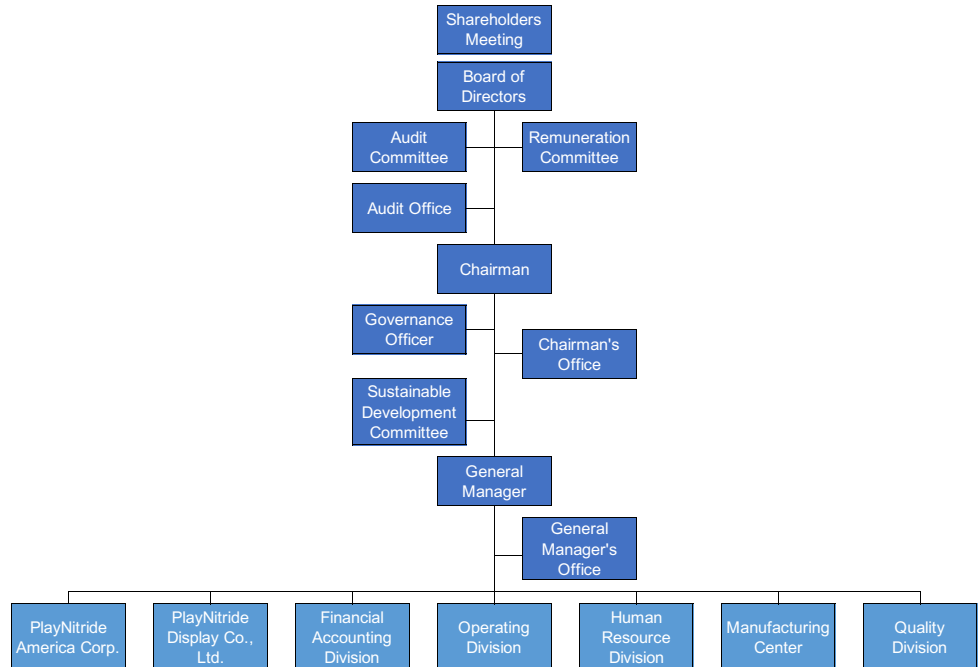
4-1 Corporate Governance

Corporate Governance Framework

The Board of Directors is the highest governance body of the Company, supervising the Company's operations and ensures that the Company exercises its functions and powers in compliance with various laws and regulations, the provisions of the Articles of Incorporation and the resolutions of the Shareholders' Meeting. At the same time, the Board of Directors also provides professional strategies and recommendations to management to create higher benefits for shareholders and protect the rights and interests of all stakeholders. There are two functional committees under the Board of Directors, namely the "Remuneration Committee" and the "Audit Committee" to improve the Board of Directors' supervision and management function. In addition, in line with the Sustainable Development Action Plan for TWSE/TPEX Listed Companies, we plan to establish a sustainability committee in 2024.

At present, the founder, Mr. Charles Li, serves as the Chairman & CEO. This is mainly due to the fact that the Company has just been established for 10 years and is still in the early stage of development. The management structure is simplified to ensure organizational flexibility and accelerate the decision-making process. To reduce the possibility of conflict of interest between the chairman and other directors, we have followed Article 16 of the "Rules of Procedure for Board Meetings" and explained in the annual report the content of the motion, the names of the directors involved in the motion for which the directors had a stake, their reasons for recusal, etc. In addition, in accordance with the "Taiwan Stock Exchange Corporation Operation Directions for Compliance with the Establishment of Board of Directors by TWSE Listed Companies and the Board's Exercise of Powers", an additional independent director was elected on the Board of Directors in June 2023 (there are currently four independent directors). More than half of the seats were independent directors, and more than half of the directors do not concurrently serve as employees or managers. Each director participates in professional director training courses of external institutions every year to enhance the operational efficiency of the Board of Directors. Independent directors can fully discuss in all functional committees and put forward suggestions for the board's reference to implement corporate governance. In addition, the existence of controlling shareholders and related party transactions with stakeholders are disclosed in the annual report every year.

The Sustainability Committee has been established under the Chairman & CEO's Office to be responsible for implementing policies and goals related to sustainable development. The Sustainability Committee reports to the Board of Directors on a quarterly basis and makes recommendations in a timely manner after listening to the reports. For the management of sustainable development issues related to the economy, environment, and people, see 2-1 Sustainability Policy and Operations.



Election of the Board of Directors

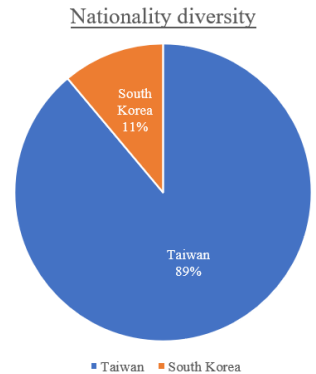
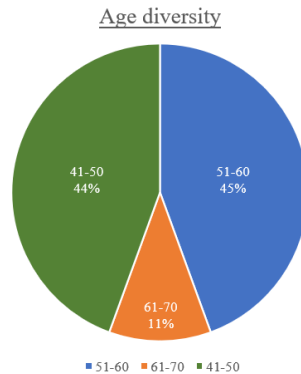
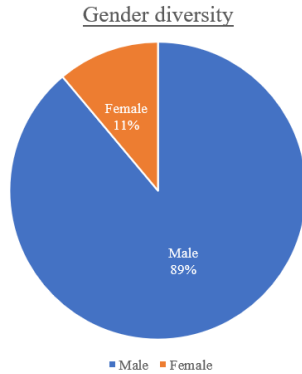
Except as otherwise provided by laws and regulations or the Articles of Incorporation, the election of the Board of Directors shall be subject to the "Procedures for the Election of Directors". The candidate nomination system is adopted for the election of directors. The "Board Diversity Policy" has been established in the "Corporate Governance Best Practice Principles". Considering the overall composition of the Board of Directors and the diversity of its members, the nomination qualifications and evaluation criteria of candidates shall take into account the Company's operations, the operation type and development needs with an appropriate diversification policy formulated. The policy shall cover the two major aspects of

basic conditions and values, professional knowledge and skills, in order to improve the structure of the Company's Board of Directors and ensure that the composition of the Board is composed of diverse professional backgrounds, genders, ages, nationalities and cultures, etc.

Diversity of the Board of Directors

The current Board of Directors elected 8 directors and independent directors on December 24, 2021. Subsequently, the Board of Directors elected 1 additional independent director in June 2023. Therefore, there are currently 9 directors, of which 4 are independent directors (accounting for 44.44% of all directors). The term of office of directors is three years. All four independent directors meet the qualification requirements of the "Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies", including their expertise, work experience, independence, and the number of concurrent independent directors. As of the end of 2023, the 9 directors included 8 males and 1 female, aged

41 - 70; 8 directors are from Taiwan and 1 South Korea. The directors are technical professionals, industry experts, management talent, and financial professionals, with diversity in professional



qualifications, experience, gender, age, nationality, and culture. In order to continuously strengthen the functions of directors, we plan courses for directors on corporate governance, the latest laws and regulations related to sustainable development, and system development and policy. The average number of training hours in 2023 was 9. Please refer to the Company's [annual report](#) for a complete description of the members of the Board of Directors, their continuing education, and their employment status in other companies.

Members of the Board of Directors ^{Note 1}

Name	Job Title	Age	Gender	Nationality	Professional Knowledge and Skills				Functional Committee	
					Business Management	Decision-making in Leadership	Industry Knowledge	Financial Accounting	Audit	Remuneration
Charles Li	Chairman	41-50	Male	Republic of China	V	V	V	V		
Hsien-Pei Sun	Director	41-50	Male	Republic of Korea	V	V	V			
Li-Chen Hung	Director	41-50	Female	Republic of China	V	V	V			
Wei-Lin Liao	Director	51-60	Male	Republic of China	V	V	V			
Shou-Yen Liao	Director	51-60	Male	Republic of China	V	V	V			
Yi-Cheng Liu	Independent Director	51-60	Male	Republic of China	V	V	V	V	V	V
Fung-Yuan Kan	Independent Director	51-60	Male	Republic of China	V	V	V	V	V	V
Wei Wang	Independent Director	61-70	Male	Republic of China	V	V	V	V	V	V
Yun-Chih Tao ^{Note 2}	Independent Director	41-50	Male	Republic of China	V	V	V	V	V	

Note 1: List of directors at the end of 2023; Note 2: Elected in June 2023.

Operation of the Board of Directors

The Board of Directors convenes a meeting at least once a quarter to discuss various operational matters of the Company and announce its resolutions in accordance with the law. If the motion is of interest to the directors themselves or the juristic person they represent, they shall follow the internal recusal system in the Rules of Procedure for Board Meetings and shall not participate in discussion or voting. Five Board meetings were held in 2023 (as of the end of 2023). The operation of relevant meetings and the recusal due to conflicts of interest has been announced in the Company's annual report.

Job Title	Name	Actual Attendance ^{Note}			Remark
		Attendance in Person	By Proxy	Attendance Rate	
Chairman	Charles Li	5	—	100%	
Corporate Director	SVIC No. 32 New Technology Business Investment L.L.P.	5	—	100%	Legal Representative: Jung-Ho Kim (stepped down on 2023/12/21) Sen-Pai Sun (Newly appointed on 2023/12/21)
Corporate Director	Epistar Corporation	5	—	100%	Legal Representative: Li-Chen Hung
Corporate Director	Kang Li Investment Co., Ltd.	5	—	100%	Legal representative: Wei-Lin Liao
Corporate Director	Lite-On Technology Co., Ltd.	5	—	86%	Legal Representative: Shou-Yen Liao
Independent Director	Yi-Cheng Liu	4	1	100%	
Independent Director	Fung-Yuan Kan	5	—	100%	
Independent Director	Wei Wang	5	—	100%	
Independent Director	Yun-Chih Tao	3	—	100%	Newly appointed on 2023/6/26

Job Title	Name	Actual Attendance ^{Note}			Remark
		Attendance in Person	By Proxy	Attendance Rate	
Note: 5 times as this data covers the disclosure period up to December 2023					

Strategies and Practices in Response to the Impact of Material Sustainability Issues

For the policy, planning, and implementation process of various issues in the operation process, we have established relevant procedures to report or discuss with the Board of Directors on a regular or unscheduled basis. For example, Article 3 of "Procedures for Board Meetings" and Articles 25 and 35 of the "Corporate Governance Best Practice Principles stipulate the types of motions that should be submitted to the Board of Directors for discussion/resolution. In addition, according to Article 9 of the "Sustainable Development Best Practice Principles", the sustainable development policies, systems, or related management approaches must be reported to the Board of Directors on a regular basis. In addition, in accordance with the requirements of the "Ethical Corporate Management Best Practice Principles" and "Operating Procedures for Ethical Management, and Code of Conduct", the establishment of ethical corporate management policies and preventive plans if there is a major violation or major losses to the Company after investigation, the Board of Directors must be reported to. According to the relevant laws and regulations or internal procedures, each proposal needs to be approved by the Board of Directors as a "discussion proposal". Those not requiring a Board resolution are submitted as a "report proposal". A proposal approved by senior management will be included in the agenda of the next Board meeting. Resolutions are made on the discussion items at the Board meeting, and questions or suggestions are raised on the report items.

Since 2022, the results of GHG inventory and sustainability report preparation have also been included in the items for regular reporting to the Board of Directors. In 2023, the Climate-related Financial Disclosure (TCFD) project was also launched to improve climate strategy and risk management. In the future, the project will be included as a motion in a regular Board meeting. All major resolutions of the Board of Directors in 2023 have been published in the Company's annual report.

Operation of the Functional Committees

Audit Committee	Remuneration Committee
<ul style="list-style-type: none"> Composed of four independent directors Established in 2022 A total of five meetings were held in 2023, with an attendance rate of 94.44%. Please refer to the annual report for details. <p>Annual Work Focus:</p> <ul style="list-style-type: none"> Review the financial reports and regularly exchange, communicate, and explain to the CPAs on the audit or review results of the financial statements and changes in relevant laws and regulations. Assess the effectiveness of the internal control system and formulate annual audit plans. Regularly communicate the report results with the audit officer according to the annual audit plan, and propose improvement suggestions. Review the capital budgets and major investment proposals of each subsidiary. Review transactions involving major assets, derivatives, lending of funds, endorsements and guarantees, and related regulations. Review the appointment, discharge, remuneration, and assessment of the independence of the CPAs. Legal compliance 	<ul style="list-style-type: none"> Composed of three independent directors Established in 2022 A total of three meetings were held in 2023, with an attendance rate of 88.89%. Please refer to the annual report for details. <p>Annual Work Focus:</p> <ul style="list-style-type: none"> Establish and regularly review the performance evaluation standards for the Company's directors and managers. Assist the Board of Directors in implementing and evaluating the Company's overall remuneration and welfare policies and the remuneration of directors and managers. <p>Remuneration to Directors and Managers:</p> <ul style="list-style-type: none"> Remuneration to directors, general managers, and deputy general managers is paid in accordance with the "Procedures for the Remuneration of Directors and Managers" approved by the Remuneration Committee and the Board of Directors. Please refer to the annual report for details.

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

In order to implement corporate governance and improve the functions of the Company's Board of Directors, we have established performance goals to enhance the efficiency of the Board of Directors. A self-performance evaluation of the Board of Directors and functional committees is conducted once a year according to the "Board Performance Evaluation Procedures". In 2023, the self-evaluation of the overall Board of Directors and functional committees (Audit Committee and Remuneration Committee) and the self-evaluation of individual Board members were all "Excellent". The evaluation results were reported to the Board of Directors in March 2024. The implementation of the performance evaluation, the evaluation cycle, evaluation period, evaluation scope, evaluation method and evaluation content are detailed in the Company's annual report.

2023 Self-Evaluation Results of the Board of Directors and Functional Committees	
Evaluation Procedures	<ol style="list-style-type: none"> Evaluation scope: 2023/1/1 to 2023/12/31 Evaluation unit: Board of Directors, functional committees Implementation method: Questionnaires
Evaluation results (out of 5)	Board: 4.87 Functional committees: 4.96 Both are operating well as a whole and meet the requirements of corporate governance.

Self-evaluation is conducted once a year, and external professional institutions are expected to be engaged to evaluate the performance of the Board of Directors once every three years, which is expected to be implemented in 2025 (three years after listing).

Internal Audit

We have established an internal control system in accordance with the "Regulations Governing Establishment of Internal

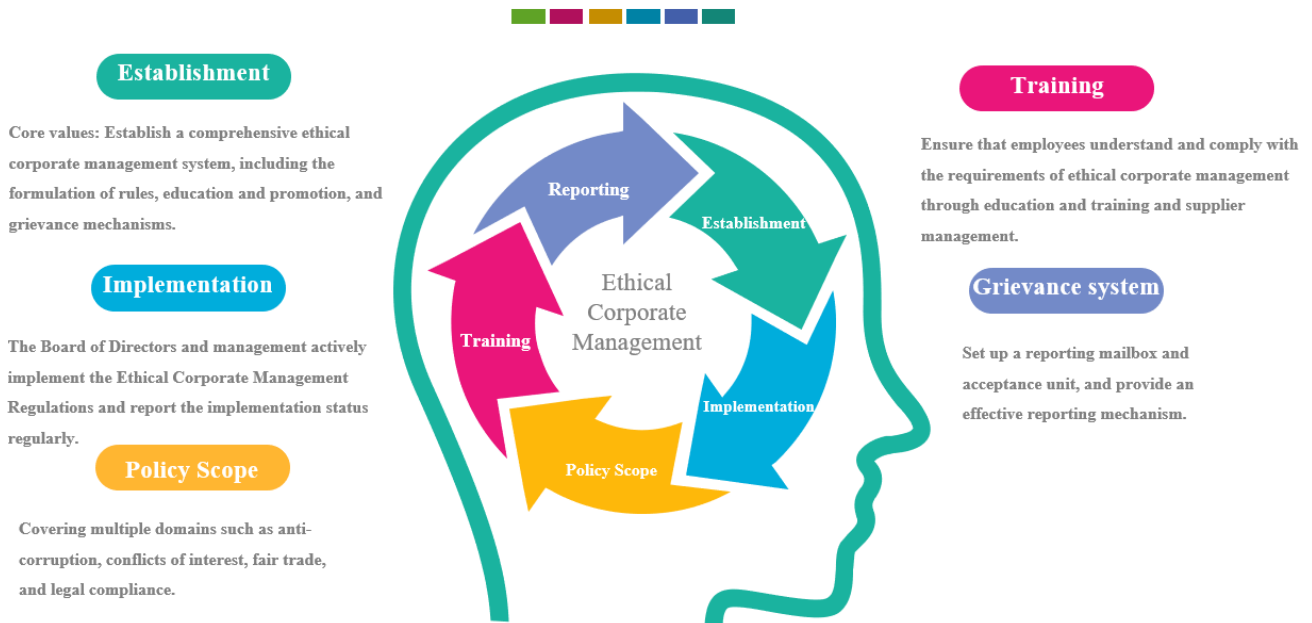
Control Systems by Public Companies " and applicable laws and regulations. An Audit Office has been established under the Board of Directors as an independent unit to assist the Board of Directors and managers in inspecting and reviewing the internal control system for deficiencies. The results will be used as a basis to review and revise the internal control system to reasonably ensure the achievement of the three objectives of operational effectiveness and efficiency, reliability, timeliness, and transparency of reporting, and compliance with relevant regulations and laws and regulations. At PlayNitride, we strive to promote the sound operation of the Company.

Internal auditors formulate an annual audit plan based on the risk assessment results and submit it to the Board of Directors for approval before implementation. Routine and ad hoc audits are conducted on a regular or unscheduled basis. The Company's internal auditors carry out audits according to the annual audit plan. After the audit results are signed by the Chairman, they are sent to the independent directors on a monthly basis, and the audit summary report is submitted to the Audit Committee on a quarterly basis. The Audit Committee also regularly reviews the Company's performance, the internal control system, internal auditors and their work to ensure the effectiveness of the internal control system. Internal auditors shall immediately prepare a report and notify the Board of Directors and Audit Committee if they find any major violation or the possibility of major damage to the Company. In 2023, 48 annual audit items were formulated and executed, and there were no relevant major deficiencies.

4-2 Ethical Corporate Management

Ethical Corporate Management

Ethical Corporate Management of PlayNitride



With integrity, innovation, and the pursuit of excellence as the core values, we uphold the spirit of ethical corporate management and gradually implement the formulation of rules, education and publicity, and a complaint mechanism.

With reference to “Ethical Corporate Management Best Practice Principles for TWSE/TPEX Listed Companies” and the “Template for the Adoption of Codes of Ethical Conduct for TWSE/TPEX Listed Companies”, we have formulated the "Operating Procedures for Ethical Management, and Code of Conduct", "Ethical Corporate Management Best Practice Principle", and "Ethical Corporate Management Best Practice Principles" approved and implemented by the Board of Directors. The Board of Directors and management are fully aware of and actively implement the relevant regulations, and implement them in internal management and external business activities. The implementation status is regularly reported to the Board of Directors. The implementation results in 2023 were reported to the Board of Directors in March 2024.

Ethical corporate management covers anti-corruption and anti-bribery, handling conflicts of interest, fair trade, prohibition of insider trading, respect for intellectual property, legal compliance, responsible management, violation complaint system, and whistleblower privacy protection mechanism. Internally, through education and training and the promotion of related policies, we implement the ethical corporate management policy and prevent unethical conduct. The Company’s business partners are reviewed according to the Company's “Supplier Management Procedures” and the relevant business integrity clauses are clearly specified in the contract.

In order to ensure that all employees understand the requirements of ethical corporate management, the ethical corporate management courses were provided through the online training platform in 2023 and announced and continuously promoted through internal channels. For supplier management, the Responsible Business Alliance Code of Conduct (Responsible Business Alliance, RBA) was used to formulate the "Supplier Code of Conduct", which is announced on the Company's website to ensure that suppliers understand PlayNitride's requirements for the code of ethical conduct.

Object	Implementation Method	Number of People Trained	No. of Hours	Completion Rate
All directors	Lectures by external instructors	9	3	100%
New recruits	New employee training course, signing confirmation of completion of training	137	2	100%
All employees	Internal training courses, online training platform	424	1	96.14% ^{Note}
	Pinned announcement on the company system and publicity on the physical bulletin board			
<small>Note: Training completion rate: Number of trainees/number of employees in the category at the end of the year</small> <small>Note: Some employees did not complete the training within the timeframe and the implementation approach has been reviewed. The target is to achieve 100% completion rate in 2024</small>				

We have set up a self-reporting channel and a grievance channel for dedicated personnel to accept and investigate complaints. The personal data and reporting data of whistleblowers will be properly protected. After receiving the relevant complaint letter, the responsible personnel will hold an internal investigation meeting to confirm the appropriate investigation process prior to launching a detailed investigation. In 2023, the Company received 0 complaints from the grievance channel, and received no reports of violation of unethical conduct.

Self-reporting channel	When an employee encounters a benefit avoidance situation or receives a gift that exceeds the limit of internal regulations and the gift cannot be returned, the employee may voluntarily report the matter through the electronic form to their immediate supervisor or the employee website.
Grievance Channel	For unethical conducts such as violating the law or the regulations, in accordance with the relevant management regulations, a whistleblower's complaint mailbox is provided: Whistleblower@PlayNitride.com

Legal compliance

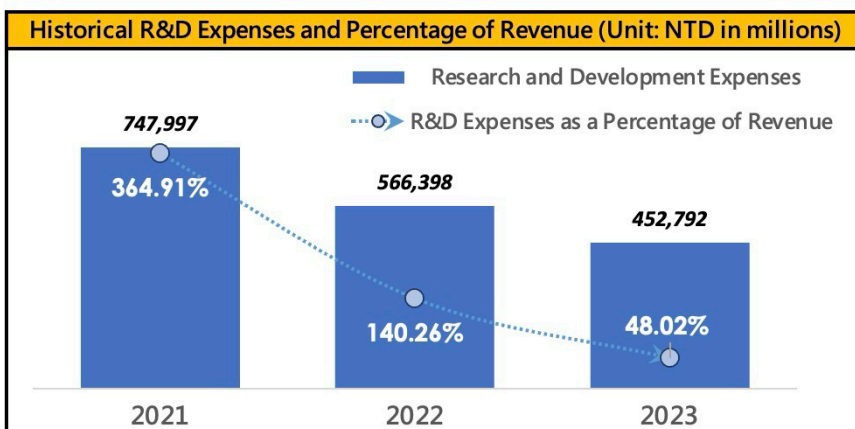
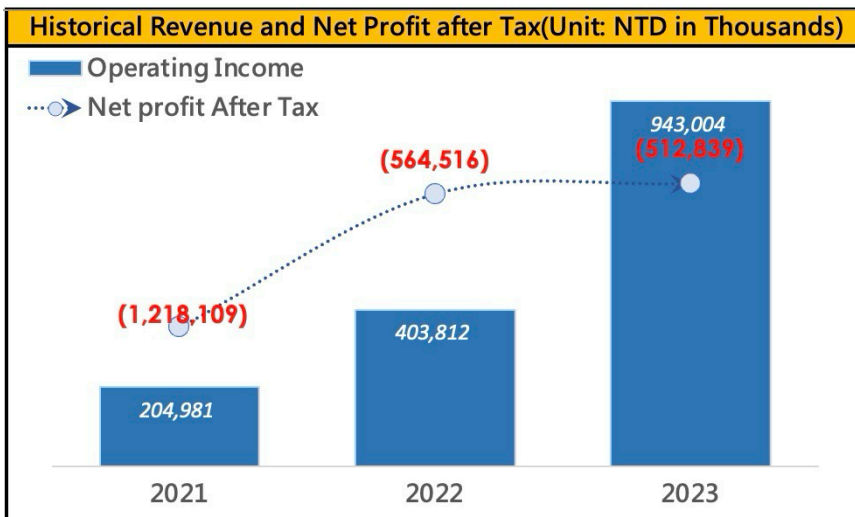
The Company's operations comply with laws and regulations with respect to corporate governance, the economy, the environment, and society. Correspondence to corresponding departments from competent authorities must be reviewed by legal personnel to ensure compliance with the requirements of relevant domestic and foreign laws and regulations. The Legal Office regularly collects the latest updates for legal compliance matters, provided to the relevant department heads to confirm the compliance of the operating procedures to ensure that all employees uphold business ethics and exert their professionalism. After reviewing the relevant operating results, there was no government sanction in 2023.

4-3 Operational Performance

As PlayNitride is still in the stage of new R&D and needs to invest a large amount of capital and R&D expenditures, it is still in the loss-making stage; however, the loss is gradually narrowing. The operating revenue in 2023 was NTD 943,004 thousand, an increase of 133.53% compared to 2022. This was mainly due to the increasing demand for MicroLED displays and the diversification of applications, which increased mass production demand and revenue, as well as the increase in production volume and engineering revenue derived from the business model of providing turn-key solutions.

In 2023, the Company invested NTD 452,792 thousand in R&D, accounting for 48.02% of the revenue.

In 2024, we will continue to expand operating revenue, develop new customers, and increase the types of business items. In terms of production capacity expansion, in addition to moderate self-expansion, we also help other manufacturers build production capacity through the business model of providing turn-key solutions and through the sale of self-developed mass transfer equipment and mass repair equipment. By doing so, we expect to accelerate the vigorous development of the overall MicroLED industry and create another outlet for our sustainability. In terms of new product deployment, the Company aims to continue to expand its customers by producing products such as transparent displays, high-resolution automotive displays, wearable displays, and high-resolution full-color micro displays that can be applied to the Metaverse.



Unit: Thousands NTD

Item	2021	2022	2023
Operating Income	204,981	403,812	943,004
Operating Costs	389,047	441,269	843,212
Operating Profit	(184,066)	(37,457)	99,792
Selling Expense	33,699	30,769	44,630
Management Expense	248,442	136,127	164,618
R&D Expense	747,997	566,398	452,792
Operating Expense	1,030,138	733,294	662,040
Net Operating Loss	(1,214,204)	(770,751)	(562,248)
Non-operating Income (Expense)	(3,905)	206,235	49,409
Net Profit for Current Period	(1,218,109)	(564,516)	(512,839)
Other Comprehensive Income or Loss after Tax	(18,830)	(20,064)	2,153
Comprehensive Income or Loss	(1,236,939)	(584,580)	(510,686)
Earnings per Share	(14.14)	(5.47)	(4.78)
GRI-Related Disclosure Information			
Employee salary and benefits	780,818	404,212	447,580
Interest and dividends expense	3,492	878	659
Investment subsidies, R&D subsidies	5,056	10,500	615
R&D expenses as a percentage of revenue	364.91%	140.26%	48.02%

4-4 Tax Management

Tax Policy

The Finance and Accounting Division serves as the tax management unit of the Company, which is responsible for related tax operations and tax risk management, and regularly reports tax management practices and results to management. In response to the international trend of tax governance, we comply with the tax laws and regulations of the places where we have our operations. We have formulated the following tax policies to implement tax management and ensure the effective operation of the tax management mechanism.

Tax Policy

- 1. Comply with tax laws and regulations and their legislative spirit, declare and settle tax liabilities in accordance with the law, and fulfill the social responsibility of taxpayers.
- 2. For daily business activities or major business decisions, the relevant tax risks and tax impacts should be considered.
- 3. Communicate honestly with the tax authorities and establish good communication channels to ensure efficient cooperation between the two parties.
- 4. The disclosure of tax information in the financial report shall be handled in accordance with the relevant regulations and standards.

Tax Risk Control Mechanism

- 1. Actively communicate with the tax authorities.
- 2. When necessary, outsource or consult external professional consultants to ensure correct compliance with tax regulations and reporting obligations.
- 3. Continue to cultivate tax talent and strengthen tax professional capabilities.
- 4. Report the tax management practices and results to management so that the management team can fully grasp the implementation status of the Company's tax policies.

Tax Payment status

The Company is incorporated in the Cayman Islands, and local companies are not subject to profit-seeking enterprise income tax. In addition, branches and subsidiaries in Taiwan are subject to 20% corporate income tax in 2023 and 2022. However, as all pre-tax earnings are net losses in 2023, they are not subject to tax; hence there is no tax payment.

4-5 Information Security

Information Security Policy

We have an [information security policy](#) in place to continuously improve information security and service quality. To ensure that key information systems can continue to operate in the face of major crises or disasters, we continue to improve the information architecture and introduce a mobile operation management platform to facilitate real-time monitoring. We also implement the information security system and strengthen the information security protection framework. Through information system development, integration, and application, an effective management system is used to ensure the correct input of materials for financial accounting and production processes and the preservation of transaction history. Furthermore, regular disaster recovery drills are conducted for major systems every year to improve the response capabilities of information personnel.

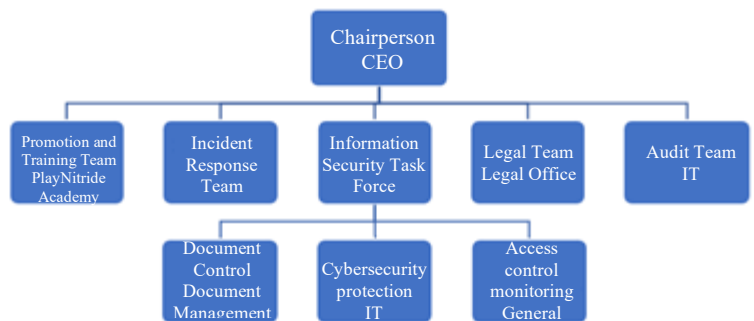
Information Security Policy	
Legal Compliance	Establish a compliance system that complies with international information security and overseas laws and regulations.
Technology Application	Build an information monitoring system and an information protection system to implement information security management measures.
Information Security Governance	Construct a multi-layered information security protection framework and improve management through automation.

In response to the risks that may be caused by the weaknesses or threats of information assets, we refer to the ISO 27001 management system framework to gradually implement the documentation requirements. At the same time, we have adopted a systematic approach to establishing risk evaluation standards and take countermeasures or control measures based on the evaluation results to reduce the risk of information assets. Moreover, risk assessment procedures have been formulated to ensure the effective implementation of information security management.

In addition to internal regular reviews, a third party conducts information security ratings and vulnerability scans annually. This party evaluates network assets, network applications, and human risks to correct information risks in a timely manner. Information security education and training are provided to all employees to reinforce their information security awareness and reduce human risks.

Information Security Management Organization

We have established the Information Security Committee, which holds a management meeting at least once a year, and special meetings may be convened when necessary. A meeting was held in December 2023 to review the annual information security implementation results and the plan for the next year.



Responsibilities of Information Security Committee Members

Chairperson

- At present, the CEO serves as the chairperson, responsible for making decisions on major issues related to information security management, including information security organizational adjustment, major strategic changes in information security management, changes in key information security personnel, and confirmation of acceptable risk levels.

Information Security Standing Committee

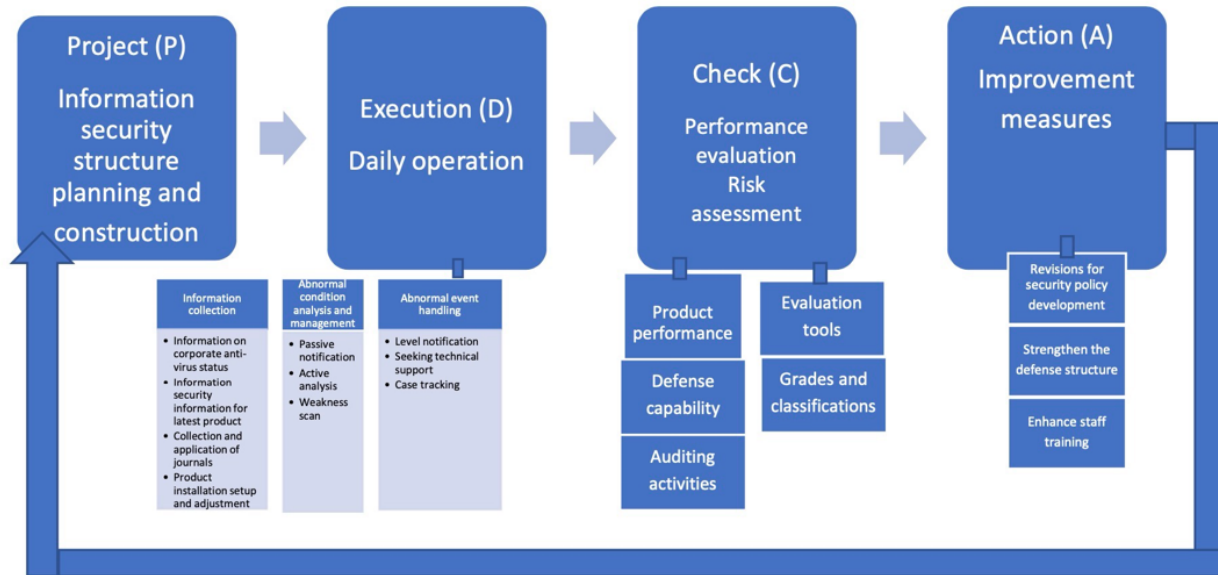
- The members are composed of the executives of the Company's Business Management Committee and the executives of the IT department. They are directly accountable to the Information Security Chairperson, undertake and execute the tasks assigned by the Information Security Chairperson, and command and coordinate in the event of a disaster.

Task Forces

- The standing committee members are responsible for individual information security work according to their professional division of responsibilities, as illustrated in the organizational chart above.

Specific Management Plans

In addition to regular internal inspections, the Company also performs information security health inspections conducted by third parties from time to time to adjust its information security management solutions in line with the times. Information security education and training is provided to all employees every six months to implement the concept of information security prevention for the Company's employees. There is an information security incident reporting process in place, and there were no information security attacks that impacted the Company's operations in 2023. It is expected that in 2024, we will continue to implement and strengthen the information security awareness of all employees.



Information Security Management Items	Implementation Measures
Device management	<ul style="list-style-type: none"> Implement access control for the Company's main entrances, production lines, server rooms, and warehouses. Prevent unauthorized equipment from entering the FAB. Control access devices such as computer lenses, USB ports, and network ports.
System management	<ul style="list-style-type: none"> Different network segments are planned according to the floor and purpose, and the data exchange of each network segment is strictly controlled. Strictly control the permissions of each system, and apply for permissions through electronic forms.
Network protection	<ul style="list-style-type: none"> Install anti-virus software and perform scheduled scans every day. Cross-network segment virus scanning and intrusion detection through firewalls. Conduct system vulnerability scanning through a third party every year.
Recovery ability	<ul style="list-style-type: none"> Establish an environmental monitoring system to detect disasters in a timely manner and prevent disasters from expanding. Establish an off-site system backup mechanism. Expand the scope of system backup to include all systems in the backup. Strengthen the backup mechanism of major systems, and shorten the data Recovery Point Objective (RPO) to two hours. Regularly implement major system disaster recovery drills every year.
Information security awareness	<ul style="list-style-type: none"> A social engineering drill is conducted once every six months. Safety awareness training and unscheduled promotion for all employees once every six months.

Information security education and training

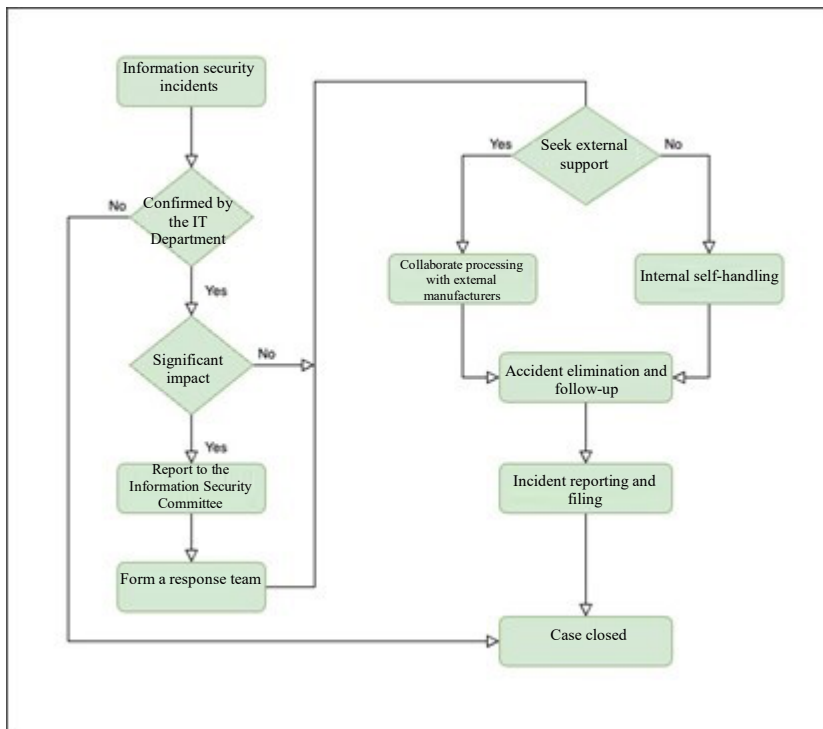
Information security education and training			
Category	Training Content	Number of People Trained	Completion Rate
Information security specialist	Information security professional training or information security competency training	1	100%
Information personnel other than dedicated personnel	Professional information security course training	2	100%
New recruits	Information security regulations	137	100%
All indirect personnel	Reinforce information security awareness	266 ^{Note}	90.78%
	Unscheduled information security announcement	Publicize recent social engineering practices through information security announcements	

Note: Training completion rate: Number of trainees/number of employees in the category at the end of the year
 Note: In 2023, due to the physical course training method, training was provide to all indirect employees. In 2024, the online learning platform will be introduced to expand the training target to all employees to ensure that all employees have the awareness of information security.

To build and enhance the information security awareness of all employees, information security training courses and social engineering drills are arranged regularly.

In the second half of 2023, we began to conduct email social engineering drills. A total of 240 employees participated in the drills. Among them, 12 employees who failed the training completed 100% of the social engineering training within two weeks. By doing this, we build employees' information security awareness and prevent losses caused by phishing emails.

Information Security Incident Reporting Process



5. Environmental Sustainability

5-1 Climate Strategy

Net Zero Blueprint/PlayNitride’s Carbon Reduction Plans

PlayNitride plans to disclose the evaluation results of the net zero pathway in 2025.

Climate Governance Mechanism and Framework

The Board of Directors is the highest decision-making unit for climate change-related issues of PlayNitride, guiding and supervising the response to climate-related risks and opportunities. To strengthen the management of sustainability and climate change risks, we established the Sustainability Committee in 2022 to be responsible for issues related to sustainability and climate change risk management. The Sustainability Committee shall have at least 4 meetings a year and report to the Board of Directors.

In addition, we have established the Climate Governance Taskforce, with the Chief Strategy and Sustainability Officer as the convener and each department executive as the team leader, responsible for the identification of climate change risks and opportunities and the promotion of response plans. The Sustainability Committee conducts program progress management, and reports on the implementation results of climate management at the quarterly Board meeting. The subsequent climate change risk management process will be integrated with the existing risk management process and run on a regular basis.

Governance Unit	The Board of Directors is the highest responsible unit for decision-making and guidance related to climate change risks.
Management	The Climate Governance Taskforce under the Sustainability Committee is responsible for implementing relevant processes and reports to the Committee on a regular basis.

Climate Risk and Opportunity Identification and Assessment

2023 was the first year for PlayNitride to systematically promote the identification and assessment of climate risks and opportunities to respond to the possible impacts of policies and regulations, the physical environment, and the supply chain under climate change. Climate risk-related assessments will be incorporated into the existing risk management system.

<p style="text-align: center;"><u>Risk and Opportunity Identification</u></p> <p>Screen the risk and opportunity factors that may be relevant to innovation with reference to TCFD recommendations, industry-related information, and internal and external discussions.</p> <p>Set climate risk and opportunity assessment scenarios with reference to domestic policy directions, net zero commitments, and international assessment reports: transition risks mainly consider the 2050 net zero scenario, and physical risks mainly consider the SSP-8.5 scenario.</p>	<p style="text-align: center;"><u>Risk and Opportunity Assessment</u></p> <p>Relevant departments conduct risk and opportunity assessments to understand the impact of risk factors on risks in different time intervals, their impact on innovation, and the degree of possible impact. The assessment results are discussed and confirmed internally and externally to identify relatively significant risks.</p>
<p style="text-align: center;"><u>Supervision and Reporting</u></p> <p>Regular meetings are held for the implementation of the response plan, and the climate governance team executes the plan. The Sustainability Committee manages the plan's progress four times a year, and reports on the effectiveness of climate management-related implementation during board meetings.</p>	<p style="text-align: center;"><u>Response Planning</u></p> <p>For the significant potential risks and derivative opportunities identified, the Company's existing operation and development strategies are considered, and the relevant departments formulate responsive plans, and regularly report the relevant progress to the Sustainability Committee for subsequent review and implementation.</p>

Climate-related Risks and Opportunities

In 2023, we conducted climate risk awareness training. In addition, nine relevant departments were invited to perform climate risk and opportunity assessments, screening 18 risk factors and 15 possible opportunities that may bring about impacts in the short-, medium-, and long-term. After internal and external discussions, confirmed by the Climate Risk Working Group, four major risks and four types of possible opportunities were identified.

Risk Type	Risk Factor	Time Interval	Potential Financial Impact	Planned Response Actions
Short-term Physical Risk	Flood Impact level: Direct operations, upstream suppliers	Short-term	<ul style="list-style-type: none"> ✧ Increase in indirect costs ✧ Decrease in revenue due to reduced production capacity 	<ol style="list-style-type: none"> 1. Establish emergency response procedures 2. Confirm that the emergency response equipment and contact list are adequate and effective 3. Regularly inspect the dredging of drainage facilities 4. Conduct a flood prevention drill every year in line with the plant's operations. 5. For related performance and information, please refer to Chapter 6-4 Emergency Response Measures and Management
Short-term Physical Risk	Drought Impact level: Direct operations	Medium-term	<ul style="list-style-type: none"> ✧ Decrease in revenue due to reduced production capacity 	<ol style="list-style-type: none"> 1. Establish emergency response procedures 2. Plan measures to systematically reduce water consumption, such as air conditioning water control. 3. Regularly inspect and repair water-consuming equipment to ensure normal operation and avoid unnecessary wear and tear caused by water leakage. 4. Conduct water conservation management and promotion to enable employees to understand the current status and severity of water shortages. 5. Negotiate with external water supply units to supplement water demand. 6. At present, the production water process has been optimized to reduce water demand. For related performance and information, please refer to Chapter 5-4, Water Resource Management.
Market	Rising Costs of Raw Materials Impact level: Direct operations	Short-term	<ul style="list-style-type: none"> ✧ Increase in direct costs ✧ Increase in indirect costs 	<ol style="list-style-type: none"> 1. Sort out the locations of important raw material suppliers to facilitate subsequent risk assessment. 2. For related measures and information on current supplier management, please refer to Chapter 3-5, Supply Chain Management.
Short-term Physical Risk	Wind disaster (Decrease in typhoons, increase in intensity) Impact level: Direct operations	Short-term	<ul style="list-style-type: none"> ✧ Increase in indirect costs 	<ol style="list-style-type: none"> 1. Establish emergency response procedures 2. Formulate a typhoon preparation plan 3. Regularly check whether the emergency response equipment and contact list are sufficient and effective 4. Assign relevant departments to the designated area for pre-typhoon inspection to ensure that doors and windows are closed and drainage facilities are unobstructed. 5. Conduct a flood prevention drill every year in line with the plant's operations. 6. For related performance and information, please refer to Chapter 6-4 Emergency Response Measures and Management

Opportunity Type	Opportunity Factor	Potential Financial Impact	Transformation Opportunity Approach
Market	Make good use of public sector incentives	<ul style="list-style-type: none"> Reduce indirect costs 	Short-term: Continue to evaluate and plan the promotion period for old equipment replacement in line with the incentive policies of the competent authority.
Energy Source	Use of clean energy	<ul style="list-style-type: none"> Reduce indirect costs 	Medium- and long-term: Continue to evaluate and develop the benefits of green power purchase and use.
Resilience	Strengthen the internal management mechanism	<ul style="list-style-type: none"> Reduce indirect costs 	Short-term: Continue to evaluate and plan the relevant policies and systems, including the emerging risk management framework, energy management system, and business continuity management.
Resource Efficiency	Improved process efficiency (Water, transportation, production and distribution)	<ul style="list-style-type: none"> Reduce direct costs Reduce indirect costs Increase in revenue from increased production capacity 	<p>Short-term: Continue to evaluate the feasibility and implementation schedule of process optimization.</p> <p>Medium-term: Continue to pay attention to the possibility of cooperation between transportation methods and suppliers, and incorporate them into decision-making reference.</p> <p>Medium- and long-term: Continue to evaluate measures toward the addition of reclaimed water equipment, new equipment, and more automated processes.</p>

Indicators and Targets

MicroLED is recognized as the ultimate next-generation display technology in the industry as its related technology and specifications are superior to other traditional display technologies. The Company’s overall development focus can be said to be next-generation low-carbon solutions. We have considered climate change-related factors in the decision-making and goal setting of our operations. In the future, PlayNitride will continue to refer to the results of the identification of climate risks and opportunities to promote low-carbon development.

Type	Indicator	2023 Performance	Related Chapters
Governance	Capital investment	Product R&D: In 2023, the Company invested NTD 452,792 thousand in R&D.	4-3 Operational Performance
Strategy	Sustainable product benefits Status of process decarbonization	Low power consumption products: Reduce chip size by 70% compared to the previous year <ul style="list-style-type: none"> ● The power consumption of the conversion application in the display can be reduced by about 20% compared to the previous year. ● The number of chips on each wafer is doubled, and the energy consumption per chip in the process can also be reduced by 50% under the same process. Plant energy conservation: Energy consumption intensity (total energy consumption GJ/million revenue) reduced by 56% compared to the previous year	3. Sustainable Product Innovation 5-2 Energy Management
GHG Emissions	GHG emission intensity	Emission intensity (tonnes CO ₂ e/million revenue) was 6.38, a decrease of 6.80 (51.57%) from 2022.	5-2 GHG Emission Management

5-2 GHG Emission Management

GHG Management

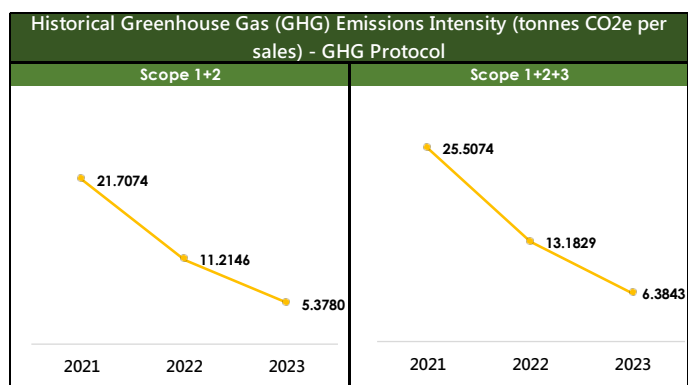
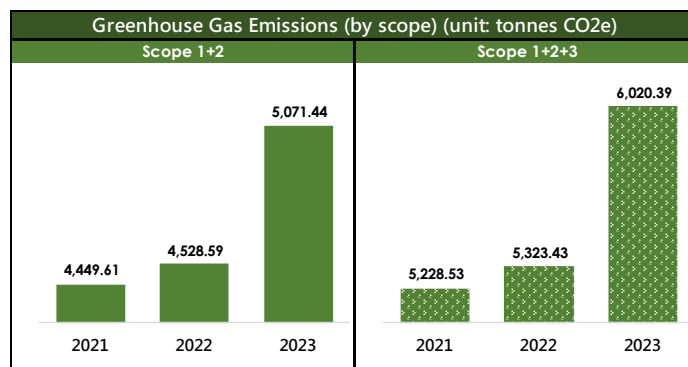
PlayNitride obtained the ISO14001:2015 environmental management system certification for the first time in 2020, and passed the certification renewal audit in 2023 to maintain the effectiveness of the system. Since 2021, we have followed the ISO14064-1:2018 organizational GHG quantification and verification standard and established a GHG inventory mechanism. From 2022, we have passed the fair third-party verification process every year to ensure the accuracy and reliability of GHG emission inventory. We completed a GHG inventory in 2023 which was verified by an external institution in April 2024. As PlayNitride is in the growth stage, its business and output will expand year by year. At present, it has been evaluated that 2021 will be the base year to set the reduction intensity target.

In 2023, the total GHG emissions (Scopes 1, 2, 3) were 6,020.39 tonnes CO₂e, an increase of 696.96 tonnes CO₂e (13.09%) over 2022. The emission intensity (tonnes CO₂e)/million revenue) was 6.38, down 6.80 (51.57%) from 2022. The GHG emissions are mainly indirect energy emissions from the use of electricity, accounting for 62.80% of the total emissions.

In 2023, the direct GHG emissions (Scope 1) were 1,290.93 tonnes CO₂e, an increase of 318.65 tonnes CO₂e (32.77% increase) compared to 2022. The main difference is that the process emissions increased by 225.93 tonnes of CO₂e compared to 2022, and the stationary combustion increased by 110.04 tonnes of CO₂e due to the increase in production capacity, leading to an increase in the consumption of gases used in the process. This, in turn, generated more waste gas, resulting in a corresponding increase in the consumption of natural gas by the volatile organic waste gas treatment equipment. In 2023, the relevant processes were optimized, and the reduction of organic solvents at the source was evaluated to reduce consumption and achieve the emission reduction target.

In 2023, due to the continuous expansion of mass production demand, the operating revenue grew by 133.53%. Therefore, the indirect GHG emissions from energy input (Scope 2) was 3,780.51 tonnes CO₂e, an increase of 224.2 tonnes CO₂e compared to 2022. (increase by 6.30%), emission intensity (tonnes CO₂e/million revenue) was 4.01, down 4.8 (down 54.48%) from 2022. This was mainly due to an increase in the efficiency of electricity usage, demonstrating the effectiveness of carbon reduction.

In order to grasp the other indirect GHG (Scope 3) emissions and identify the bulk emission sources to further incorporate into the carbon reduction strategy planning, after identifying significance, "indirect GHG emissions from the use of products" was included in the reporting boundary. Although the "Indirect GHG Emissions from transportation" were assessed to be insignificant, data will be collected gradually, and the calculation results will be presented. As other categories of indirect GHGs have been identified as non-significant, there is currently no information to quantify their emissions.



GHG emissions (Unit: tonnes CO ₂ e)				
GHG Category	ISO 14064 Classification	2022	2023	Source of Emissions
Scope 1 Direct GHG emissions	Category 1	972.28	1,290.93	Mainly emissions from manufacturing processes, and emissions are mainly PFCs. Other non-process emissions include emergency power generators, natural gas combustion equipment, fuels such as gasoline and diesel, and fugitive emissions from septic tanks and firefighting equipment.
Scope 2 Indirect GHG emissions from energy input	Category 2	3,556.31	3,780.51	Indirect emissions from energy use
Scope 3 Other indirect emissions	Category 3 Indirect GHG emissions from transportation	-	8.51	Mainly the purchase of raw materials and office supplies and the transportation of employees' private cars on business trips. Note: Since the Company's official vehicles are all EVs, the gasoline emissions from employees' private cars were classified as Category 1 (21.22 tonnes CO ₂ e) in 2022 and reclassified to Category 3 in 2023.
	Category 4 Indirect GHG emissions from the use of products	794.84	940.44	Mainly related to GHG emissions from product use and waste removal.
Total		<u>5,323.43</u>	<u>6,020.39</u>	

Note 1: The operational control approach was adopted for the inventory scope. In 2023, the inventory boundary included the Zhunan Plant, Taipei Zhonghe Office, and Tainan Office. The Xindian Office and the Taiyuan Office were not included in the scope of inventory in 2022 as they had ceased leasing.

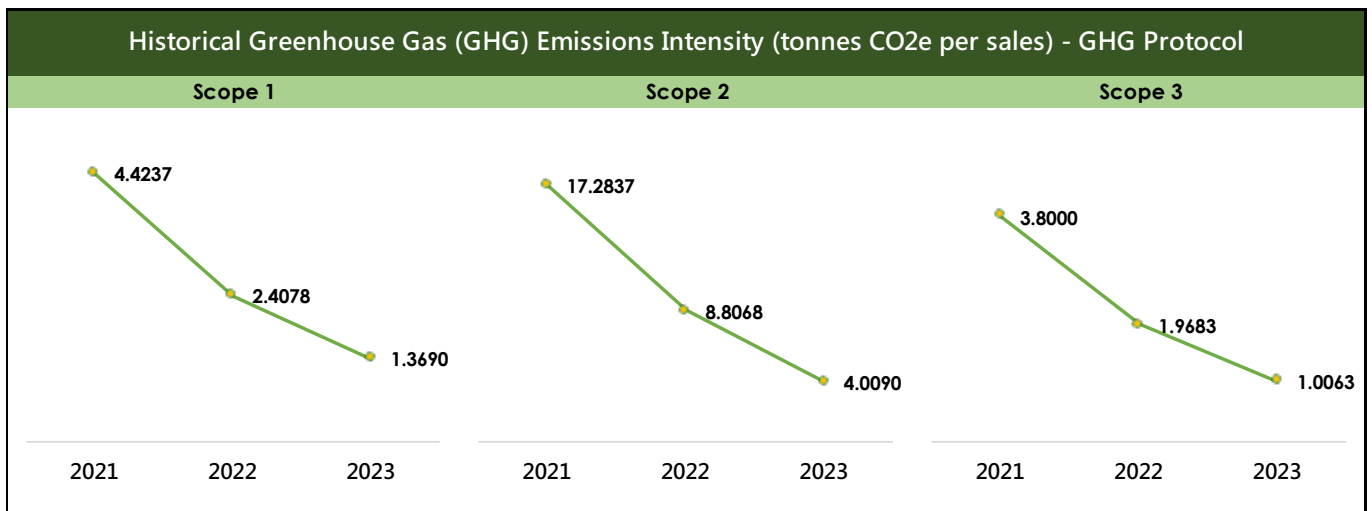
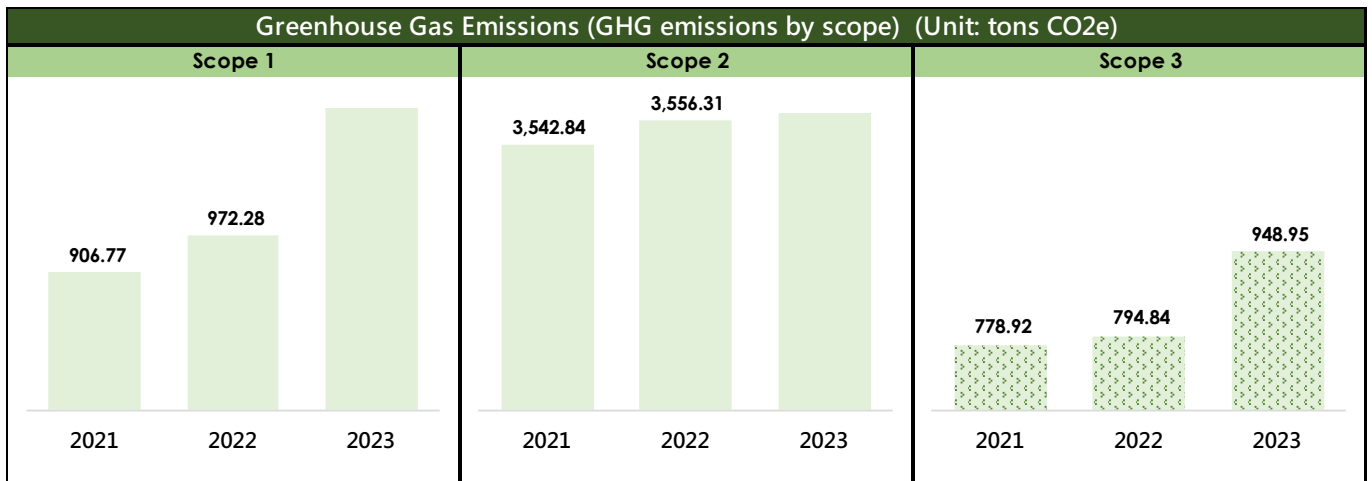
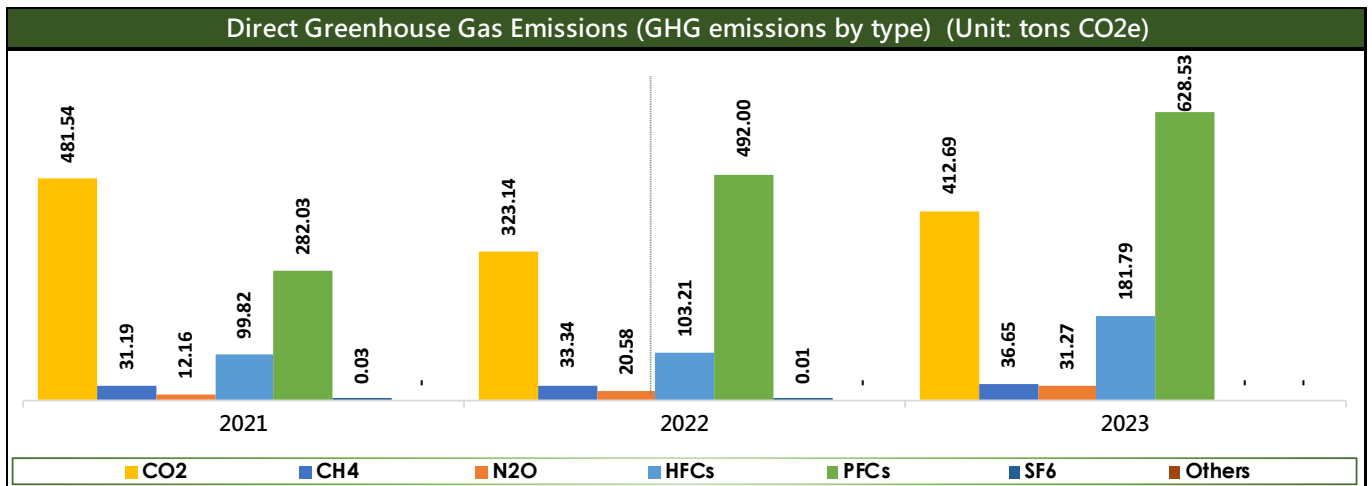
Note 2: The GHG inventory adopts the ISO 14064-1:2018 version

Note 3: The electricity emission factor adopts the electricity emission factor announced by the Bureau of Energy the electricity emission factor for 2022 and 2023 is based on the electricity emission factor of 0.495 tonnes CO₂e/kWh for 2022 announced by the Bureau of Energy on June 21, 2023.

Note 4: The source of the Scope 1 emission factor is based on 6.0.4 of the Greenhouse Gas Emission Factor Management Table of the Ministry of Environment

Note 5: The Global Warming Potential (GWP) of each GHG was based on the 6th Assessment Report (6AR) issued by the IPCC in 2021.

Statistics on GHG Emissions Over the Years



Chinese Version

English Version



查證意見編號：OC-0906-2024007-02-01 發行版次：1

溫室氣體排放量查證意見

英屬開曼群島商鏢創科技股份有限公司台灣分公司
苗粟縣竹南鎮科中路13號

查證結果摘要

財團法人工業技術研究院(量測技術發展中心)對「英屬開曼群島商鏢創科技股份有限公司台灣分公司」所報告之溫室氣體主張進行了獨立查證，本案符合 ISO 14064-1:2018 標準要求，查證結果未違反實質性限制，符合查證協議之合理保證等級。

查證範圍：

- 英屬開曼群島商鏢創科技股份有限公司台灣分公司
總部：苗粟縣竹南鎮科中路13號
台北辦公室：新北市中和區遠東路268號13樓之6
台南辦公室：台南市永康區中正路279巷21弄18號3樓之2
- 盤查期間：2023年1月1日至2023年12月31日

查證數據：

類別 1: 直接溫室氣體排放量:	1,290.93	公噸二氧化碳當量
類別 2: 能源間接溫室氣體排放量:	3,780.51	公噸二氧化碳當量
類別 3: 運輸間接溫室氣體排放量:	8.51	公噸二氧化碳當量
類別 4: 組織使用產品間接溫室氣體排放量:	940.44	公噸二氧化碳當量
總溫室氣體排放量:	6,020	公噸二氧化碳當量

保留限制：無

主導查證員

財團法人工業技術研究院
量測技術發展中心執行長(授權簽署)

最初發行日期：2024年5月6日
版次發行日期：2024年5月6日



頁數 3 之 1 頁

本查證聲明書不可單頁使用，須完整使用始具效力。
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112.11.28版

H06-P-02-02-02



Opinion No. : OE-0906-2024007-02-02 Release version:1

Greenhouse Gas Verification Opinion

PlayNitride Inc.

No.13, Kezhong Rd., Zhunan Township, Miaoli County, Taiwan (R.O.C.)

Summary of verification results

「Industrial Technology Research Institute(Center for Measurement Standards)」has independently verified the GHG claims reported by 「PlayNitride Inc.」. It complies with the requirements of ISO 14064-1:2018. The verification results do not violate the substantive restrictions and meet the reasonable assurance level of the verification agreement.

Verification boundary:

- PlayNitride Inc.
Headquarters : No.13, Kezhong Rd., Zhunan Township, Miaoli County
Taipei Office : 13F-6, No.268, Liancheng Rd., Zhonghe Dist., New Taipei City
Tainan Office : 3F-2, No.18, Aly21, Ln.279, Zhongzheng Rd., Yongkang Dist., Tainan City
- Duration : January 1, 2023 to December 31, 2023

GHG Emissions:

Category 1: Direct GHG emissions and removals	1,290.93	Tonnes CO ₂ e
Category 2: Indirect GHG emissions from imported energy	3,780.51	Tonnes CO ₂ e
Category 3: Indirect GHG emissions from transportation	8.51	Tonnes CO ₂ e
Category 4: Indirect GHG emissions from products used by an organization	940.44	Tonnes CO ₂ e
Total GHG emissions:	6,020	Tonnes CO₂e

Mental reservation: N/A

Lead Verifier

Industrial Technology Research Institute
CMS General Director (Authorized Signature)

First release date : May 6, 2024
Latest release date : May 6, 2024



Page 1 of 3

This verification statement cannot be used on a single page and must be used in its entirety to be effective.
Verification entity: Industrial Technology Research Institute (Center for Measurement Standards)
No.191, Sec. 4, Zhongxing Rd., Jhongli Township, Taichung County 51004, Taiwan (R.O.C.) +886-3-5732071
Ver: 2023.11.28

H06-P-02-02-02

5-3 Energy Management

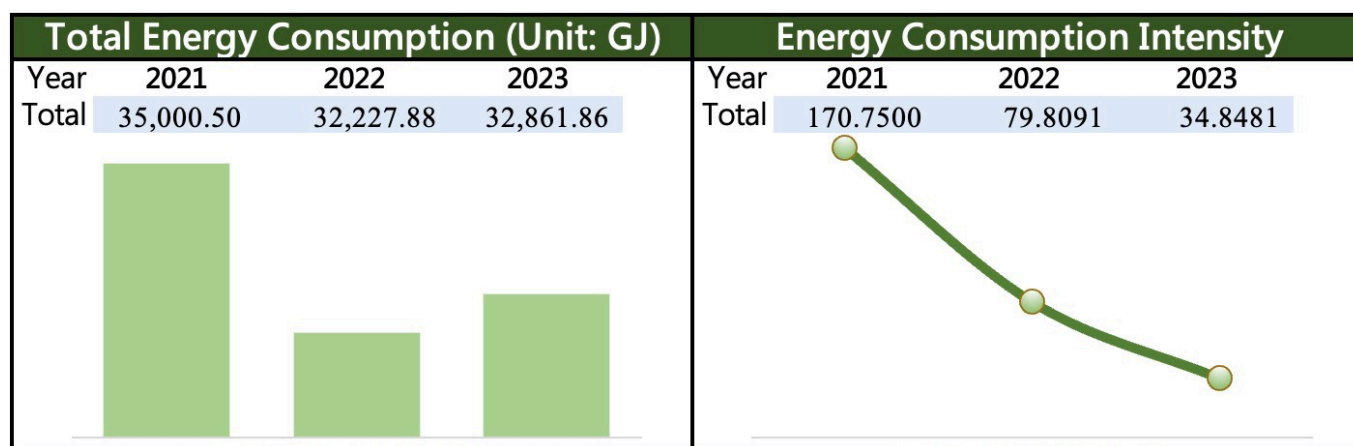
Energy Policy

PlayNitride's energy consumption is dominated by purchased electricity, accounting for 82.19% of all energy consumption, followed by natural gas at 16.57%. Therefore, the energy efficiency improvement and reduction of electricity and natural gas are the priority considerations for the implementation of energy-saving solutions.

The plant in the Zhunan Science Park is leased from Epistar, and the entire building infrastructure is managed and provided by Epistar. PlayNitride's main energy consumption is electricity, which is used for production lines, warehouses, offices, and other spaces. Natural gas is mainly used for VOCs combustion equipment. The rest, such as emergency power generation equipment, is owned by Epistar. In case of a power supply emergency, emergency power will be provided by Epistar to PlayNitride. Currently, renewable energy is not used. In addition, in order to reduce carbon emissions from transportation and reduce air pollution, all of our company vehicles are EVs.

Total Energy Consumption

The total energy consumption in 2023 was 32,861.86 GJ, an increase of 633.98 GJ (an increase of 1.97%) compared to 2022. Under the significant growth in revenue, the energy consumption intensity (total energy consumption GJ/million revenue) in 2023 was 34.85, a decrease of 44.96 (56.33%) from 79.81 in 2022, indicating the achievement of energy conservation.



Total Energy Consumption (unit: GJ)			
Energy Consumption Items	2021	2022	2023
Liquefied natural gas (LNG)	9,441.51	6,070.14	5,503.34
Gasoline	152.45	293.98	349.18
Purchased electricity	25,406.54	25,863.76	27,009.34
Total	<u>35,000.50</u>	<u>32,227.88</u>	<u>32,861.86</u>

Note 1: Unit conversion 1 kWh=860 Kcal, 1 Kcal=4.186798 J, therefore 1 kWh= 3.6×10⁻³ GJ.

Note 2: The source of electricity consumption is the statistics of the electricity meters installed by Epistar.

Note 3: Energy consumption intensity = total energy consumption (GJ) ÷ million revenue

Note 4: All corporate vehicles of PlayNitride are EVs, and the gasoline used comes from the utility subsidy for private cars.

Energy Management

We focus on energy efficiency. For high energy consumption systems such as chillers and compressed dryer air (CDA) in the plant, we have established a consumption monitoring system since 2021 to statistically calculate and provide reasonable and accurate usage data. In 2022, we continued to track and analyze energy consumption and promote energy-saving solutions such as air conditioning temperature control and LED lamp replacement. In 2023, we mainly focused on the energy-saving improvement of volatile organic compound (VOCs) treatment equipment for energy saving improvement; hence cooling the VOCs. The cooling fans for VOCs were replaced from IE1 with IE3 energy-saving motors. The pollution prevention and control equipment runs 24/7 and is only stopped during annual repairs and system maintenance. Therefore, the energy saving effect is significant, and it is estimated that the annual electricity saving is about 2000kWh. In addition, the fans are equipped with automatic oiler, belt replacement and bearing replacement to extend the normal operation time and reduce noise to help save

energy. At present, the lighting in public areas has been replaced with LED lights, and the lights in some office areas are turned off during the lunch break.

It is expected that in 2024, we will continue to promote energy-saving solutions, including replacing VOC desorption fans with energy-saving motors, evaluating the use of LED or solar sensor lights for rooftop VOCs lighting, and replacing other public area lighting with LED lighting.

2023 Power Saving Action		Annual Electricity Saving Benefit (kWh)	Investment Amount
Equipment Improvement	<ul style="list-style-type: none"> VOC cooling fan (IE1 motors replaced with IE3 energy-saving motors) 	2,000	\$300,000
Lighting Management	<ul style="list-style-type: none"> Public area lighting is fully replaced with T8 LED lamps. 	300	\$180,000
	<ul style="list-style-type: none"> Automatically turn off the lights in some office areas during the lunch break 	100	0
Air Conditioning Management	<ul style="list-style-type: none"> The office air conditioning is controlled at an appropriate temperature, and the air conditioner is regularly maintained to keep it highly efficient. 	980	0

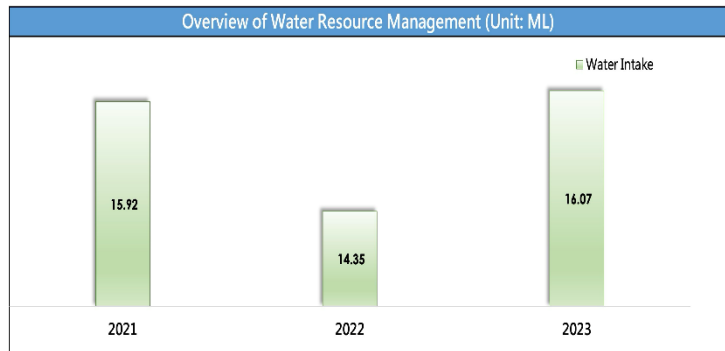
In addition, as the plant is currently leased, there is no space for renewable energy installations. The improvement of power infrastructure must continue to be discussed and planned with Epistar. In the future, we will make timely planning and procurement depending on the development strategy of the operation. We will use renewable energy or build renewable energy power generation devices, and continue to monitor and prioritize the improvement of energy efficiency of systems (chilled water, CDA) with high energy consumption.

5-4 Water Resource Management

Water Resource Management

Our main production site is located in the Zhunan Science Park. According to the WRI water stress assessment map, it is not considered a high or high-risk area. The plant is leased from Epistar, and the entire building infrastructure (such as electricity and water resources) is managed and supplied by Epistar. In recent years, the drought period in Taiwan has been shortened. In the future, we will also transform the production line equipment and adjust the process parameters to improve the water efficiency of the process and save water resources.

The source of water intake is tap water, and the water resources used are mainly divided into two categories: process water and domestic water, with a ratio of about 8:2. The process water is mainly pure water. The pure water system must be used to turn tap water into pure water to clean the residual chemicals on the wafer surface. In 2023, through process improvement, pure water was used instead of organic solvent (acetone) for cleaning, which effectively reduced the amount of acetone per wafer by 60%. Although the water consumption ^{Note 1} of each COC wafer increased from 1.40 tons in 2022 to 1.42 tons (an increase of 1.58 %), but still has significant advantages in terms of overall environmental benefits. In terms of total water withdrawal, due to the increase in production capacity and the number of machines this year, the total water withdrawal in 2023 was 16.07 million liters, an increase of 1.72 million liters (11.99%) compared to 2022. However, under the continuous implementation of the water-saving measures in the previous year, the water intensity ^{Note 2} was 1.73 tons per wafer, which is 0.03 tons (1.70%) lower than last year's 1.76 tons.



Note: The total water withdrawal includes the Zhunan Headquarters and Tainan Office, excluding the water bills of Taipei Office as water bills are included in the rent.

Note 1: COC water consumption per piece = process water consumption in the current year (tons) ÷ COC production volume in the current year (piece)
 Note 2: Water consumption intensity = total water intake for the current year (tons) ÷ COC production for the current year (piece)

Process water consumption reduction measures

Optimization of the Wafer Cleaning Process

Improvement Approach	The original wafer cleaning process adopted the batch tank immersion method, which requires the use of large amount of pure water and repeated replacement to achieve the product cleaning effect. After the introduction of the new process, it has been verified that water has been saved, with better cleaning results achieved. In late 2022, this process was introduced to mass production. In 2023, this was extended to other mass products. Currently, all mass products have been converted to water-saving processes.
Effectiveness	After optimization, statistics on the overall water consumption in 2023 show that the water consumption per wafer process can be reduced by 29.3% of the original water consumption.

Wastewater Treatment Improvement Measures

The wastewater treatment and recycling system in the plant is operated and managed by Epistar to ensure that the relevant wastewater discharge meets the standards. We are committed to the improvement of wastewater management at source, and have added an early warning system for abnormal conductivity in the wastewater discharge pipeline. When the conductivity of the wastewater discharge is higher than the set value, the monitoring system issues an alarm to notify the personnel immediately.

5-5 Waste Management

Waste Management

We focus on reducing the amount of raw materials through process improvement and promote waste resource recycling. We implement waste management in accordance with the requirements of Waste Disposal Act. We have obtained ISO14001:2015 certification since 2020, and continued to manage waste according to the system. In addition to submission of waste disposal plans to the competent authority for approval, the production, storage, disposal, and quantity of waste processed are reported online in accordance with waste disposal and EPA regulations.

Total Amount of Waste

The total weight of waste generated in 2023 was 123.93 tonnes, including 94.18 tonnes of hazardous waste and 29.75 tonnes of non-hazardous waste.

Among the 94.18 tonnes of hazardous waste, 4.44 tonnes (4.71%) were waste that was recycled and reused, such as empty barrels and bottles. With respect to the rest of the waste such as general waste liquid, substrate scraps, and other waste directly disposed of, we entrust qualified contractors approved by the Ministry of Environment for removal and treatment. All processes are in line with the requirements of waste disposal laws and regulations.

Amount of Waste Generated (by Disposal Method) (Unit: tonnes)				
Recovery/Disposal	Method	2021	2022	2023
Hazardous Waste				
Recycling and Reuse	Recycling	6.66	3.46	4.44
Direct Disposal	Incineration (including energy recovery)	55.98	84.16	89.74
Total Amount		62.64	87.62	94.18
Non-hazardous Waste				
Recycling and Reuse	Other Recycling Operations	6.31	6.88	8.15
Direct Disposal	Incineration (including energy recovery)	18	18	21.6
Total Amount		24.31	24.88	29.75

We continue to reduce waste output through process improvement, and focus on the reduction of organic solvents. In 2023, the amount of waste solvent generated^{Note} per wafer was 9.33 kg, a decrease of 0.13 kg compared from 2022. This was mainly due to the effectiveness of the increase in the production capacity and the reduction of acetone.

Note: Waste solvent generated per wafer = Total amount of waste solvent in the year (MT) ÷ COC production in the year (piece)

In the future, we will continue to strive for waste reduction and resource conservation in the manufacturing process. By analyzing the amount of waste and waste solvents generated per unit and evaluating and planning feasible reduction solutions, we aim to bring down the generation of waste and reduce the burden on the environment.

Waste Reduction Measures

Organic Solvent Reduction	
Reduction Target	Acetone is mainly used for cleaning and photoresist stripping processes, used for cleaning wafers.
Before Improvement	Multiple stations in the COW (Chip on Wafer) process are cleaned with acetone
Improvement Method	Through process adjustment, multi-station cleaning is changed to pure water to reduce or eliminate the use of acetone.
After Improvement	The annualized per-chip acetone consumption is reduced by about 60%, which reduces the amount of waste solvent and VOCs emissions, improving indoor air quality, reduces environmental impact, and enhances employee health.

Waste Reduction	
Reduction Target	Activated carbon fillers must be replaced according to the frequency of use and time limit.
Before Improvement	Since the activated carbon tower is used as the backup equipment for the VOC waste gas treatment equipment, when the main equipment is shut down for maintenance or repair due to malfunction, it is necessary to turn on the activated carbon tower to adsorb the VOC waste gas, so that the discharged gas meets the standards. The activated carbon filler needs to be replaced depending on the frequency of use. Before the improvement, the activated carbon filler was replaced on a quarterly basis, four times a year. It is estimated that according to the content of the approved air pollution facility operation permit, 1,750 kg of activated carbon filler needs to be replaced each time.
Improvement Method	Due to the poor adequacy of the main equipment (RTO regenerative combustion organic waste gas treatment equipment), it is necessary to activate the backup equipment frequently. After replacing the parts of the RTO and adjusting the parameters, the adequacy is improved, thereby reducing the use of the activated carbon tower.
After Improvement	In 2023, we reduced the number of replacements by 2 ^{Note} , saving a total of 3,500 kg of activated carbon filler replacement.

Note: As long as the RTO combustion equipment is in good operation, if the activated carbon tower is not operated throughout the year, the activated carbon packing only needs to be replaced once a year (the waste after replacement is commissioned to be recycled and reused by professional qualified manufacturers).

5-6 Emissions Management

Air Pollution Management

We have obtained the ISO14001:2015 environmental management system certification. We implement the air pollutant prevention operation regulations in accordance with the management system, supervise the management and disposal of the controlled processing equipment, and continue to operate according to the management system. In accordance with the Air Pollution Control Act and the Stationary Pollution Source Installation, Operating Permit Management Regulations Amended Clauses of the Ministry of the Environment, related businesses are reported on a quarterly basis through the online system.

Main Types of Exhaust Gas and Control Measures

Waste gas generated by PlayNitride can be roughly divided into general waste gas and organic waste gas according to its characteristics. General waste gas is mainly the heat generated by the machines, and there is no concern of causing air pollution, as it can be directly discharged into the atmosphere. Organic exhaust is mainly generated by volatile organic compounds (VOCs) produced by the volatilization of the organic solvents used in the machines. In terms of prevention and control of VOCs, the zeolite wheel system is used for adsorption and combustion, or activated carbon adsorption through the activated carbon fluidized bed system, and the remaining gases are discharged into the atmosphere. The process and emissions are in line with the requirements of the Stationary Pollution Source Installation, Operating Permit Management Regulations Amended Clauses.

In 2023, due to the continuous optimization of the manufacturing process, the use of acetone was reduced, thereby reducing output of VOCs. Therefore, with the increase in production capacity, the maintenance of existing equipment can effectively control emissions to comply with regulations. We strive to achieve the emission reduction target through improvement at source.

Emission Statistics

In line with the Stationary Pollution Source Installation, Operating Permit Management Regulations Amended Clauses, PlayNitride's annual allowable emissions of VOCs recorded in the is 4,369 tons. Emissions of the current quarter are regularly reported. The total emissions of the past years are as shown in the table below, all in line with the requirements. Due to the increase in production capacity, all types of emissions have increased.

Unit: Tonnes	2021	2022	2023
Volatile organic compounds	0.44	0.771	1.059
Particulate pollutants	0.093	0.202	0.228
SOx	1.333	2.933	3.327
Nitrogen oxides	1.233	2.624	2.958

Data source: Estimated based on the emission coefficient declared for the air pollution control fee.

6. Friendly Workplace

6-1 Talent Attraction and Retention

Talent Recruitment

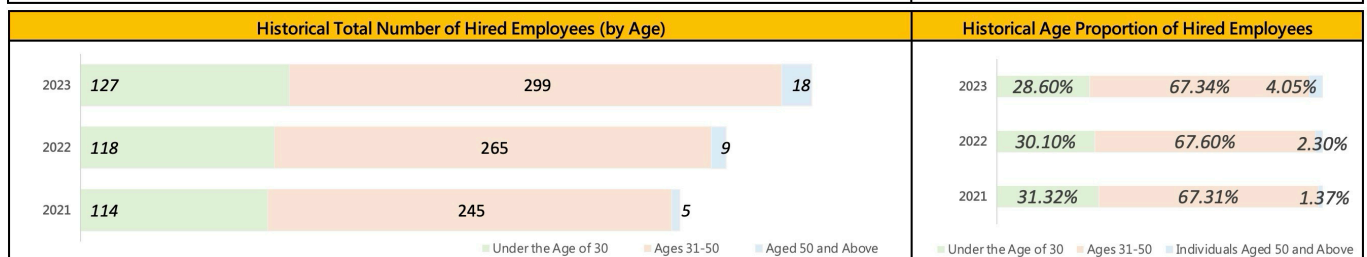
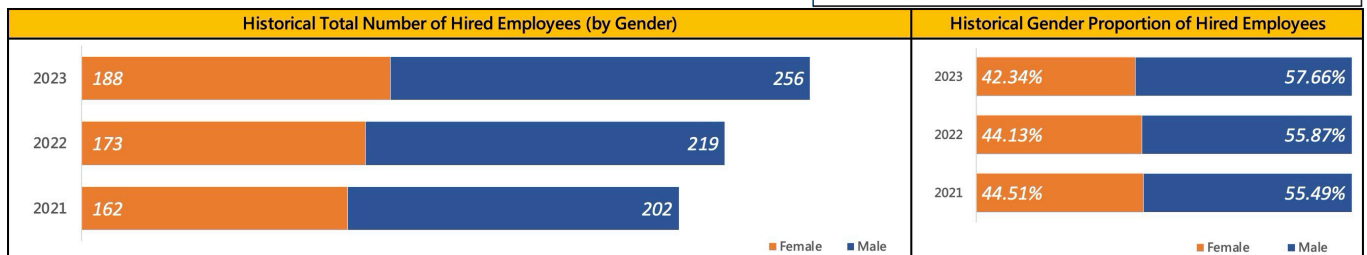
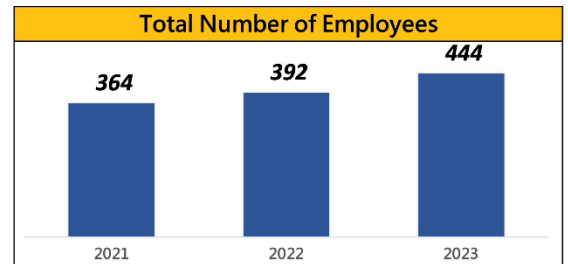
Our business philosophy is based on "people". As the Company's technology and production capacity continue to grow, we continue to recruit like-minded partners to join the Company's "integrity, innovation, and pursuit of excellence" team to jointly pursue corporate sustainable operation and growth.

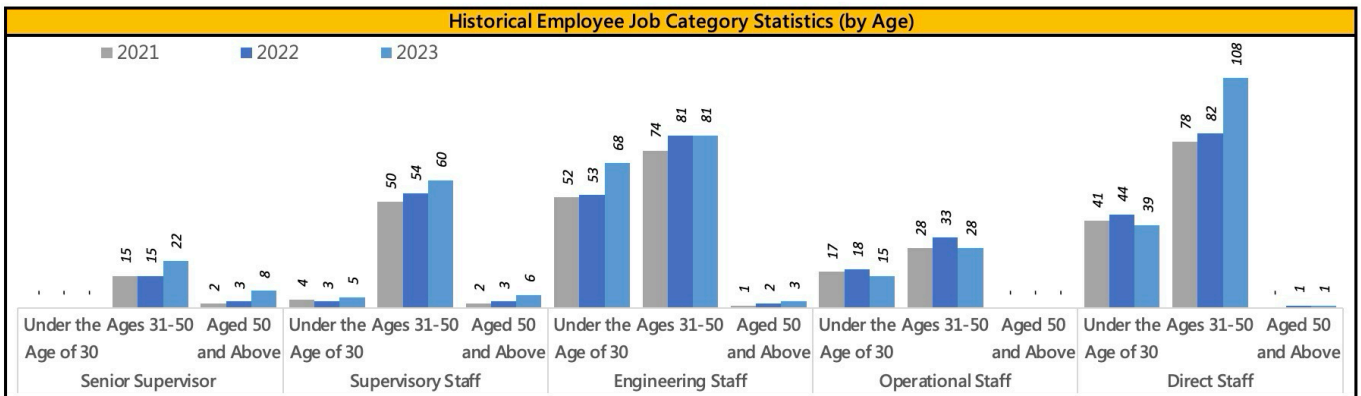
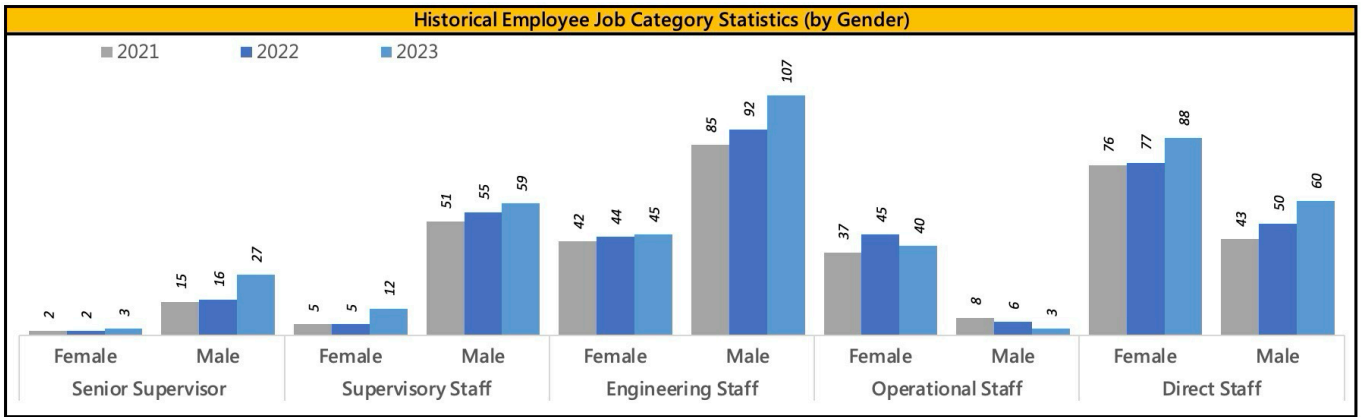
The employment and recruitment channels for employees include job banks, employee referrals, and internal rotation mechanisms. We also actively participate in campus recruitment and industry-academia collaboration of various schools to attract outstanding students or fresh graduates. We are currently planning to add summer internships for those serving alternative military service in 2024 as well as postgraduate to increase the channels for recruiting outstanding talented people. We comply with legal policies and human rights policies, and are committed to providing a safe and secure working environment with diversity, equality, adaptive development, and zero-discrimination. We also provide diversified remuneration and benefits and a humanized system, hoping to work towards the vision of "changing the world" with talent of various fields.

In response to talent diversity and the demand for special professionals, we have hired 10 foreigners by the end of 2023, including R&D personnel, sales personnel, and direct manpower. Foreign employees are recruited in the same way as domestic employees and must sign the relevant ethical code of conduct and confidentiality obligation. We provide the same internal training as that of other colleagues in the Company, offering equal opportunities in terms of learning and promotion.

Manpower Structure

As of the end of 2023, the total number of employees at PlayNitride was 444 (441 in Taiwan and 3 in the U.S.), an increase of 52 (13.27%) from 392 the previous year. Females account for 42.34% of all employees. The age distribution of employees is mainly 31-50 years old, accounting for 67.34% of all employees.





1. Senior executives: executives at the division level or above.
2. Executives: Executives at the section level or above.
3. Engineering personnel: All engineering personnel related to technology R&D and mass production.
4. Operating personnel: All personnel related to operations management.
5. Direct personnel: Personnel directly involved in production and operating machines.

Labor relations with employees are primarily permanent (indefinite contracts), and in 2023, six employees were on temporary employment (fixed-term contract). All employees are full-time employees, and there are no part-time (on hourly wage) or non-guaranteed employees. The working locations are mainly located in Taiwan, including the Zhunan Science Park, the Taipei Office, and the Tainan Office. We do not have any expats. The subsidiary in the United States, that mainly hire local talent, was established in 2023.

There were 15 non-employee workers in total, mainly dispatched by contracted cleaning and security companies to provide laborers in the plant (12 cleaners and 3 security guards).



Remuneration and Benefits

We actively recruit talent in various fields to enhance the Company's competitiveness. In addition, we provide competitive salaries and benefits better than prescribed by the Labor Standards Act, and design a diversified incentive system to reward R&D and innovation energy. The salary standard is based on different job attributes and academic backgrounds, and do not differ based on gender, nationality, or race. The current employee salary is revised with reference to the industry salary survey and the average level of some peer companies. The salary is adjusted based on the performance evaluation results. In order to maintain the overall salary competitiveness, salary adjustments are made periodically based on the market salary level, economic trends, and personal performance. The average salary adjustment in 2023 is 4.5%.

To recognize the dedication of colleagues, in addition to fixed salaries, work allowances (including shift allowances, station allowances, welfare allowances, etc.) are also provided according to the nature of the duties. Performance bonuses, outstanding employee nomination bonuses, patent bonuses, and prize money for the star of PlayNitride are also provided on a quarterly basis for motivation. We also provide bonuses for three major festivals according to the operating conditions.

We pay attention to the needs of different positions and employees, regularly discuss the Company's welfare policy, flexibly provide welfare plans that meet the needs of different work nature and roles, provide a safe working environment, and continue to evolve the welfare system to create the greatest happiness for employees.

Employee Stock Ownership Trust

We provide employees with a long-term incentive and reward system. In July 2023, we initiated the employee stock ownership trust scheme, allowing employees to join once a quarter. Depending on the employees' monthly contribution rate, we allocate a certain percentage of the incentive fund for long-term investment in the Company's stocks to build employee cohesion. By taking this approach, we enhance the employee's sense of participation in the Company, and achieve mutual growth with the Company. The purpose of financial planning is to improve the quality of life of employees after retirement or resignation. As of the end of 2023, 137 employees participated in the scheme, and the participation rate was about 30%.

Performance Evaluation

At present, our performance evaluation system is continuously optimized according to the needs of the organization with adjustments made on a rolling basis. The evaluation methods also vary for each job type. In 2023, on a semi-annual basis, 100% of employees who should be assessed at the manager level or below and who have been in service for at least 3 months have been assessed.

2023 Gender Pay Ratio			
Job Category		Male	Female
Indirect	Managerial positions	1.43	1
	Non-managerial positions	1.15	1
Direct		1.00	1

Note 1: Based on female employees.
 Note 2: Only the standard salary (regular monthly salary paid) is calculated, excluding other remuneration.
 Note 3: The difference in the salary ratio of indirect employees between males and females is mainly due to the difference in job attributes and the percentage of seniority.

PlayNitride Welfare Measures for Full-time Employees	
Bonus	<ul style="list-style-type: none"> Quarterly performance bonus, bonus for three major festivals Patent bonus Outstanding employee nomination bonus Prize money for the Star of PlayNitride
Work Allowance	<ul style="list-style-type: none"> Shift allowance, station allowance, welfare allowance
Employee Ownership Trust	<ul style="list-style-type: none"> Employee Stock Ownership Trust Scheme
Insurance	<ul style="list-style-type: none"> Labor and health insurance / labor pension Employee group insurance (covering medical treatment, accident, cancer)
A Leave System Superior to the Law	<ul style="list-style-type: none"> One-hour flexible commuting, remote work Exemption of make-up work days due to the government's adjustment of holidays Three days of "welfare leave" each year to encourage independent travel arrangements One day of "company leave" on December 25 every year
Health Benefits	<ul style="list-style-type: none"> Annual sports subsidy of NTD 6,000 Subsidies for recreational clubs Annual health checkups that are better than legal requirements
Other	<ul style="list-style-type: none"> Newcomer's arrival ceremony, Labor Day gifts / money Marriage, childbirth subsidies, funeral condolences Continuing education subsidies, language learning scholarships Monthly birthday celebrations Unscheduled recreational activities and volunteer activities Mid-Autumn Festival BBQ, Christmas activities, Year-end party Pantry with free snacks and beverages Darts machine, massage chair, flywheel, billiards and table tennis tables.

The Company continues to adjust the promotion rules according to the organizational growth and improve the promotion system. In July 2023, the annual promotion by position and grade was completed.

Insurance, Retirement Protection

In accordance with local laws, PlayNitride provides employees with insurance coverage such as labor insurance and health insurance. In addition, we also provide employees with private group insurance coverage for diseases such as medical treatment, accidents, and cancer.

Pension procedures: The retirement system has been established in accordance with the Labor Standards Act and related regulations. All employees are subject to the new pension scheme. According to the Labor Pension Act, 6% of the total salary is allocated and deposited into the employee's personal account at the Bureau of Labor Insurance. Employees have the option to contribute 0% - 6% of their salary to their personal pension account according to their wishes.

Employee Welfare Committee

According to the law, a certain percentage of the turnover is allocated as the employee welfare fund each month to the Employee Welfare Committee. The Welfare Committee holds regular meetings and promotes various employee welfare systems to promote employee welfare, including the provision of Labor Day gifts, birthday gifts, and leisure club subsidies.

Other Benefits

Commemorative Gifts

New employee welcome box



Festive gifts



Monthly Birthday Party

Happy birthday parties, special foods, birthday gifts



Festive gatherings

Organize a series of festive activities for different festivals (year-end party, Christmas, etc.)



Mid-autumn Festival Family Day

In 2023, we held the "PlayNitride Mid-autumn Festival Family Day", which included outdoor BBQ, group competition, game experience, children's games, and a gourmet cultural and creative market. Colleagues were invited to enjoy a comfortable day trip with their families.

Through the Family Day, we hope to build solidarity among our colleagues, enable their family members to understand more about our colleagues' work environment and the company atmosphere, so that the colleagues and their families feel valued by the Company.

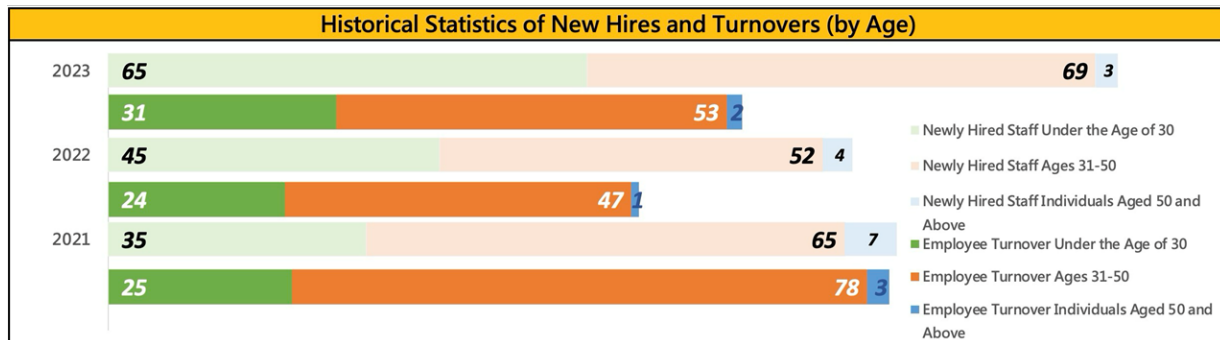
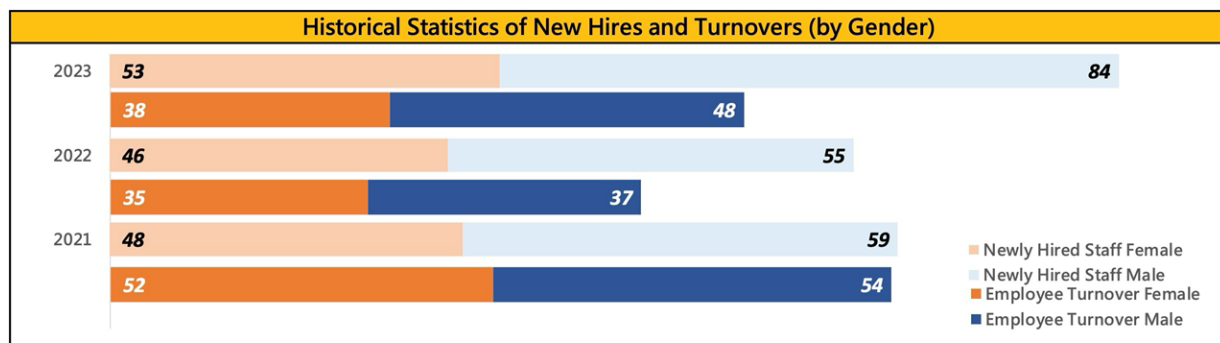
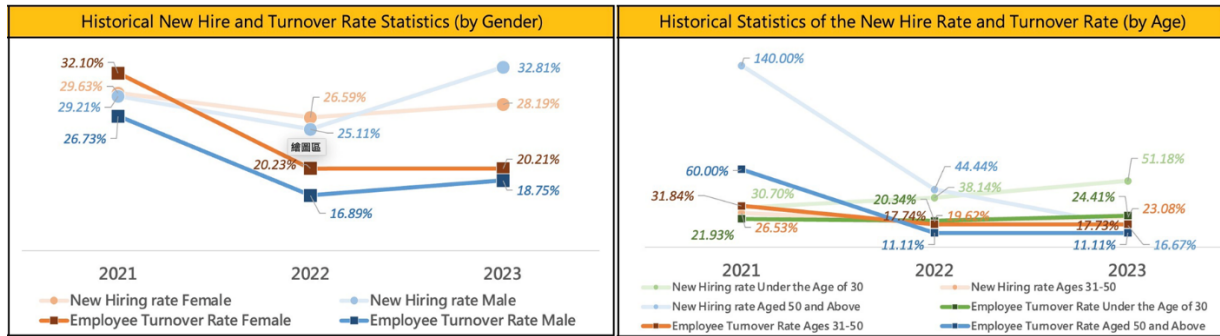


Laser wars competition, where colleagues formed teams to compete and collaborate with each other



Employee Recruitment and Resignation

In 2023, a total of 137 new employees were hired (new hire rate of 30.86%), and a total of 86 employees left the Company (annual turnover rate of 19.37%), both increased from the previous year. To help new employees quickly integrate into the work environment and unleash their strengths, the supervisor will conduct interviews with the new employees to help them adapt to the organization. They will also arrange appropriate tasks based on their backgrounds, abilities, and expectations, provide regular reviews and feedback, and design and provide corresponding new employee training, on-the-job training, and development programs. We value talent retention, and track and analyze the retention rate and turnover rate of direct and indirect employees to ensure they meet the standard every quarter, all reaching the target. The reasons for leaving the Company are also understood through interviews with employees who apply for departure. The goal is to continuously improve the Company's system and retain outstanding talent.



Note: New employment rate = Number of new employees of that gender (age) in the year ÷ total number of employees of that gender (age) at the end of the year.
 Note: Turnover rate = Number of employees who left the Company of that gender (age) in the year ÷ total number of employees of that gender (age) at the end of the year.

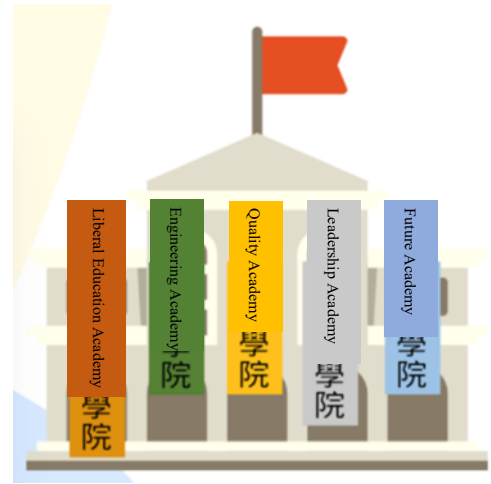
Smooth Communication Channels

We value employees' opinions and regularly engage in two-way communication through labor-management meetings, the Occupational Health and Safety Committee, and the Employee Welfare Committee. In addition, we have set up measures such as the employee suggestion box, sexual harassment/workplace bullying complaint mailbox, and physical and mental care/employee consultation service. Relevant communication channels are announced and promoted on the new employee training, employee website, and TV wall to ensure that employees' opinions are properly heard and handled. In 2023, a total of six suggestions and five negotiation cases were received, all of which have been properly handled and closed.

6-2 Talent Development

Cultivation and Development Planning

Talent is the key to continuous innovation and maintenance of our leading position in the industry. We expect employees to have innovative thinking and action. Adhering to the concept of "nurturing talent and caring for employees", we have established five major academies - Liberal Education Academy, Process Engineering Academy, Quality Academy, Leadership Academy, and Future Academy. Internal lecturers conduct regular courses to provide open and diverse learning opportunities, and add value to talent through training and development. We also introduced an online education and training system in 2023 to digitize courses one after another to pass on the Company's knowledge and experience. We have converted 28 courses on basic knowledge to online courses, and provided more than 70 courses on AI and personal growth for employees to choose freely to encourage independent learning.



PlayNitride Training Framework

We provide comprehensive education and training and on-the-job training (OJT) to strengthen employees' professional capabilities in the workplace and encourage them to participate in external training. From when the employees join the Company, we invest in sufficient resources for employees with different duties and ranks and initiate different training programs at each stage to implement systematic learning and development.

The education and training offered by PlayNitride includes new employee education and training, MicroLED general courses, professional courses, and executive management courses. They are also divided into professional courses in different fields such as engineering, quality, and leadership. We hire external project lecturers and actively train internal lecturers to pass down the Company's key technologies. We cultivate cross-disciplinary R&D, production, manufacturing, quality, and management capabilities for talent in different fields to cope with the future wave of intelligence and integrate cross-disciplinary talent.

Category by Level		Profession / Function					
		General Education and Training	Engineering Management / Cognitive Analysis	Quality Management	Leadership Development	Self-development Training / Self-efficacy	OJT
Management	Division Manager			Quality Management Leadership and Commitment Quality Risk Prevention and Promotion	*Strategic Management *Accountability and Empowerment	* Industry Trends	
	Department Manager		New Product Introduction / R&D Cost Management		Talent Cultivation Team Motivation New Generation Leadership		
Engineering		Introduction to Epitaxy Introduction to Crystallite Introduction to Measurement Introduction to Patents	<ul style="list-style-type: none"> Problem Analysis and Decision-Making PSDM JMP R&D Data Analysis Design of Experiment DOE Statistical Process Control (SPC) 	<ul style="list-style-type: none"> Quality Tool / Technique Training QC080000 Hazardous Substance Process Management System 	Target Management Time Management Project Management	Personal Efficiency Creative Thinking Communication Skills Potential Development Problem Analysis and Resolution	Professional Ability Enhancement / Statutory Certification Courses
	Administration		Logical Thinking Data Analysis				
Production Line Technology	Team Leader		Environmental Safety Risk Prevention and Execution / Hazard Prediction and Promotion	ISO9001 Quality System Training	On-site Management and Work Instruction		Job Duty Training
	Technician	<ul style="list-style-type: none"> Clean Room Operation MES Operation OJT - Machine Operation Regular Certification 		ESD Electrostatic Discharge Prevention			
New Employees		Micro LED Basic Knowledge / Corporate Culture, Management Philosophy, Human Resources System, Computer Information Security / Quality Awareness (ISO9001 & Cultural Management) / Basic Awareness of Environmental Safety and Health					

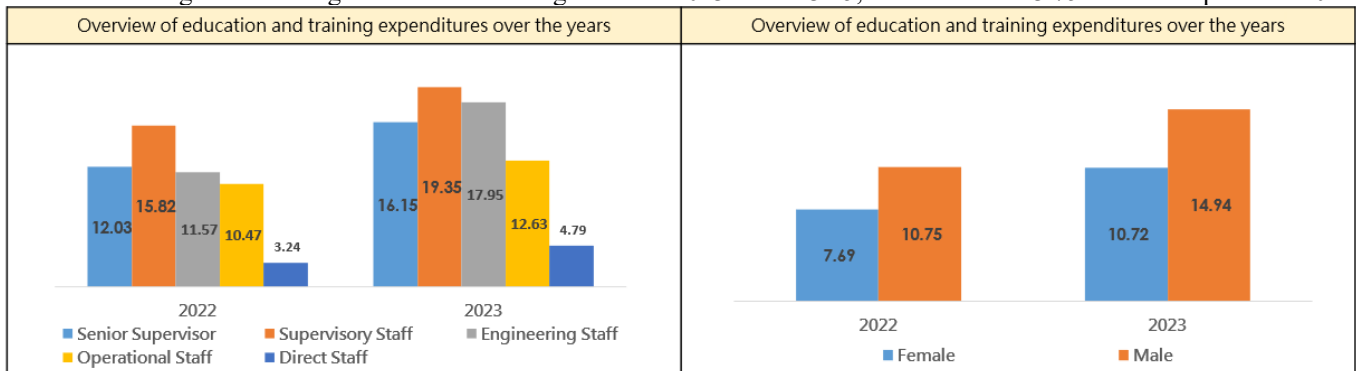
Introduction of the Online Training Platform

To encourage employees to learn independently, we introduced the PlayNitride Academy, an online education and training platform, in June 2023. The online training platform enhances the flexibility and accessibility of training, allowing employees at each location to study independently according to their personal timetables without being restricted to fixed course times and locations. At the same time, we actively manage and share the Company's knowledge resources through the platform, and transform the basic competency courses from physical to online courses to promote knowledge management. In addition, management can also get a grasp on the learning progress and results of colleagues through the training analysis report in a timely manner.

We originally planned to introduce 7 online courses on important basic competencies in 2023. However, the excellent results after the introduction attracted more departments to join the online course development. As of the end of 2023, 28 courses had been launched. The courses cover the Company's core skills, professional knowledge, and related topics, with an average of 4.89 classes, helping employees complete the necessary training and meet the training needs of different departments and positions. In the future, we will focus on developing courses and promoting the operation and use of the platform to ensure that every employee can make full use of this digital learning tool.

Training Implementation Outcome

We have a good culture of self-learning. We design courses based on competencies and look into the training needs of each unit every year to plan corresponding training courses. For various professional courses, personnel from relevant units are given priority to receive training, and registration is also open for interested colleagues in an effort to encourage them to learn diverse knowledge. The average number of training hours in 2023 were 13.15, an increase of 3.75 hours compared to 2022.



New Employee Training Blueprint

Talent is our most important asset. To help new employees quickly adapt to the environment, we arrange complete new employee training courses covering management regulations, corporate culture, concepts of environmental safety and quality, workplace human rights, and compliance with ethical corporate management regulations.



Professional training and on-the-job training are planned for different job types to assist colleagues in their learning and development. In 2023, the training completion rate of new employees reached 100%.

Featured Training Courses

Liberal Education Academy - MicroLED Foundation Course

To continuously boost our colleagues' MicroLED knowledge, we offer relevant technology update and application courses from time to time. In 2023, based on the learning needs of our R&D colleagues, the Liberal Education Academy launched a series of courses, taught by the company executive as the internal lecturer. The average course satisfaction rate was 4.76 points.



Course Title	Number of Participants	Course Hours
Fundamental Knowledge of Laser and Optics	51	2
Fast-growing MicroLED display technology	120	1.5
Introduction to Epitaxy: Group III Nitride	44	1.5
Introduction to MicroLED Photometry and Color	46	1.5

Liberal Education Academy - Important Current Issues

Continue to introduce the latest information and practical courses to ensure that employees can grasp the latest knowledge and skills in a timely manner.

[ChatGPT Application Course]

The generative AI application ChatGPT launched by OpenAI is one of the biggest highlights of technology in 2023. To help employees properly use new technologies to improve work efficiency, the internal Digital Development Division has offered a series of application courses: From ChatGPT to Midjourney: Generative AI Practical Sharing, ChatGPT Hands-on teaching improving Productivity by 10X Times. A total of 139 employees were trained in 2023, and the average satisfaction score was 4.72 points. Some employees said that they had never used AI tools before, and they not only learned practical tools, but they can also apply these tools to the workplace in the future.



[Discussion on Gender Equality]

In 2023, Taiwanese society paid attention to the #MeToo movement. We hired external lawyers to discuss issues such as gender and sexual harassment prevention. The aim is to raise colleagues' awareness of gender equality and sexual harassment and understand relevant laws and regulations, so that they have the basic knowledge to protect themselves and others. Through in-depth discussions and continuous promotion, we understand the relevant grievance procedures and prevention strategies, hoping to build a safer and respectful work environment. In 2023, a total of 44 participants were trained, and the average satisfaction score was 4.4. According to our colleagues, "The lawyers used vivid examples to construct the concept of gender and then extended to the boundary of verbal and physical interaction between people, and it was easy to understand what kind of behavior may cause sexual harassment."



PlayNitride Seminar

To enhance the personal accomplishment and self-growth of our colleagues, PlayNitride has been organizing lectures since 2019, inviting outstanding individuals from various fields to give speeches at the plants. By doing this, our colleagues can gain a deep understanding of industry development trends and the successful mindsets, innovative thinking, and skills of leaders. We hope to inspire our colleagues in their personal and professional growth, and encourage them to continue to forge ahead in the path of promoting the growth of the MicroLED industry.

We have organized many lectures over the years, and launched more diversified lectures in 2023. The average satisfaction score of the lectures was 4.74.

"Very high-quality, easy-to-understand, and all data-related employees should participate"
- Employee feedback

Professor Chia-Yen Li of the Department of Asset Management of National Taiwan University shared smart manufacturing and data science. Participants were able to understand smart manufacturing and data science analysis framework using the most popular ChatGPT. The professor explained the review and definition of problems, data quality, and after dispelling possible myths and omissions, case studies were used to explain the application of theory, which was a great benefit to the colleagues.

"This is the most in-depth autobiography I have ever heard, and it gave me a lot of thinking and strength."
- Employee feedback

This impressive speech was given by General Manager Hui-Yu Wu, General Manager of Clientron Corp, who is the record holder of being the youngest general manager and first female general manager of Intel Taiwan, has experienced many ups and downs in life. Her story breaks through the world's stereotypes about women and people of poor background to maximize the potential of life and open up their own possibilities, which deeply inspires colleagues.



6-3 Human Rights Management

Human Rights Management

We value employees and the protection of their human rights, strictly abide by relevant labor laws and regulations, and create a humane, dignified, and equal working environment. With internationally recognized human rights standards such as the United Nations International Labor Organization, we have clearly defined the methods and channels for sexual harassment complaints in the workplace in the "Work Rules" and "Sexual Assault and Sexual Harassment Prevention and Control Measures, and Complaint, Investigation and Handling Procedures" to ensure gender equality and freedom from harassment in the workplace. Human rights policies have also been formulated (refer to the Corporate Sustainability page on the Company's official website for details), which is included in the new employee training course and announced on the Company's physical bulletin board or system to ensure that employees understand their rights and related matters as well as the available grievance channels. In 2023, no related incidents occurred. In 2023, the formulation of the Supplier Code of Conduct was completed, including the protection of human rights as one of the requirements for suppliers.

Human Rights Management Approach

- Provide a safe and healthy working environment free from harassment
- Eliminate illegal discrimination and ensure equality of working opportunities
- Ban on child labor
- Ban on forced labor
- Foster an environment that encourages communication and set up an open management model
- Support and assist employees with maintaining their physical/mental well-being and work-life balance
- Regularly inspect and evaluate related schemes and practices

After formulating the human rights policy in 2022, we began to plan the human rights risk due diligence in 2023. We collect issues covering various fields through different channels, including collecting the perspectives and opinions of internal experts and departments, and consulting external experts for professional advice. We refer to industry standards and best practices to ensure the comprehensiveness and validity of the questionnaires. We have prepared human rights risk questionnaires that cover labor rights (12 questions), health and safety (2 questions), governance and ethics (1 question). A human rights due diligence questionnaire was conducted in the first quarter of 2024. Potential human rights risks are identified and assessed by assessing the possibility of incidents and the severity of negative impacts, and necessary measures are taken to effectively control and manage these risks. In the future, we will continue to implement relevant publicity and training through institutionalized methods to ensure that all employees are treated with dignity and respect. We will work with employees to create a sustainable and safe workplace with zero harassment and zero discrimination, and open communication, and protect the human rights of all employees and workers.

6-4 Employee Health and Safety

Occupational Safety and Health Management System

Resources are invested by PlayNitride under the core philosophy of “disaster prevention and containment” towards occupational health and safety problems in plant operations. By establishing an occupational safety culture and proposing effective countermeasures, the safety awareness and protection management of workers are strengthened to create a “occupational hazard-free” environment.

In addition to complying with regulatory requirements, we have also introduced the ISO 45001 occupational safety and health management system. We passed the certification for the first time in 2020, and again in April 2023 and obtained the certificate to maintain the operation mechanism of the occupational safety management system. We continue to implement and promote the safety and health management procedures for operations-related activities, products, services, and stakeholders related to our operations. At the same time, we effectively control any negative impact or non-compliance related to safety and health, and regularly review performance and strive for continuous improvement.

From risk identification and assessment, management program planning and execution, as well as through regular and unscheduled safety inspections and change management, the continuous improvement mechanism is used to reduce the risk of employees' exposure to harmful environments. Improvement targets have also been set for the management of occupational health and safety as well as environmental protection. The short-term goal was defined as “control of pollution and control of health and safety risks as a law-abiding corporate citizen.” Medium and long-term goals are defined as “Pollution prevention, reduction of health and safety risks prevention of occupational disease, establishing a corporate image of being green and safe.” There were no employee health and safety violations that led to PlayNitride being penalized by the competent authority in 2023.

There are 432 employees in the management system, and a total of 15 non-employees workers (security guards and cleaners). All contractors' personnel who perform maintenance or construction activities in the plant retain relevant records according to law. However, we are not able to effectively count the number of people according to the existing records. We will continue to improve the record method and disclose it in the following years.

Occupational Health and Safety Policy

- Compliance Pollution Prevention
- Safe Behavior, Energy Conservation and Carbon Reduction
- Health Promotion and Continuous Improvement
- Total Engagement and Sustainable Development

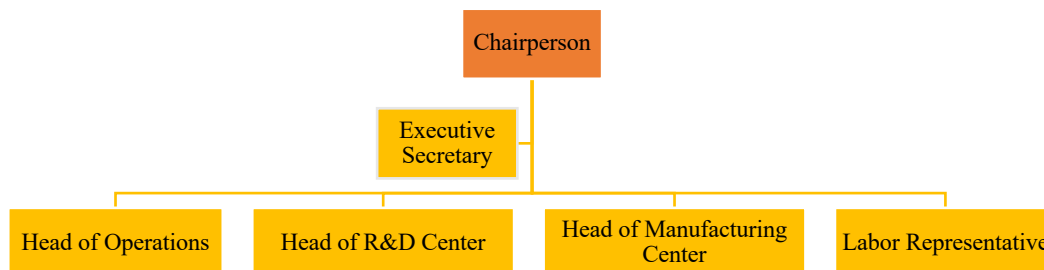
Operating Locations	Number of workers at the end of 2023		Number of people covered by the occupational safety and health management system	Number of employees covered by the internal audit	Number of people covered by external verification ^{Note}
	Employees	Non-employees			
Taiwan	441	15	432	432	432
Coverage rate			94.74%	94.74%	94.74%

Note: Assess the occupational safety and health risk of each operating location. Outside the headquarters in Zhunan, all are sales and management offices with a small number of operating locations (17 employees in the Taipei Office, 7 in the Tainan Office, and 3 in the U.S. Office). The risk of disabling injuries is relatively low, so it is not included in the operation of the management system.

Operation of the Occupational Health and Safety Committee

The Occupational Health and Safety Committee is convened on a regular basis to examine the results of risk identification, planning and execution of supervision and management plans, as well as the review and improvement of performance indicators to ensure the proper implementation of the health and safety policy.

The Occupational Health and Safety Committee is chaired by the CEO and consists of 1 executive secretary, 8 promotion members, and 5 labor representatives (over 1/3 of all committee members).



We have established the Environmental Safety and Health Consultation and Communication Management Procedures. Employees can respond to occupational safety and health opinions and communicate with them by phone, e-mail or other channels at any time, or raise them to the labor representative, unit supervisor, or the unit's occupational safety personnel. Proposals are submitted and discussed at the Occupational Health and Safety Committee meeting, and the investigation of an incident must be counter-signed by the labor representative before the case can be closed. Employees can inquire about environmental safety and health-related laws and regulations in the bulletin area of the employee website. In addition, electronic signboards have been set up in public areas and operation areas to promote environmental safety regulations. In doing this, employees are able to fully understand environmental safety information and provide feedback channels, working together to improve workplace safety.

Workplace Risk Identification and Preventive Actions

To keep abreast of potential hazards, risks, and levels of hazards in the work environment, we have established the "Hazard Identification and Risk Assessment Management Procedures" and arranged for personnel of various departments to receive education and training on hazard identification and risk assessments. Prior to installing the machinery and equipment in November every year, the activities, processes, scopes, machinery and equipment, work items of the department, assess the types of physical, chemical hazards are investigated to assess physical, chemical, biological, ergonomic, and social hazards that may occur, and estimate the probability and severity. Risk assessment tools for identifying hazards are used to analyze and evaluate potential risks that may lead to hazards, and control and preventive measures are adopted for high-risk items. Each high-risk item and control process are listed as projects to help eliminate risks or reduce them to minimum.

During the 2023 assessment, it was found that the personnel loading and unloading operation area was relatively close to the pump and the pipe valve during the waste liquid drum removal operation in the plant. A pipeline leakage would pose a risk of injury due to contact with the waste liquid. Therefore, hardware improvements were made to the hard surfaces, and dedicated pipe loading and unloading ports were set up in safer areas to enhance operational safety. In addition, we also completed the risk assessment of hazardous gas piping valves. Based on the assessment results, we replaced chlorine valves that were used for more than 10 years to reduce the risk of accidental disasters.

In addition, the Company has an industrial safety inspection plan. The Industrial Safety Department conducts weekly plant inspections. If there is any need for improvement, the relevant departments are requested to provide the improvement measures and the completion date. The Industrial Safety Department will conduct re-inspection and acceptance to be reviewed at the Occupational Health and Safety Committee meeting.

Operating Environment Monitoring

In order to grasp the possible impact of the working environment in the plant on the employees' health and use it as the basis for the control and improvement of the hazards of the working environment, the Company entrusts a qualified working environment monitoring organization to perform regular working environment monitoring every six months. The monitoring items include chemical and physical hazardous factors and the testing area covers offices, clean rooms, and public areas. The monitoring results are announced to all employees. If the exposure value exceeds the legal limit, a hazard control improvement plan shall be formulated, and the improvement status shall be reported to the Occupational Health and Safety Committee on a regular basis. In 2023, all operating areas, including offices and clean rooms, were tested, and the test results were in compliance with regulatory standards.

Disposal Measures and Management of Hazardous Chemicals

In order to effectively control the operation of hazardous chemicals and enhance colleagues' awareness of the potential hazards of chemicals, we have established the "Chemical Management Procedures", "Hazardous Chemicals Management Guidelines", and "Hazard Communication Practice Guidelines". All process machinery and equipment are properly stored in specific locations and planned explosion-proof cabinets, and necessary control measures are implemented. Necessary labeling management is performed in accordance with the "Regulations for the Labeling and Hazard Communication of Hazardous Chemicals" and the "Globally Harmonized System of Classification and Labelling of Chemicals" at the storage site and containers. New or active on-site staff performing related operations receive regular training, and safety data sheets are clearly placed next to the entrances and exits of the operation area for easy access by personnel. This ensures that relevant emergency response measures are implemented immediately in the event of an emergency.

Emergency Response Measures and Management

We have established the "Emergency Response Management Measures" and prepared an emergency response plan, including a corresponding mechanism for fires, chemical spills, typhoons, earthquakes, power outages, and accidents. Moreover, we have established an emergency response organization for various emergencies. In order to keep abreast of various situations in the event of a disaster, emergency response education and training and drills are held every six months to familiarize all employees with the response process and minimize disaster losses. In order for employees to ensure their own safety and avoid hazardous situations, we provide occupational safety education and training to new employees when upon their arrival. Additionally, we promote that employees may take the initiative to avoid hazards when they encounter situations that endanger their lives without being penalized. In 2023, a total of 2 plant-wide emergency response drills were conducted, covering topics such as fire, toxic gas and chemical leakage, and protective clothing training, with 641 participants.

In addition, in order to ensure the safety and smoothness of escape routes, a fire protection system linkage access control improvement project was launched in 2023. This ensures that when a fire alarm occurs, all control doors in the plant can be opened immediately to increase emergency response efficiency and reduce the risk of accidental disasters.



Implement Safety Education and Training

We are committed to ensuring that employees receive maximum protection in the workplace, implementing comprehensive safety education and training to enhance the safety awareness of all personnel to create a more secure working environment. Regular refresher training is provided for occupational safety and health-related management personnel as required by law to implement safety and health management.

[Occupational Safety and Health Education and Training]

Provide complete occupational safety and health education and training for each new employee to understand how to prevent and manage potential occupational risks in the workplace. Relevant training materials are placed in the Company's teaching material sharing area for employees to refer to relevant information at any time.

[Education and Training on Hazardous Chemicals]

Hazardous chemicals are one of the potential sources of hazards. We provide new employees with education and training on hazardous chemicals, including how to avoid contact with them, how to use personal protective equipment, and emergency measures to be taken in the event of a chemical accident.

Employee Safety Education and Training Hours				
Category	Course Title	Frequency	Person-time	Total Hours
Safety Awareness	Occupational Safety Regulations and Supervisors' Management Responsibilities	1	55	165
	General Safety and Health Education and Training	1	22	132
	General Safety and Health Education and Training for New Recruits	28	137	411
	Public Works Quality Management Training Course	1	1	84
Hazardous Work	Chemistry Cloud System Teaching	1	11	22
	Education and Training on Hazardous Chemicals	28	63	189
Emergency Response	Education and Training on Emergency Protective Clothing	1	5	5
	Fire Escape Safety Concept: "Get Out Alive"	1	23	34.5
	CPR First Aid and Fire Survival Course	1	46	92
	Self-defense Firefighting Drill	2	272	136

[Emergency Response Drill]

Emergency response drills are organized every year to help employees familiarize themselves with the procedures and skills to respond to emergency situations, improve their response capabilities, ensure personal safety, and reduce related losses in the event of accidents and disasters.

[Education of Relevant Regulations]

From time to time, we promote relevant regulations to all employees through announcements, electronic signboards, and courses in collaboration with the local fire brigade. In doing this, we ensure the implementation of the Company's safety policies and regulations. In addition, earthquake and fire safety courses are provided to enable employees to master the latest safety knowledge and skills.

Disabling Injury Incidents

In 2023, there was one case of disabling injury among employees. The cause of the accident was that when a colleague was passing through the security gate, the passer-by was not paying attention when the door was pushed open, and the passing colleague injured his foot. Subsequently, a prominent sign was posted on the doorknob to remind everyone to pay attention to access safety; there were three near misses, and the operating procedures and environment have been improved to prevent recurrence.

All employees	2021	2022	2023
Annual working hours	668,571	771,408	803,088
Number of occupational injuries and fatalities	0	0	0
Number of people with serious occupational injuries	0	0	0
Number of cases of working hours lost due to occupational injuries	0	0	1
Number of cases of no losses of work but with restricted work activities or temporary transfer from the existing jobs	0	0	0
Number of injuries with no loss of work and no restricted work activities	0	1	0
Number of near misses	1	3	3
Number of days of working hours lost	0	0	0
Number of recordable occupational injuries	0	0	1
Occupational injury fatality rate	0	0	0
Serious occupational injury rate	0	0	0
Total recordable incident rate (TRIR)	0	0	0.25
Days away/restricted or transfer rate (DART)	0	0	0.25
Near miss frequency rate (NMFR)	0.30	0.78	0.75
Days lost ratio	0	0	0

Note:

- "Annual working hours" is calculated as the number of employees from January to December x Number of days worked in the month x Daily working hours
- The calculation method of the indicator does not include traffic injuries.
- "Occupational injury fatality rate" = Number of occupational injury fatalities x 200,000 ÷ Annual work hours
- "Serious occupational injury rate" = Number of people with serious occupational injuries x 200,000 ÷ Annual working hours
- "Total recordable incident rate (TRIR)" = Number of recordable incidents x 200,000 ÷ Annual working hours
- Days away/restricted or transfer rate (DART) = (Number of cases of working hours lost due to occupational injuries + Number of cases of no losses of work but with restricted work activities or temporary transfer from the existing jobs) x 200,000 ÷ Annual working hours
- "Near miss frequency rate (NMFR)" = Number of near misses x 200,000 ÷ Annual working hours
- "Days lost" refers to the number of days during which an injured person is temporarily (or permanently) unable to return to work, excluding the day of injury and the day of return to work.
Including the number of days elapsed in the interim (including Sundays, holidays, or days when the business unit is suspended) and the number of days when work is disabled due to the disaster after the resumption of work.
- "Number of recordable incidents" refers to the number of people included in the statistics of the above-mentioned injuries (those with lost working hours of more than 8 hours)
- "Number of people with serious occupational injuries" refers to other injuries that the injured person cannot recover from (such as amputation), or the number of people who cannot return to the working condition before the injury within six months.

Accident Reporting and Investigation Process

In order to continuously reduce the probability of accidents and identify the cause of disasters to prevent their recurrence, we have established the "Environmental Safety and Health Abnormal Corrective and Preventive Measures Management Procedures" and "Occupational Accident Reporting and Investigation Management Procedures" to investigate and analyze the causes of incidents for tracking for improvement.



Contractor Safety and Health Management

In 2023, about 2,800 repairs and maintenance were performed by contractors (there is no statistics on the number of working hours of contractors at the plant), and no disabling injuries occurred. To ensure the safety and health of non-employee workers and contractors, we have established the "Contractor Safety, Health and Environmental Management Procedures", which require contractors to provide safety and health education and training for their employees. In addition, the employees of contractors must know and follow the safety and health education materials, assessments, hazard notification and other relevant information provided by the Company before entering the plant. The internal contact person responsible for contracting operations must submit a construction application, high-risk operation control, and construction protection plan for each construction before commencing, and the contractor is required to hold a toolbox meeting on the day of construction to conduct pre-service education and operation hazard education and analysis. In 2023, the application system was optimized to make the process simpler, facilitating the compliance of colleagues and contractors. During the construction period, the internal contact person and contractor supervisors must patrol the site to ensure the safety of the workplace. This procedure is used to manage the operational safety and health of the contractors during the construction in the plant to ensure the rights of the contractors and PlayNitrade. Contractors shall comply with the provisions of the Occupational Safety and Health Act and related laws and regulations in addition to the contract provisions during the construction period.

6-5 Health Promotion

Occupational Health Service

We attach great importance to employees' autonomy at work, physical and mental health, and balance in life. We provide sports facilities and exercise encouragement programs to make exercise a part of employees' daily health care. We also appoint full-time occupational health nurses to promote occupational disease prevention and health promotion and provide professional health consultation. We are committed to creating a safe, healthy and friendly work environment for our employees.

Health Checks That Are Better Than Regulations

Category	Implementation Outcome
Annual Health Checkup	<ul style="list-style-type: none"> • In 2023, a total of 321 employees actually underwent health checkup in the plant, and the rate of employees who should be examined according to laws and regulations is 100%. • In compliance with the regulations, an annual health checkup is arranged for all employees, and the abnormal items of the health checkup results are managed by the plant nurses at different levels. The occupational physician will be arranged to provide on-site interviews with the employees based on their health status and needs to provide them with health guidance and management. In 2023, the health examination plan provided thyroid and abdominal ultrasound examinations to protect the health of our colleagues. We also provided discounted self-funded screening items for our colleagues to choose from. • Management or follow-up of abnormalities after health examination: On-site physicians are arranged to conduct health consultation and education every month. • We encourage employees to self-manage their health by regularly measuring and tracking blood pressure with sphygmomanometers in the plant to prevent cardiovascular diseases. We also plan various health education promotions or activities to promote physical and mental health and work-life balance of employees.
Occupational Health Checkup for Special Hazards	<ul style="list-style-type: none"> • In 2023, a total of 69 employees were required to undergo health checkups in the plant, achieving a checkup rate of 100%. • Health exams or related assessments are conducted for tasks involving special health hazards as required by law. A tiered health management system is also in place to bring about improvements to the working environment, prevent hazards, and maintain the health of employees. • Anomaly management or follow-up after health examination: On-site physicians are arranged to conduct health management grading and health consultation every month.

Four major plans for labor health protection

Category	Implementation Outcome
Ergonomic Hazard Prevention Program	<ul style="list-style-type: none"> Assessment of chemical, biological, physical, and ergonomic factors that endanger health in the workplace, or prevention of musculoskeletal disorders caused by repetitive tasks. In 2023, we cooperated with the plant health examination and the factory doctor to investigate musculoskeletal-related symptoms. There were 12 people suspected of harm, which was mainly due to their personal lifestyle habits. After caring for each individual, a physician interview was arranged to provide guidance and advice on improving their daily life and exercise habits.
Maternity Health Protection Program	<ul style="list-style-type: none"> Assess workplace hazards and ensure a safe and sound work environment, pre- and post-natal health assessment by occupational physicians, and flexible and friendly breastfeeding spaces. We respect personal privacy. Pregnant employees take the initiative or have the contact of each department notify the plant nurse to assess, care for, and protect their health during pregnancy and postpartum. In 2023, on-site physicians were arranged to evaluate the suitability of the working environment and the content of the work, serving 8 people.
Abnormal Workload-Induced Illness Prevention Plan	<ul style="list-style-type: none"> In 2023, in conjunction with in-plant health examinations and questionnaires, we screened employees with high health risks or overload risks. Plant nurses interviewed or arranged for on-site physicians to conduct interviews, and they discussed work content adjustments with their department heads as appropriate and at their own discretion. In 2023, plant nurses interviewed 17 colleagues, some of which have improved after follow-up.
Prevention of Unlawful Infringement While Performing Duties	<ul style="list-style-type: none"> Special lectures and promotions: Due to the heated discussion of the "#MeToo" movement in Taiwan in 2023, a lawyer was invited to give a lecture on "Sexual Harassment OUT - Creating a Gender-Friendly Workplace". 44 people took part in this lecture. We have made a written statement declaring the elimination of workplace violence, and the grievance channel will continue to be announced through the employee portal and elevator billboards. As of 2023, no related incidents occurred.

Unpaid Parental Leave

We expect to provide our employees with an equal and inclusive work environment, comply with the Gender Equality Work Act and other relevant laws and regulations, and provide gender-equal leave, such as menstrual leave, maternity leave, prenatal leave, paternity checkup and maternity leave, and family care leave, unpaid childcare leave, etc. In addition, those with special needs that require temporary home care (family members or children) can also apply for teleworking. We are friendly to the needs of employees to settle down and raise their family. We have established a pregnancy notification mechanism and plant nurses provide relevant resources to care for employees' health during pregnancy and postpartum. A maternity allowance of NTD 10,000 is provided (increased to NTD 20,000 for the birth of a third child). We have a lactation room and signed a special contract with a nearby quality childcare institution to support the childcare needs of our employees.

In 2023, 10 of the 29 employees qualified for parental leave (all female) applied for reinstatement, and 5 of the 7 employees who should have been reinstated that year actually did, with a reinstatement rate of 71.43%.

Item	2022		2023	
	Female	Male	Female	Male
No. of employees entitled for unpaid parental leave (A)	16	12	20	9
Number of applications in the year (B)	6	1	10	0
Number of employees expected to be reinstated in the year (C)	1	1	7	0
Number of employees actually reinstated (D)	1	1	5	0
Number of employees still working 12 months after reinstatement (E)	1	0	1	0
Application rate for unpaid parental leave (B/A)	37.5%	8.33%	50.00%	0%
Reinstatement rate at the end of the retention period (D/C)	100%	100%	71.43%	0%
Retention rate after reinstatement (E/D for the previous year)	-	-	100%	0%

Note: The number of employees qualified for unpaid parental leave in 2023 refers to the total number of employees who have applied for maternity leave, paternity checkups, and paternity leave from 2021 to 2023.

Other Health Promotion Measures

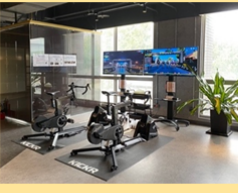




Category	Implementation Outcome
Health Promotion	<ul style="list-style-type: none"> Activities are arranged from time to time to encourage employees to develop healthy habits, including 1 yoga class and 3 sports competitions (flying wheel, skipping rope, and 1000-step challenge).
Health Seminar	<ul style="list-style-type: none"> "Relieving Stress in Life" was shared by Dr. Yung-Yi Chen, a licensed clinical psychologist in the United States, to help employees better manage stress, promote health, and improve their quality of life. "Health Alerts, Eat to Solve" Dietitian Yu-Yi Sun instructs colleagues to improve their health through exercise and a correct diet.
Sports Competitions	<ul style="list-style-type: none"> From February to August, we held the "Healthy Mind and Body Activities - PlayNitride Jump GO Activity" to encourage colleagues to set goals to maintain their BMI, body fat percentage, and waist circumference or closer to ideal values. The event lasted for six months, and a total of 44 people received the reward.
Stress-relieving Massage	<ul style="list-style-type: none"> Visually impaired massage therapists are hired to provide 10 30-minute service hours during business hours each week. Colleagues can make unlimited appointments for themselves. In 2023, a total of 480 people were served.

Promoting Physical and Mental Health

We hope that employees will develop healthier lifestyle habits and develop or continue their personal interests and hobbies as a result of joining the Company. Personal fitness and participation in the Company's various leisure and sports clubs and annual team competitions are also encouraged.

Cozy Rest Space

- We have established a "people-oriented" open space. We provide a variety of welfare facilities, with pressure-relieving channels set up at different levels to adjust their body and mind.
- The area is equipped with bicycles and billiards to encourage colleagues to exercise more; dart machine and entertainment facilities are installed to promote communication among colleagues in a relaxed way; massage chairs are available to relax the body and mind and relieve stress; and free of charge; a snack and drink area is also set up for replenishing energy at any time.

Flywheel	Table Tennis	Dart Machine	Massage Chair	Snacks and Beverages
				

Sports and Fitness Incentive Program

- We value the leisure life of our colleagues after work and encourage them to form the habit of regular exercise. We provide each colleague with an "exercise subsidy" of NTD 6,000 every year.
- Types of sports that can be subsidized according to personal preferences: running, cycling, fitness, yoga, aerobics, dancing, baseball, softball, basketball, table tennis, volleyball, badminton, tennis, football, golf, swimming, skating, inline volleyball, Taekwondo, karate, and judo.
- A total of 183 people applied in 2023.

7. Corporate Citizenship

7-1 Promotion of MicroLED knowledge

Promotion of MicroLED knowledge

As one of the few companies that owns and integrates MicroLED display technology, we have a strong R&D team for innovation and development in all technical aspects, and continue to provide products and solutions for diverse application fields via technological innovation. Through speeches at exhibitions, open company visits, and lectures, we continue to promote knowledge in the field of MicroLED, prompt industry development, and cultivate talent. In 2023, we held the first MicroLED Forum to promote the exchange of experts in different fields inside and outside the industry. Through campus speeches and corporate visits, we communicate with students, and we participate in the co-organization of professional learning programs such as the International Studies Program and the Light Generation Experimental Technology Preparatory School to cultivate future talent in the industry. The cumulative impact has reached more than 1,300 people.

	Activity Type	Session	Number of people reached
Forum Hosting	PlayNitride 2023 MicroLED Technology Forum	1	200-220 people
Exhibition Speech	Photnics West 2023: Performance of MicroLED chip and display for different applications	3	500-600 people
	Touch Taiwan 2023: Mass production and innovative product applications of MicroLED MicroLED innovative display new applications 0.49-inch 4536PPI full color MicroLED display	3	100-180 people
	SID Display Week: CEO Forum, Symposium	2	100-200 people
	SEMICON Taiwan: Heterogeneous Integration Global Summit 2023	1	40-80 people
Industry-academia collaboration	Light Generation Experimental Technology Preparatory School	1	80-100 people
	First-Year ASI Courses	1	39 people
	Campus speech or student enterprise visit	4	90-120 people



1st MicroLED Forum

In September 2023, the Company held the first "PlayNitride 2023 MicroLED Technology Forum". This was also the first technology forum focusing on MicroLED. Participants came from different fields of the MicroLED value chain, including suppliers, customers, shareholders, investment corporations, and associations. A total of nearly 60 units and about 200 experts from the academic community participated.

Although MicroLED displays have various excellent product characteristics, the commercial development of an emerging technology depends on the development and construction of the overall industrial ecosystem. Just like when Edison invented the light bulb, in the context of time and space without power infrastructure, to sell light bulbs, it is necessary to build a power plant first. Currently, the comprehensive consideration of market demand, capacity expansion, and cost reduction in the industry development is a critical period for building an ecosystem. Taiwan has a solid foundation in the semiconductor, LED, LCD, and automation industries. PlayNitride hopes to build a consensus with upstream and downstream partners and expand resource investment through this forum to significantly reduce the penetration rate of MicroLED in various application fields. Through innovative business cooperation models, and with the support of the capital market and academic institutions, we can accelerate the mass and wide introduction of MicroLED into the consumer market to prevent market demand from shifting to other display technologies due to slow development.

The forum invited a number of MicroLED industry experts to share the development trend of the MicroLED industry from various perspectives, from the upstream, midstream and downstream of MicroLED to market applications, including the semiconductor industry, panel industry, electronics and electrical machinery industries. AUO and Innolux, the two major panel makers in Taiwan presented their new expectations for MicroLED display applications, and international consumer electronics manufacturers such as Samsung Electronics and Google gave technical presentations.

MicroLED is a new technology. How to apply this new technology to applications that did not exist in the past but may be important in the future is the common expectation and goal of all stakeholders. As the Company understands that the next two to three years will be a critical moment for the development of the MicroLED industry, we hope to hold technical forums to facilitate industry exchanges and work with upstream and downstream partners to develop MicroLED technology into the future mainstream display technology and usher in a new era of display technology.



Industry-academia Exchange

In 2023, we were invited to co-organize the "Light Generation Experimental Technology Preparatory School" to lecture on the development of MicroLED display technology, the application and development of MicroLED technology in the laser field, and share the practical application of related technologies in the industry. This course is organized by the National Central University and has been held for the 4th year. This course covers the skills required for advanced optics research, including laser principles, optical components, optoelectronic instruments, and many other experimental knowledge and techniques to prepare participants for advanced optics research. 80-100 college students or researchers participated in the course.

The Advanced Studies Institutes (ASI) international study group, with the goal of cultivating the next generation of display technology talent in the U.S., visited Taiwan in 2023. Hosted by the National Taipei University of Technology, the group was specially arranged to visit PlayNitride, where they explored various innovative MicroLED display applications, fostering international academic exchange. The delegation was also impressed by the transparent displays and the ultra-high-resolution full-color micro-display technology applied to the Metaverse at the academic exchange. The ASI International Program is subsidized by the U.S. National Science Foundation (NSF). Graduate students from various U.S. universities in related fields came to Taiwan to study display technology together with 39 teachers and students from National Taipei University of Technology and National Yang Ming Chiao Tung University, enhancing professional knowledge and making industry contacts.

In order to strengthen the connection between industry and academia, and help students understand the current needs and status of the industry, we were invited to give lectures at schools or accepted applications for visits by relevant departments of colleges and universities for more than 25 times from 2020 to 2023. In addition to technology, the exhibits and the environment were introduced to allow the students to have a deeper understanding of PlayNitride's corporate culture, workplace environment, and company development, as well as to better understand the current development and application of MicroLED.



Student Feedback

"Through this visit, I have a better understanding of the development of the industry, and I have more **ideas for my future career**, enabling me to plan ahead."

Student Feedback

"The demo of the company products is cool! I have never been exposed to similar things before, and I have learned a lot of new knowledge in this field. The communication with the supervisor is also fruitful."

Student Feedback

"Seeing the latest display technology, especially the superior performance and broad application prospects of **MicroLED**, has given me a deeper understanding of this field. This visit has made me **more interested in display technology**."

7-2 Social Engagement

PlayNitride Flea Market & Auction for Charity

At the end of the year, we held a 3-day event of "PlayNitride Flea Market & Auction for Charity" in the spirit of exchanging goodies and enthusiastic participation in public welfare. The conference room was used as a flea market for employees and the Company to donate second-hand goods. The charity sale promoted resource circulation and enabled unused goods to find new owners. Our employees responded with enthusiasm and sold all items from the charity sale. The proceeds of NTD 30,335 were donated to the Miaoli Taiwan Fund for Children and Families in Zhunan Township, Miaoli County in the name of the employees themselves.



Charity Sponsorship

To show our support for education and the arts, we made a donation of NTD 50,000 to sponsor the choir of Jiaying Elementary School in Jianshi Township, Hsinchu County. By doing this, we hope that the pure and bright voices of children of indigenous peoples will be heard on more stages and fulfill their dreams.



Beach Cleanup

We called on our employees to participate in the "2023 Hsinchu County Tribute to the Sea - Autumn Beach Cleanup" organized by Hsinchu County. Employees and family members enthusiastically participated in the activity. At Hongshulin beach in Xinfeng, all adults and children cleaned up the waste on the beach and to gain a deep understanding of the necessity of environmental protection and marine sustainability, thereby influencing those around us to work together to serve the ocean and love the Earth together. A total of 41 employees and their family members participated in the beach cleanup.



Blood Drive

In collaboration with the Hsinchu County Blood Donation Center, we launched a half-day blood drive, inviting colleagues to donate blood and contribute to society. A total of 18 bags of blood were raised during the blood drive.



Appendix: GRI Standards Index

Statement of Use	PlayNitride Display Co., Ltd. has reported the information quoted in the GRI content index from January 1 to December 31, 2023 with reference to the GRI Standards.				
GRI 1 Used	GRI 1: Foundation 2021				
GRI 2: General Disclosures 2021					
Indicator	Disclosure Item		Corresponding Chapter of the Report	Page	Description
The organization and its reporting practices					
2-1	Organizational details	1-1	Company Profile	5	
2-2	Entities included in the organization's sustainability reporting	About the Report		4	
2-3	Reporting period, frequency and contact point	About the Report		4	
2-4	Contact information	None		-	
2-5	External assurance	Not externally assured		-	
Activities and workers					
2-6	Activities, value chain and other business relationships	1-3	Value Chain	10	
2-7	Employees	6-1	Talent Attraction and Retention	78	
2-8	Workers who are not employees	6-1	Talent Attraction and Retention	78	
Governance					
2-9	Governance structure and composition	4-1	Corporate Governance	49	
2-10	Nomination and selection of the highest governance body	4-1	Corporate Governance	49	
2-11	Chair of the highest governance body	4-1	Corporate Governance	49	
2-12	Role of the highest governance body in overseeing the management of impacts	4-1	Corporate Governance	49	
2-13	Delegation of responsibility for managing impacts	2-1 2-6	Sustainability Policy and Operations Management Approach to Material Sustainability Issues	14 25-33	
2-14	Role of the highest governance body in sustainability reporting	4-1	Corporate Governance	49	
2-15	Conflicts of Interest	4-1	Corporate Governance	49	
2-16	Communication of Key Material Incidents	4-1	Corporate Governance	49	
2-17	Collective knowledge of the highest governance body	4-1	Corporate Governance	49	
2-18	Evaluation of the performance of the highest governance body	4-1	Corporate Governance	49	
2-19	Remuneration policies	4-1	Corporate Governance	49	
2-20	Process to determine remuneration	4-1	Corporate Governance	49	
2-21	Annual total compensation ratio	Not disclosed for the time being due to salary confidentiality requirements			
Strategy, policies and practices					
2-22	Statement on sustainable development strategy		Message from the Operator	1	
2-23	Policy commitments	2-6	Management Approach to Material Sustainability Issues	25-33	
2-24	Embedding policy commitments	2-6	Management Approach to Material Sustainability Issues	25-33	
2-25	Processes to remediate negative impacts	2-6	Management Approach to Material Sustainability Issues	25-33	

Indicator	Disclosure Item	Corresponding Chapter of the Report		Page	Description
2-26	Mechanisms for seeking advice and raising concerns	2-6	Management Approach to Material Sustainability Issues	25-33	
2-27	Legal compliance	4-2	Ethical Corporate Management	55	
2-28	Membership associations	1-4	Participation in Public Associations	11	
Stakeholder engagement					
2-29	Approach to stakeholder engagement	2-3	Identification of key stakeholders	19	
2-30	Collective bargaining agreements	No collective bargaining agreements signed		-	

GRI 3: Material Topics 2021

Indicator	Disclosure Item	Corresponding Chapter of the Report		Page	Description
3-1	Process to determine material topics	2-4	Identification of Material Sustainability Topics	21	
3-2	List of material topics	2-5	Corresponding Disclosure Indicators for Material Sustainability Issues	23	
3-3	Material topic management	2-6	Management Approach to Material Sustainability Issues	25-33	

GRI 202 Market Presence 2016

202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Male: 1.14, female: 1.14 The basic salary is NTD 26,400 under the 2023 Labor Standards Act.			
202-2	Proportion of senior management hired from the local community	100%	-		

GRI 205: Anti-corruption 2016

205-2	Communication and training about anti-corruption policies and procedures	4-2	Ethical Corporate Management	55	
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GRI 305: Emissions 2016

305-1	Direct (Scope 1) GHG emissions	5-2	GHG Emission Management	68	
305-2	Energy indirect (Scope 2) GHG emissions	5-2	GHG Emission Management	68	
305-4	GHG emissions intensity	5-2	GHG Emission Management	68	
305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emission	5-6	Emissions Management	77	

GRI 401: Employment 2016

401-1	New employee hires and employee turnover	6-1	Talent Attraction and Retention	78	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	6-1	Talent Attraction and Retention	78	

GRI 402: Labor/Management Relations 2016

402-1	Minimum notice periods regarding operational changes	The Company's major operational change notice periods are handled in accordance with local laws.			
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GRI 403 Occupational Health and Safety 2018

403-1	Occupational Safety and Health Management System	6-4	Employee Health and Safety	90	
403-2	Hazard identification, risk assessment, and incident investigation	6-4	Employee Health and Safety	90	
403-3	Occupational Health Service	6-4	Employee Health and Safety	90	
403-4	Worker participation, consultation, and communication on occupational health and safety	6-4	Employee Health and Safety	90	
403-5	Worker training on occupational health and safety	6-4	Employee Health and Safety	90	
403-6	Promotion of worker health	6-5	Health Promotion	96	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	6-4	Employee Health and Safety	90	

Indicator	Disclosure Item	Corresponding Chapter of the Report		Page	Description
403-8	Workers covered by an occupational health and safety management system	6-4	Employee Health and Safety	90	
403-9	Occupational injury	6-4	Employee Health and Safety	90	
GRI 406: Non-discrimination 2016					
406-1	Incidents of discrimination and corrective actions taken	No related incidents occurred in 2023		-	
GRI 416 Customer Health and Safety 2016					
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	No related incidents occurred in 2023		-	
GRI 417: Marketing and Labeling 2016					
417-1	Requirements for product and service information and labeling	No related incidents occurred in 2023		-	

Voluntary GRI Topics and Indicators

Indicator	Disclosure Item	Corresponding Chapter of the Report		Page	Description
GRI 201 Economic Performance 2016					
201-1	Direct economic value generated and distributed	4-3	Operational Performance	57	
GRI 302 Energy 2016					
302-1	Energy consumption within the organization	5-3	Energy Management	72	
302-3	Energy intensity	5-3	Energy Management	72	
302-4	Reduction of energy consumption	5-3	Energy Management	72	
GRI 303: Water and Effluents 2018					
303-3	Water withdrawal	5-4	Water Resource Management	74	
GRI 306 Waste 2020					
306-3	Waste generated	5-5	Waste Management	75	
306-4	Waste diverted from disposal	5-5	Waste Management	75	
306-5	Waste directed to disposal	5-5	Waste Management	75	
GRI 405 Diversity and Equal Opportunity 2016					
405-1	Diversity of governance bodies and employees	4-1	Corporate Governance	49	
		6-1	Talent Attraction and Retention	78	
405-2	Percentage of basic salary and remuneration of females to males	6-1	Talent Attraction and Retention	78	

Appendix: Certificate Information List

Standard Name	First Obtained	Certificate Validity Period
ISO 9001:2015 Quality Management System	2019	2025/11/15
ISO 14001:2015 Environmental Management System	2020	2026/5/11
ISO 45001:2018 Safety and Health Management System	2020	2026/5/11

Appendix: SASB Standards Index

Topic of Disclosure	Indicator Code	Accounting Metric	Disclosure Content	Corresponding Section
Industry Technology and Communication Industry Semiconductors				
GHG Emissions	TC-SC-110a.1	Disclose the following GHG emissions information: (1) Gross global GHG emissions (Scope 1) (2) Total emissions from perfluorinated compounds (PFCs)	(1) 1,290.93 tonnes CO ₂ e (2) 628.53 tonnes CO ₂ e	5-2 GHG Emission Management
	TC-SC-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Please refer to 5-2 GHG Emission Management	
Energy Management in Manufacturing	TC-SC-130a.1	Disclosure of the following information on energy consumption: (1) Total energy consumed (including fuel and electricity) (2) Percentage grid electricity (3) Percentage renewables	(1) 32,861.86 GJ (2) 82.19% (3) 0%	5-3 Energy Management
Water Resource Management	TC-SC-140a.1	Disclosure of the following water withdrawal information: (1) Total water withdrawn, and percentage withdrawn from regions with water stress (high or extremely high) (2) Total water consumed, and percentage consumed from regions with water stress (high or extremely high)	PlayNitride's production facility is located in Zhunan Industrial Park. The region is not considered a high or high-risk area according to the WRI Aqueduct Water Risk Atlas. (1) Total water withdrawal: 16,074 thousand cubic meters (m ³), 0% in the water stress zone. (2) Total water consumption: Water consumption from evaporation, transpiration or consumption not related to manufacturing.	5-4 Water Resource Management
Waste Management	TC-SC-150a.1	Amount of hazardous waste from manufacturing, and percentage recycled.	(1) Weight of hazardous waste: 94.18 tonnes (2) Hazardous waste recycling ratio: 4.71%	5-5 Waste Management

Topic of Disclosure	Indicator Code	Accounting Metric	Disclosure Content	Corresponding Section
Employee Health and Safety	TC-SC-320a.1	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards.	The ISO 45001:2018 Occupational Safety Management System is employed by PlayNitride for risk identification and assessment, the planning and execution of management proposals, regular and random safety inspections, as well as change management. Continuous improvement mechanisms are used to reduce the risk of employee exposure to harmful environments.	6-4 Employee Health and Safety
	TC-SC-320a.2	Total amount of monetary losses as a result of legal proceedings associated with employee safety and health violations	There were no employee health and safety violations that led to PlayNitride being penalized by the competent authority in 2023.	
Global Talent Attraction and Retention and Management	TC-SC-330a.1	Percentage of employees that are (1) foreign nationals, and (2) located offshore.	(1) In 2023, there were 10 foreign employees and these accounted for 2.25% of all employees. (2) Ratio of expatriate employees: 0% (Currently, employees are mainly located in Zhunan Science Park, Taipei Office, and Tainan Office as the main operating base. There are no expats overseas, and the US office hires local talent).	6-1 Talent Attraction and Retention
Product Lifecycle Management	TC-SC-410a.1	Percentage of products by revenue that contain IEC 62474-declarable substances	0%	3-4 Hazardous Substance Management
	TC-SC-410a.2	Energy efficiency at the overall system level of the processor: (1) Servers, (2) Desktops, and (3) Laptops	Not applicable as we are a company that provides R&D, manufacturing, and sales of nitride semiconductor materials for related applications, it is not applicable to the products covered by this indicator.	
Materials Sourcing	TC-SC-440a.1	Description of the management of risks associated with the use of critical materials	Monthly evaluations and annual audits of suppliers are conducted by PlayNitride to obtain a full picture of current supplier status and reduce doubts about risky procurement. Definition of key suppliers: All direct materials and outsourced processing suppliers are key suppliers.	3-5 Supply Chain Management
TC-SC-520a.1 Intellectual property protection and competitive behavior	TC-SC-520a.1	Total monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	There were no incidents relating to violation of intellectual property protection and competitive behavior regulations at PlayNitride in 2023.	3-3 Intellectual Property Management
	Indicator Code	Activity Indicator	Disclosure Content	Corresponding Section
	TC-SC-000.A	Total production	Pixel chip substrate COC: 9,314 pcs	1-2 Products and Services
	TC-SC-000.B	Percentage of production from owned facilities	100%	

Appendix: TWSE Sustainability Disclosure Indicators - Semiconductor Industry

No.	Indicator	Indicator Type	Annual Disclosure Status	Unit
1.	(1) Total energy consumption (2) Percentage of purchased electricity (3) Renewable energy utilization rate	Quantification	(1) 32,861.86 GJ (2) 82.19% (3) 0%	Gigajoules (GJ), Percentage (%)
2	(1) Total water withdrawal (2) Total water consumption	Quantification	(1) Total water withdrawal: 16,074m ³ (2) Total water consumption: Water consumption from evaporation, transpiration or consumption not related to manufacturing	Thousand cubic meters (m ²)
3	Hazardous waste generated (1) Weight and (2) Recycling percentage	Quantification	(1) Weight of hazardous waste: 94.18 tonnes (2) Hazardous waste recycling ratio: 4.71%	Tonnes (t), Percentage (%)
4	Describe the type, number and rate of occupational accidents	Quantification	(1) In 2023, there was one case of disabling injury among employees of PlayNitride. The accident occurred when the employee walking through the emergency exit hurt his foot by the person opening the door. Clear signs were subsequently posted to remind employees to pay attention. (2) Number of recordable incidents ^{Note: 1} (3) Total recordable incident rate (TRIR) ^{Note: 0.25}	Percentage (%), Quantity
5	Disclosure of product life cycle management: (1) Weight and (2) Recycling percentage of end-of-life products and electronic waste	Quantification	Not applicable as we are not a manufacturer of end products.	Tonnes (t), Percentage (%)
6	Description of risk management associated with the use of critical materials	Qualitative Description	Monthly evaluations and annual audits of suppliers are conducted by PlayNitride to obtain a full picture of current supplier status and reduce doubts about risky procurement. Definition of key suppliers: All direct materials and outsourced processing suppliers are key suppliers.	Not applicable
7	Total pecuniary losses caused by legal proceedings related to the anti-competitive practices ordinance	Quantification	There were no incidents relating to violation of intellectual property protection and competitive behavior regulations at PlayNitride in 2023.	Reporting currency
8	Production volume of major products by product category	Quantification	Pixel chip substrate COC: 9,314 pcs	Varies by product type

Note: "Number of recordable incidents" refers to the number of injured persons (those with a loss of working hours of more than 8 hours), "Total recordable incident rate (TRIR)" = Number of recordable incidents x 200,000 ÷ Annual working hours

Appendix: GHG Inventory and Assurance Status

We are a company with a "capital of less than NTD 5 billion". According to the regulations of the Sustainable Development Roadmap for Listed Companies, we have not yet reached the time frame for mandatory disclosure, and disclosure is voluntary.

The information on GHG emissions in this report is based on the inventory conducted in accordance with ISO 14064-1:2018. The boundary of the inventory includes Scope 1, Scope 2, and Scope 3 items (some items in Categories 1, 2, and Categories 3-6). The organizational boundaries and the scope of assurance are consistent with the scope disclosed in this report.

GHG emissions (Scope 1 and Scope 2; Category 1 and Category 2)

Scope 1 (Category 1)				
Scope of Emissions	Total Emissions (tonnes CO ₂ e)	Intensity (tonnes CO ₂ e/NTD million)	Assurance Agency	Description of Assurance
Taiwan	1,290.93	1.3690	Note 1	The verification opinion is attached
Scope 2 (Category 2)				
Scope of Emissions	Total Emissions (tonnes CO ₂ e)	Intensity (tonnes CO ₂ e/NTD million)	Assurance Agency	Description of Assurance
Taiwan	3,780.51	4.0090	Note 1	The verification opinion is attached

GHG emissions (Scope 3; Categories 3 - 6)

Category 3 (Categories 3 - 6)			
Scope of Emissions	Total Emissions (tonnes CO ₂ e)	Assurance Agency	Description of Assurance
Total for Scope 3			
3-1 Goods and services purchased (Category 4.1)	113.99	Note 1	The verification opinion is attached
3-2 Capital goods (Category 4.2)			
3-3 Fuel and energy related activities not in Scope 1 or 2 (Category 4.1)	743.12	Note 1	The verification opinion is attached
3-4 Upstream transportation and distribution (Category 3.1)	3.73	Note 1	The verification opinion is attached
3-5 Waste generated from operations (Category 4.3)	83.33	Note 1	The verification opinion is attached
3-6 Business trips (Category 3.5)	4.78	Note 1	The verification opinion is attached
3-7 Employee commuting (Category 3.3)			
3-8 Upstream leased production (Category 4.4)			
3-9 Downstream transportation and distribution (Category 3.2)			

Note 1: GHG emissions verification organization: Measurement Technology Development Center, Research Institute of Industrial Technology

Appendix: United Nations Sustainable Development Goals (SDGs)

SDGs		Corresponding Section
Goal 3. Good Health and Well-being	<p>3.4) By 2030, reduce non-communicable disease mortality through prevention and promote mental health.</p> <p>3.7) By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information & education</p>	<p>Friendly Workplace 6-4 Employee Health and Safety 6-5 Health Promotion</p>
Goal 4. Quality Education	<p>4.4) By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.</p> <p>4.7) By 2030, ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development.</p>	<p>Friendly Workplace 6-2 Talent Development 7-2 Social Engagement</p>
Goal 5. Gender Equality	<p>5.1) End all forms of discrimination against women.</p> <p>5.5) Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.</p>	<p>Friendly Workplace 6-1 Talent Attraction and Retention 6-3 Human Rights Management</p>
Goal 8. Decent Work and Economic Growth	<p>8.2) Achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors.</p> <p>8.5) By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.</p> <p>8.8) Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women, and those in precarious employment.</p>	<p>Sustainable Product Innovation 3-1 Product Advantages 3-2 Technical Advantages Friendly Workplace 6-1 Talent Attraction and Retention 6-4 Employee Health and Safety</p>
Goal 12. Responsible consumption and production	<p>12.5) By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse.</p> <p>12.6) Adopt sustainable practices and integrate sustainability information into the Company's reporting.</p>	<p>Sustainable Product Innovation 3-2 Technical Advantages Environmental Sustainability 5-4 Water Resource Management 5-5 Waste Management</p>
Goal 13. Climate Action	<p>13.2) Integrate climate change measures into national policies, strategies and planning.</p> <p>13.3) Improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning.</p>	<p>Corporate Governance 5-1 Climate Strategy Environmental Sustainability 5-2 GHG Emission Management</p>



 PLAYNITRIDE