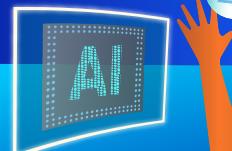
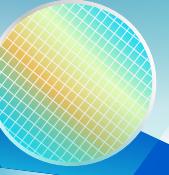




NANYA

NANYA  
LPDDR5

NANYA  
DDR5



2023 SUSTAINABILITY REPORT

NANYA

DJSI  
1<sup>st</sup>

NANYA

CDP  
DISCLOSURE LEADERSHIP ACTION  
A LIST  
2023

CLIMATE WATER

# Create a Sustainable Future Together



## Innovation

Breakthrough thinking unleashes new possibilities



## Collaboration

Connect across boundaries

We strive to bridge industry, government, academia and local partners with leadership in innovation to amplify the impact of sustainability

Drive sustainable changes with joint accountability

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# Message from the President

Fellow Nanya Stakeholders,

The year 2023 presented us with tough challenges. Geopolitical uncertainties, including the China-US trade conflicts, and wars in the middle east and Ukraine, impacted the global market along with the slower-than-expected economic recovery. DRAM makers faced financial difficulties and cut production during market downturn.

At the same time, 2023 also positioned us in the early innings of the most exciting possibilities. The power of AI unleashed thrilling prospects of the DRAM industry. The robust demand for higher performance created by AI computing accelerated the development of and migration to more advanced products, including DDR5 and HBM.

Nanya responded to the challenges and opportunities with determined investment in R&D while persisting with our dedication to climate change mitigation and social responsibilities. Bottoming out from 2023, Nanya continues to advance with strengthened resilience to create sustainable values for stakeholders as the Best DRAM Partner for the Smart Generation.

## Innovation

DRAM, as the key to a smarter generation, is a critical enabler for a greener future with even higher performance. At Nanya, innovation lies at the heart of our operation. Our 16Gb DDR5 and 8Gb DDR4 products powered by 2nd generation 10nm-class process technology (1B) will enter mass production in the second half of 2024. The construction of the new fab, invested with NT\$ 300 billion, progressed as scheduled. Once completed, it is expected to create more than 3,000 job opportunities and lead the leap of our 10nm-class technology development.

As of 2023, more than 6,800 patents were granted, 110 AI applications were developed for smart manufacturing and 450 AI-specialised talents were trained. In addition, we encouraged creative ideas with competitions and incentives for innovation. In 2023, we were proud to be selected as the Top 100 Innovator by Clarivate.

## Green Manufacturing

Nanya has set a SBTi-approved target to reduce 25% of GHG emissions by 2030, and aims to achieve the goal from two ends: product development and the manufacturing process. We incorporate the elements of green product from the start of the lifecycle and the whole process of product development is supervised by the Green Product Promotion Committee. In 2023, high energy efficiency products accounted for around 90% of our revenue and saved our customers over 514 million kWh of electricity.

Our products are manufactured in fabs certified as green factories by the government. In 2023, we adopted the Alliance for Water Stewardship (AWS) standards to optimise water management. The carbon footprint of the production process was monitored through digital systems in real time. Regarding energy consumption, we unrolled 36 projects to save around 5 million kWh. We used around 24 million kWh renewable energy and plan to purchase 250 million kWh of renewable energy with a 10-year contract.

## Talent Engagement

In response to the increasing demand for talents, Nanya started from strengthening the strategic partnerships with universities to diversify our pipeline. For example, we offered lectures for students of Ming Chi University to equip prospect talents with integrated knowledge of ESG and semiconductor.

Nanya is committed to foster an environment championing diversity, equity and inclusion (DEI) with action plans covering talent development, employee benefits, social volunteering and human rights protection. For example, the We+ Project blended the concepts of DEI into trainings of our fellow colleagues.

## Supply Chain Management

We believe that collective efforts create larger impacts. In 2023, Nanya unrolled a decarbonisation project involving 10 suppliers with the government's incentive. Aiming to reduce CO<sub>2</sub>e by 6,300 tons in 2 years, the project is expected to calculate carbon footprints of 15 products, set up digital verification and online carbon assessment platforms, and implement solutions for decarbonisation.

We endeavour to bridge the communication of different parties for shared value. We regularly organise supply chain seminars, which featured biodiversity in 2023, to initiate dialogues between supply chain partners and experts. We also spare no efforts in supporting initiatives of industry associations. As the co-founder of the Semiconductor Climate Consortium of SEMI, we look forward to facilitating more engagement between industry partners.

## Community Involvement

Nanya supports volunteer engagement to give back to the communities. In 2023, we have donated to the underserved communities in Taishan District, and hosted a cycling fundraiser for the Saint Mary's Hospital in Taitung. As a part of the New Taipei City Government's distance education project, we donated the devices for distance learning to empower elementary school students in remote communities with quality education. In 2023, more than ten thousand people from Nanya's employees, academia partners, and suppliers created positive social and environmental changes through our projects.

## Recognitions

We are proud to be recognised by prominent entities around the globe:

- Included in the Dow Jones Sustainability World Index and the Emerging Markets Index (Semiconductors and Semiconductor Equipment Category)
- Ranked the first among memory companies in the S&P Global Corporate Sustainability Assessment (CSA)
- Selected into 'A' lists by CDP in both Climate Change & Water Security
- Awarded the Top 10 Taiwanese Sustainable Manufacturing Companies by the Taiwan Institute for Sustainable Energy
- Received the Excellence in Corporate Social Responsibility Award by CommonWealth Magazine
- Ranked top 5% in the 10<sup>th</sup> Corporate Governance Evaluation by Taiwan Stock Exchange Corporation

## Future Prospects

The consolidation of sustainability standards leads to a more rigorous examination of ESG performance. At the same time, companies must tackle the complex challenges of geopolitical conflicts and economic headwinds.

Against this background, Nanya responds with three strategic pillars: Creating shared value, Promoting mutual prosperity, and Realising sustainable operation. We look forward to continuing the pursuit of a sustainable future with all our partners around the globe.

President



# Sustainability Performance

## The Best Partner for Our Customer

- 25.3%

R&D expenses accounted for 25.3% of revenue and R&D personnel accounted for 28.9% of employees, showing Nanya's emphasis on scientific and technological research and development.

**380 million yuan**

Benefits generated by 110 AI applications in a year

**953 items**

Number of patents granted in 2023, an increase of 141 over 2022

## An Attractive Employer for Professional Talents

- 878 people

Youth empowerment has expanded semiconductor talents and has cultivated a total of 878 semiconductor talents since 2021, an increase of 64% from the previous year.

**178,000**

Employees who have completed training (No. of participants), an increase of 8.5% compared with 2022.

**4.58%**

The voluntary turnover rate of 4.58% was 4.22% lower than in 2022.

## A Practitioner of Green Technology

- SBT

The reduction of scope 1+2 is 8.2% and the reduction of scope 3 is 20.4%, which is better than the annual reduction target of SBT

**Seven-fold increase in renewable energy targets**

Nanya aims to use 25% renewable energy in 2030, a seven-fold increase compared to the 3.2% in 2023, and better than the three-fold goal set in the Global Renewables and Energy Efficiency Pledge of COP 28.

**68,565 MWh**

Cumulative energy saved with energy conservation measures from 2017 to 2023

## A Promoter of Shared Value

- 100%

SAQ completion rate of key raw material suppliers

**97.05 million**

The cumulative amount of refunds to migrant workers of contractors as of 2023 was NT\$97.05 million to 3,781 people.

**203 contractors**

203 RMI-approved smelters identified in supply chain survey

## An Active Participant in Giving Back to Society

- 2,929.5 hours

The number of hours invested by Nanya in social engagement increased by 18% compared to 2022

**100 people**

Nanya Volunteer Team established during the pandemic grew to over 100 members in two years

## ESG education blueprint

Created an education blueprint that integrates ESG principles into one's core values, which covers from elementary school to university.

## A Trustworthy Company

- Risk management optimization

Obtained a declaration of compliance with ISO 31000 guidelines and principles

**53 suppliers**

Established an information security audit system for key suppliers, and completed risk assessments and coaching improvements for 53 suppliers

**TOP 5%**

Top 5% in the 10th Corporate Governance Evaluation of TWSE listed companies

# Recognition and Awards

## DJSI

- Selected into the DJSI World Index and Emerging Markets Index
- Ranked 1st in the global memory industry

Member of  
**Dow Jones  
Sustainability Indices**

Powered by the S&P Global CSA

## S&P Global

- Top 10 % S&P Global ESG Score



## CDP

- Double A List in CDP's Climate Change & Water Security



## Sustainalytics

- ESG Raking 16.6 (Low risk)



## ISS ESG

- Prime Status



## MSCI

- MSCI All Country World Index (ACWI)



## Clarivate

- Top 100 Global Innovator 2023



## Top 10 TCSA Model

- Platinum Award in the Corporate Sustainability Report category
- Eight Leadership Awards of individual performances:
  - > Climate
  - > Water Resource Management
  - > Sustainable Supply Chain
  - > Social Inclusion
  - > Information Security
  - > Growth through Innovation
  - > Transparency and Integrity
  - > Talent Development



## AWS certification

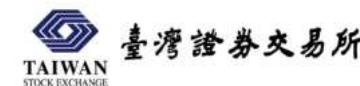
(Alliancefor Water Stewardship Standard)

- Platinum Level Certificate



## Corporate Governance

- Top 5% in the 10th Corporate Governance Evaluation
- Top 10% in listed company with a market value of more than 100 billion dollars



## National Quality Award

- Outstanding Management Award in the 27th National Quality Award



## Ministry of Environment Resource Recycling Outstanding Enterprise

- Silver Award in Resource Recycling Group



## CommonWealth Magazine

- Corporate Citizen Award of Commonwealth magazine



## Golden Eagle Micro Film Award

- Sustainable Micro Film - Bronze Award

# Feature Stories

- |   |    |
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# Innovation Improvement, Patent Portfolio and Outstanding Team

Continuous innovation and enhancement of R&D capabilities are the key to corporate sustainability. Nanya Technology Corporation is committed to improving process efficiency and production capacity, and is developing technical capabilities, optimizing the R&D process, and reserving innovative talent to ensure competitive advantages. Nanya cultivated an "Innovative Intellectual Property Rights Team" to protect and utilize R&D results, and actively establish intellectual property rights on a global scale. In addition, the "Outstanding Talent" project launched an R&D innovation competition within the Company to encourage employees to collaborate in making cross-departmental proposals for innovation, strengthening Nanya's innovation foundation.

## • Innovative Intellectual Property Rights, Patent Portfolio

In order to effectively respond to technology and market competition, Nanya actively integrates R&D resources and has created a technical and strategic patent portfolio through a planned approach to meet strategic needs on the quantity and quality of patents.



### Strategic patent portfolio

Support the Company's business strategy and market demand by applying for patents in the major technical field for a target, and the scope covers market trends, competitors' technologies or products, and emerging technology fields.



### Technical patent portfolio

Establishes Nanya's technological barrier by improving the quantity, quality, cooperation, application, and citation of patents, protecting the Company's R&D capabilities while innovating to prevent infringement incidents.

Based on the implementation guidelines above, Nanya received approvals for 953 patents in 2023, and has obtained more than 6,800 patents globally. Nanya has a complete intellectual property rights management system and obtained the Taiwan Intellectual Property Management System (TIPS) certification.

## Nanya Patent Portfolio Management Strategy

### Technical

- Patent use
- Quality of patents
- Patent cooperation
- Quantity of patents
- Citation of patents

Establish a technology barrier to prevent competitors from infringement

Continue to innovate and enhance core R&D capabilities

- Increase investment in R&D for continued innovation
- Establish a patent strategy
- Encourage patent filing
- Attach importance to both patent quality and quantity
- Complete patent management system

### Strategic

- Field of patent application
- Market development trends
- Products and technologies
- Emerging technology fields

Business value and competitive advantage

Footprints of success

Globalization

## Patent results in recent years



—●— Number of patents approved    —◆— R&D and innovation expenses/NT\$10 million

## • Innovation and cultivation of outstanding teams

Nanya has launched the "Outstanding Team Competition" project in 2005 to simulate the innovation energy within the Company, inviting employees to form teams across at least three departments, and compete in teams based on innovation, benefits of proposal, and the core value of cooperation. An average of about 15 teams have participated in the competition every year since 2015. Besides creating an atmosphere of innovation in the Company, business operating procedures are optimized through proposals by the teams, achieving the purpose of driving sustainable development through innovation. Highlights of the winning Team's proposal in 2023 are as follows:

### 1. Outstanding team

Thinking outside the box of traditional machine design thinking, the latest AI method is used to replace the hardware detection mechanism, thereby replacing the past overhead operations and reducing the ineffective waste of workers, achieving the goal of lean production, greatly improving factory safety, and complying with the spirit of improvement opportunities in ISO45001 environmental safety and health.

### 2. Champion team

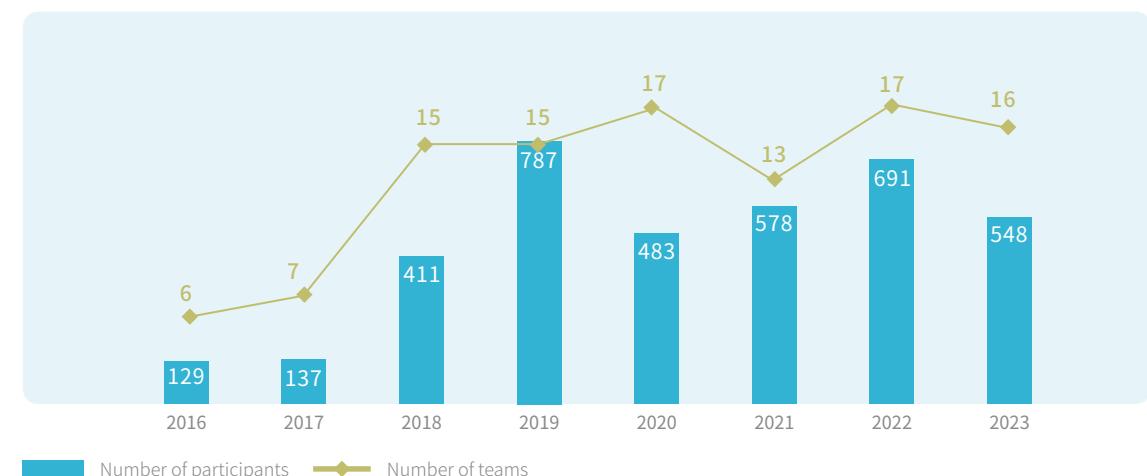
Developed a new experimental formula that increases the yield of a specific process by 3.6%, and used new AI recognition and analysis methods to replace traditional methods, allowing development data to be accurately analyzed, correcting the direction of experiments and reducing the cost of scrapping. This is estimated to save NT\$1,554 million annually.

### 3. Finalist team

After Nanya's three R&D generations, a total of 135 optical measurement models were developed in response to different process structures, providing rapid process monitoring and optimization, shortening the process development process, rapidly meeting R&D measurement needs, accurate monitoring the variance in process experiments, and achieving lossless preservation of the subsequent value of wafers.

Nanya was selected for the first time into the "Top 100 Global Innovators" announced by Clarivate in 2023. This honor represents that Nanya's performance in technological innovation and the quantity and quality of patents resulting from its strategy has been recognized by international evaluation units. We will continue to maintain our R&D spirit to become the best DRAM partner for smart world.

### Participation of outstanding teams in 2016-2023



The innovation proposals of the winning teams are posted in the Company for employees to read.



# Obtained AWS certification, moving towards the goal of water resource sustainability

In response to the severe challenge of climate change, Nanya Technology Corporation (Nanya) adopted the world's only sustainable water management standard (Alliance for Water Stewardship Standard, AWS) in 2023 to implement water resource sustainability management. Nanya passed the evaluation in 2023 and was recognized with the highest level in the AWS in 2024: Platinum Level Certificate. We continue to effectively and pragmatically manage every drop of water from the source to water use by processes and finally to discharge. We protect the ecological environment, cherish every drop of water, and continue to improve our water use efficiency. We will also continue to systematically implement water resource sustainability management based on the five major achievements of AWS.

- Formulate policies and guidelines to practice good water management**

Nanya formulated the water resources management policies and standard processes and procedures for operations, in order to improve water management efficiency through systematic management. We reviewed water resources-related risks through the Company's risk management framework, implemented improvement measures, and formulated response plans to effectively manage risks. Nanya is transparent, open, and has established good interactions and relationships with stakeholders. We share water resources-related information in a timely manner and participate in environmental protection activities to improve the Company's image in society.

A

Continue to optimize the management of water resources in plants through personnel education and training, organizational planning, water conservation, and the establishment of response systems.

B

Disclose quantifiable water operation indicators, with the main goal of continuously improving water efficiency.

C

With the goal of improving the water quality of effluent, we continue to improve the water treatment system to reduce the impact of operations on the watershed.

D

Maintain the health of important water-related areas through environmental education and continuous monitoring.

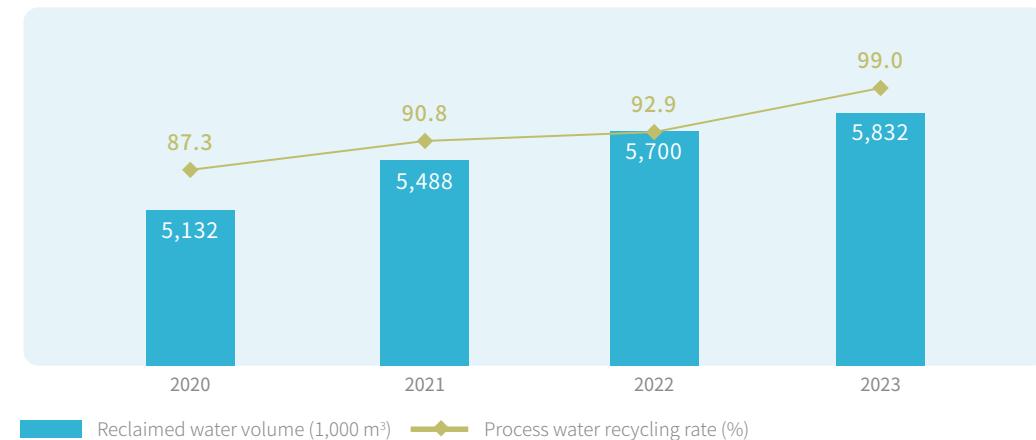
E

Establish good environmental sanitation and drinking water quality systems in the factory area to reduce the occurrence of infectious diseases.

- Actively promote water conservation to reduce water consumption**

Nanya actively implements various water conservation measures, implement water-saving results through work policies, achieve water conservation through water reduction and recycling methods, promotes water conservation through daily management methods, establish wastewater classification and treatment and adopt multiple recycling methods to maximize the use of water resources. In recent years, Nanya has focused more on the construction of recycling systems, and implemented various water conservation measures. The process water recycling rate reached 99% in 2023, the total amount of wastewater recycled reached 5.83 million tons, accounting for 172% of total water consumption.

## Process water recycling rate and volume



## • Excellent water quality of effluent reduces environmental pollution

The wastewater generated by Nanya is treated by the Company and then discharged into Qiancuokeng River. The final receiving water body is Tamsui River. In addition to complying with regulatory standards, more stringent internal control standards have been set for effluent water quality. In accordance with local wastewater discharge laws and customer requirements, Nanya ensures that the wastewater discharged by each plant is in compliance with regulations through irregular internal audits. In addition, our wastewater discharge outlets are equipped with an automatic continuous water monitoring system (CWMS) in accordance with regulatory requirements, which transmits water quality information to the competent authority in real time. Discharge values can be immediately viewed on the Ministry of Environment website, allowing government agencies and the public to understand the Company's water quality, achieving the effect of public supervision.

Nanya's wastewater discharge over the years has complied with effluent standards, and did not receive any fines. We proactively disclose annual wastewater discharge testing data in the ESG report, so that stakeholders can understand the Company's wastewater treatment at any time.

## • Pay attention to the health of water-related areas and maintain a good environment and ecology

Nanya continues to upgrade and optimize its wastewater treatment system, and regularly tests the water quality in the river basin to maintain the environmental health of important water-related areas. We continue to organize environmental public welfare activities every year. For example, began working with the Society of Wilderness in removing Mikania micrantha from Wugu Wetland in 2020, in order to maintain biodiversity and protect habitats, so that native species can continue to survive in the habitat without being harmed. Nanya irregularly organizes cleaning activities in surrounding (mountain) areas of its fabs every year. Employees pick up trash that does not belong to the beautiful mountains, and also help clean leaves and branches inside the ditch on the side of the trail, maintaining a clean ditch and road safety at the same time. Nanya co-organized 2 coastal cleanup activities with other companies in 2020-2022. Coastal cleanup is not only for the purpose of picking up waste, but even more importantly serves the purpose of environmental education and plastic reduction.



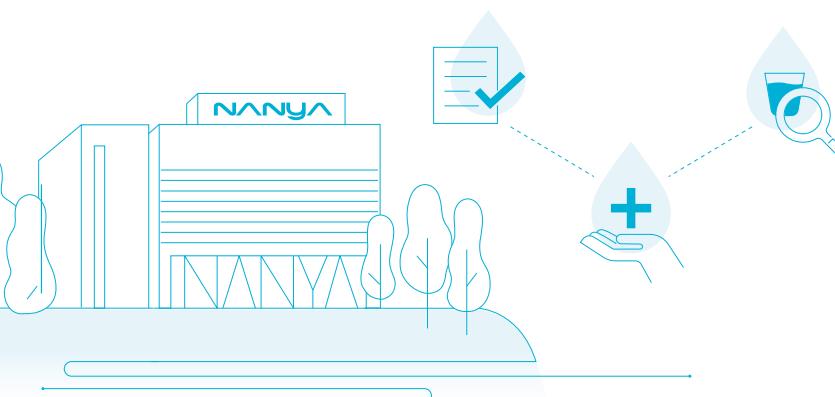
Removing Mikania micrantha from Wugu Wetland



Tamsui River estuary coastal cleanup

## • Safe drinking water and hygienic environment to protect personnel health

There are drinking fountains in the pantries on each floor of the Nanya's fabs. There are adequate sources of drinking water, and management unit periodically has a professional contractor test the water quality to ensure the safety of drinking water. The testing date and results are posted on the drinking fountains for inspection, so that users can drink the water with peace of mind. Cleaning staff regularly clean the pantries, which has rules of use posted in obvious places to remind users to maintain hygiene and cleanliness. Due to the impact of the COVID-19 pandemic in recent years, Nanya has promoted safety and hygiene to employees through the Company's internal website, bulletin boards, and TV wall in the fab. Nanya also printed posters on related issues and posted them at bus shelters and in fabs. The posters allow stakeholders to understand how to prevent the spread of COVID-19 in daily life, take relevant knowledge home and practice it to maintain physical health and environmental hygiene.





# Youth Empowerment Project

Four Themes of Social Engagement



Talent Cultivation



Humanistic Care



Environmental Conservation



Community Harmony

The four themes of Nanya's Social Engagement are talent cultivation, humanistic care, environmental conservation, and community harmony. In terms of talent cultivation, Nanya mainly focused on cultivating semiconductor talents through connections with university and industrial associations for Taiwan's DRAM industry. In 2023, we launched the Youth Empowerment Project to extend the educational blueprint from universities and high schools to elementary schools, aiming to support students with extraordinary talents and implement equal rights in education beyond technology fields.

## • Distance Online Learning Equipment for Rural Elementary Schools

Even though New Taipei City is defined as an urban area, due to its vast territory, there are still many rural areas that lack resources. Especially due to population migration and declining birthrate, rural elementary schools face the dilemma of being merged or even being abolished due to the low number of students and lack of teaching resources. To fulfill social interaction and positive peer influence, cross-school distance online learning has become one of the ways for rural schools to overcome this dilemma.

With the power of technology, Nanya cooperates with the New Taipei City Education Department and rural elementary schools including Bitou, Shifen, Fulong, and Fulian, to create a new model of distance co-learning. The Company donated digital distance learning equipment and arranged information technology expertise volunteers to help schools establish a complete online distance co-learning system, jointly driving the digital transformation of rural education in New Taipei City. Nanya hopes to use its power to provide students in rural areas of New Taipei City with more diverse and cross-school interactive discussions, stimulate students' thinking, and further supplement the educational resources of rural schools, promoting academic equality.

After updating our digital equipment and Internet connection, we now have a better vision of the students through new cameras, which has significantly improved the quality of teaching. We are now able to see if students are paying attention, and the online platforms can be used to teach cross-school courses at any time without worrying about computer or Internet connection issues.

**Teng Yu-Chen**  
Sixth-grade Teacher,  
Bitou Elementary School.

The online connection for the class has been smooth since the update, and we have not experienced any disconnections. The teachers' presentations are displayed smoothly during class, and the sound is clear. Students from other schools can now participate and answer questions without disconnections, making online learning more fun!

**Chien Chih-Yun and Chen Yen-Ming**  
Fifth grade students at Bitou Elementary School

## • Students-Athletes Scholarship

Nanya noticed that some young students focus not only on their studies but also have other talents and require additional resources to pursue their dreams. Through employee interviews, it was discovered that the development of professional athletes demands rigorous daily training and experience through various competitions. These investments include time, cost, and effort that are difficult to estimate. And Nanya is here to support young students to achieve their goals.

Starting in 2022, children of Nanya employees are eligible to apply for the Student-Athlete Scholarship. All students under the age of 24 who meet the qualifications of the national athlete or have outstanding performance in the National Games, National High School Games, and competitions recognized by the Ministry of Education will be sponsored. This support will enable players to focus on training, gain competition experience, and concentrate on their professional career development. As of 2023, scholarships were provided to 4 national athletes and 4 players with outstanding performance in table tennis, ice skating, taekwondo, competitive gymnastics, and diabolo.



Bronze Medalist Ting Yu-En, the Women's Inline Freestyle Skating Speed Slalom of Roller Skating at the 19th Asian Games, 2023. (Left Fourth)  
Chang Ping-Cheng, first place in the Indonesia International Double Table Tennis Championship in 2023. (Right Fourth)

# Embrace Diversity, Innovate Inclusion and Move Towards Sustainability

Diversity, Equity and Inclusion (DEI) is one of Nanya Technology Corporation's sustainable development strategies, and a key element in the process of Nanya realizing its vision of "Being the Best DRAM Partner for a Smart Generation." Upholding the spirit of being people-oriented, Nanya promotes DEI and internalized it into the organizational culture and Employee Code of Conduct, laying a good foundation for the Company's sustainable development.

Implement our core values:  
Integrity, accountability,  
innovation, and efficiency

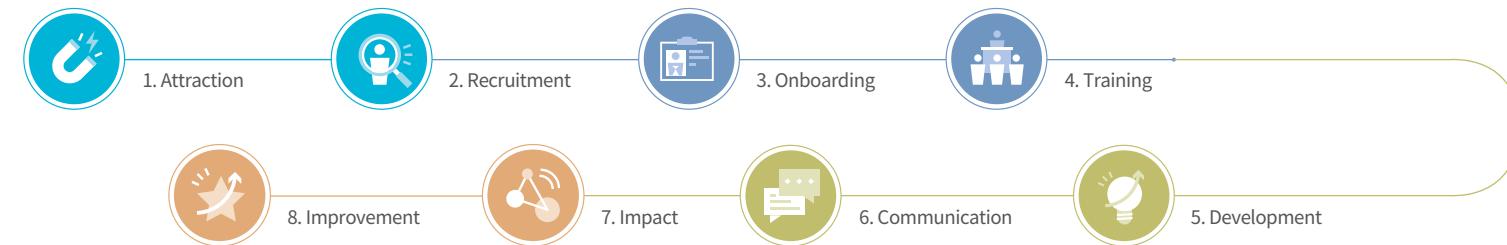
Embrace all identities and backgrounds, and respect, support, and value the unique and innovative perspectives of every individual.



Establish a fair talent screening and recruitment process to provide everyone with opportunities to improve their abilities and develop.

Create a workplace culture with a sense of belonging and fully allow every employee to participate and express their opinions

To create a workplace environment full of curiosity and collaboration, we apply DEI values in every process of our routine work from the eight stages of talent attraction, recruitment, onboarding, training, development, communication, impacts and improvements.



## 1. Attraction

Establish diversity and inclusion as our brand as an employer to attract diverse talents.

- Semiconductor Women's Empowerment Camp

We collaborated with industry, government (Youth Career Development Center), and academia to organize the Semiconductor Women's Empowerment Camp. In 2023, we invited more than 30 students from Ginling Girls'High School to participate in the event. Besides learning about the Company and product applications, we also encouraged future female talents to enter the field of semiconductors; satisfaction with the event reached 4.85 (5-point scale).



- Foreign Student Visits

Students from the College of Engineering, Design and Computing at the University of Colorado Denver were invited by the Department of Electronics Engineering, Chang Gung University to Taiwan. A total of 12 foreign teachers and students visited the Company to understand our work environment, and introductions by supervisors allowed students to further understand Taiwan's semiconductor industry; satisfaction with the event reached 4.82 (5-point scale).

## 2. Recruitment

We changed all items on the interview information form that are not directly related to work to optional, such as gender, age, family status, etc., incorporating DEI values into the recruitment process, actively reducing the chance of bias. This makes the recruitment process friendlier. We also provide recruiters with training on DEI interview skills.

## 3. Onboarding

Through the new employee training camp and Buddy coaching, we help new employees adapt to the workplace environment and get started smoothly.

- New employee training camp

Every new employee goes through a five-day new employee training camp starting on their first day at the Company. During the training period, new employees can experience and demonstrate our core values in the team consensus building camp, and learn about the Company's environment, regulations, systems, and organization from internal lecturers. It can also form friendships among new employees to make them feel secure and a sense of belonging. The number of people who passed the new employee training camp in 2023: 268 people in 19 batches.

- Buddies for new employees in the department

The department head appoints senior personnel to serve as buddies for new employees for one year, helping new employees become familiar with the department's organization, adapt to the environment, provide coaching in work, and provide assistance required in routine work. To effectively help buddies build relationships with new employees, we prepared and provided each buddy with a new employee coaching manual, and arranged for buddies to receive new employee coaching technique training courses, which improve their coaching skills and establish a friendly relationship of mutual trust and effective communication. In 2023, 83 people in 2 batches passed the new employee coaching training course.

- Consultation services for new employees

For new employees who have worked at the Company for less than two years, we adopt systematic and supportive guidance measures and refer employees to professional organizations to solve employees' problems, so that they feel respected and cared for, while reducing the difficulties they encounter at work, and stably learn and develop in their post. Provided guidance to new employees 355 times in 2023.



## 4. Training

We strive to improve employees' awareness and understanding of biases and create a sense of belonging and connection, in order to create a diverse and inclusive workplace environment. For example:

“woMen Era” activities provides a platform for continuous dialogue, and the humanities and art literacy lecture series showcases employees' curiosity and inspires new thinking for continuous innovation, which can improve employees' awareness, understanding and participation in diversity and inclusion. A total of 13 lectures on inclusion and multicultural literacy with 610 participants were held in 2023.



Group photo during the women's empowerment forum



2023 Humanities and Arts Literacy Lecture Invited Dr. Rednose to share life stories

## 5. Development

Cultivating diverse management talents can help improve organizational management, including diversity in age, gender, and background, which is crucial when facing challenges of multiculturalism and globalization. It can also ensure that the Company continues to have excellent management talents and maintain the core values and culture of Nanya, allowing managers to better lead the organization toward sustainable development.

- Management Talent Development Project

Project name	2023 Results
<b>PROTO-STAR Rising Star Project</b>	Developed 62 management trainees
<b>E.T.D.P. Elite Talent Development</b>	Developed 75 elite talents
<b>E.T.S.P. Elite Talent Successor Project</b>	Trained 24 key talents
<b>PIONEER Project</b>	Trained 9 pioneer successors

## 6. Communication

Use two-way communication to collect employee feedback and continuously optimize the Company's DEI measures. We created various communication platforms for employees to express their needs, and fully utilize these active and passive channels, including questionnaire surveys, electronic opinion boxes, all-staff meetings, and social media platforms. These resources help improve mutual understanding and facilitate more meaningful communication and dialogue to create a better experience for all employees.

### • Communication channels for inclusion



\*In 2023, there were a total of 97 electronic opinion forms with a 100% case closure rate.



Talent cultivation



Environmental conservation



Humanistic care



Community harmony

Work together with schools to implant the concept of sustainability in young students, cultivate diverse young professionals, and talents for all sectors, empower and implement equal rights in education, and reduce the gap between urban and rural areas.

Take action to improve the impact of climate change and environmental pollution on the Earth, raise awareness of environmental conservation, protect biodiversity, and create a harmonious relationship between people and the environment.

Encourage and support employees to participate in volunteer services, and cooperate with governments, non-profit organizations and other enterprises to provide resources and support to promote local cultural features.

Work together to build thriving communities by addressing local needs and respecting the uniqueness of the communities in which we operate.

Donated NT\$  
**1,000,000** in equipment  
to rural elementary schools  
for distance learning

Environmental protection  
initiative - Biodiversity:  
Removed **184.3 kg** of  
Mikania micrantha

The Renaissance activity  
series had a total of  
**8,520** participants

Deepen community  
communication: Interacted  
with **16,797** people in the  
neighborhood

## 7. Impacts

Build partnerships and promote and influence social diversity. Our social engagement themes, "Talent Cultivation," "Environmental Protection," "Humanistic Care," and "Community Harmony" help promote inclusive and flexible economic development, ensuring that no one is left behind. We incorporated DEI into every aspect to build and strengthen our commitment to provide opportunities for individuals, families and communities

## 8. Improvement

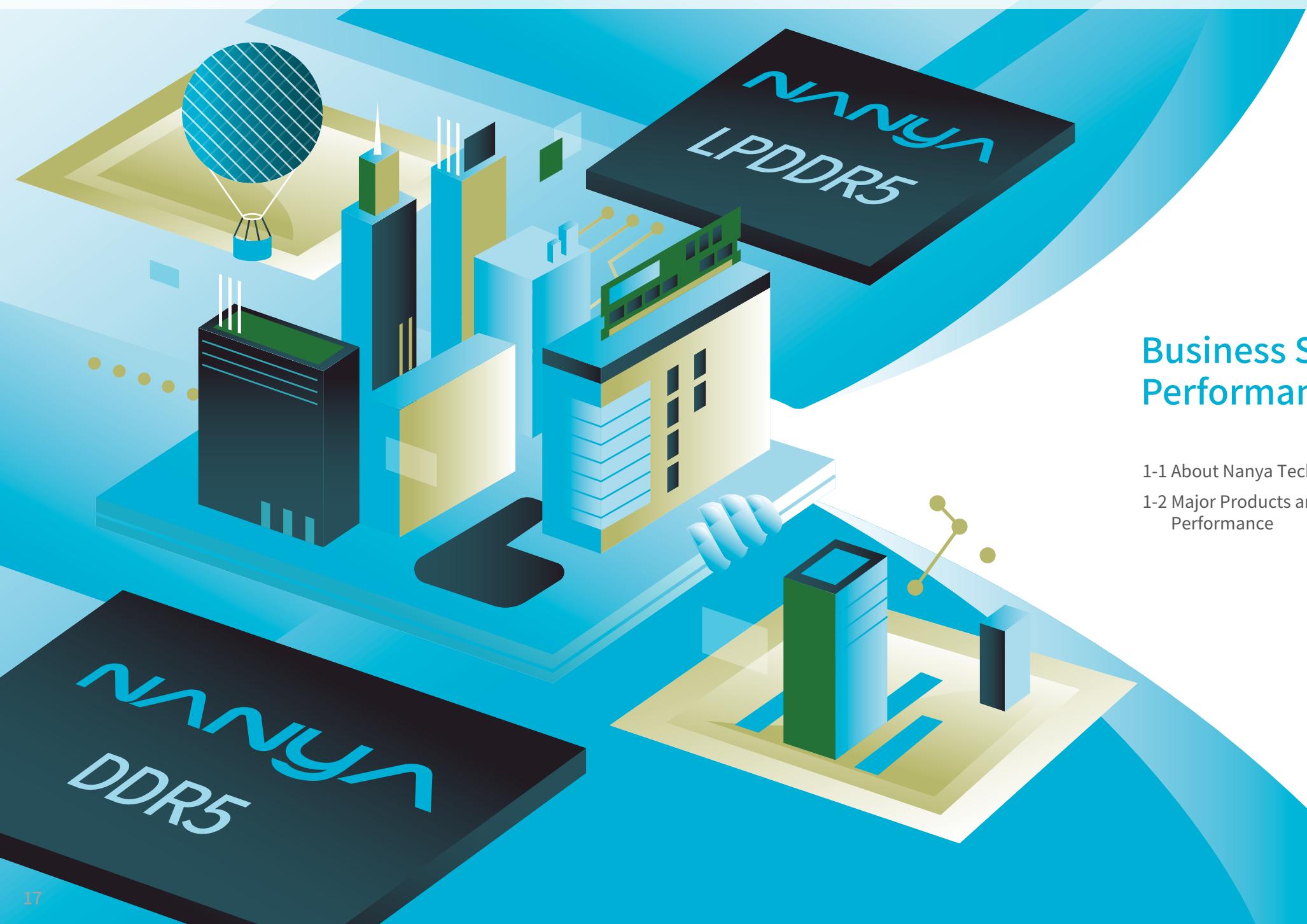
We need to plan a comprehensive action plan to realize our DEI strategy, and established key measurable indicators and regularly review various indicators. We implemented various projects, developed new processes or improved existing processes to transform our commitment into meaningful actions, which enable individuals, teams and organizations to reach their full potential, ensuring that all employees feel recognized and have opportunities to develop and grow.

### • We strive to keep moving forward

Looking towards 2024 and beyond, NANYA will continue to promote Diversity, Equity and Inclusion (DEI) measures to support for our employees, customers and society. Let us embrace diversity, innovate for inclusion and move towards sustainability.

#### social engagement themes





# 1

## Business Strategies and Performance

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# 1.1 About Nanya Technology Corporation

## A Trustworthy DRAM Manufacturer

Nanya is a company dedicated to the R&D, design, manufacturing, and sales of DRAM (Dynamic Random Access Memory), ranking number four in the global DRAM industry. With innovation as the drive of our growth, we continue to develop proprietary technologies and intellectual properties with a competent R&D team. We have also implemented green technologies and smart manufacturing to optimize the production process.

## The Best DRAM Partner for Smart World

DRAM is the key component in the evolution of smart generations. The main application areas include smartphones, servers and data centers. With the advancement of AI technologies and smart electronics, the use of DRAM products will further increase and become even more diversified.

Nanya has a complete DRAM product portfolio and continues to make inroads in advanced products and services. Our focus on innovation has resulted in the successful development of 10nm-class process technology, which will enable the next three generations of DRAM, including the DDR5 and LPDDR5 products. The design and pilot production of the 16Gb DDR5 products manufactured by our second generation 10nm-class technology (1B) has been completed, and the goal is to enter mass production in 2024.

In addition to current facilities upgrades, Nanya plans to invest approximately NT\$ 300 billion for a new fab with a two-story clean room. The construction has started in 2022, and once completed, future generations of our 10nm-class technologies and products will be implemented and produced. The new fab's capacity will be expanded by three phases with an ultimate monthly capacity of 45,000 wafers. The Company, as a whole, will reach 120% of bit output growth, generating over NT\$70 billion in output value each year with approximately 3,000 job opportunities.

## ESG Commitments

Nanya strives to integrate sustainability into daily operation and proactively communicate with stakeholders with internationally recognized standards. In addition to this report, our ESG performance within specific areas of focus is also disclosed in the [Human Rights Protection and Due Diligence Report](#) and the [Task Force on Climate-Related Financial Disclosures Report \(TCFD\)](#). In 2024, we will release our first [TNFD-TCFD Report](#) to further integrate nature-related topics into our corporate sustainability.

Regarding the environmental performance, Nanya endeavors to reduce the GHG emissions based on our SBTi-approved targets. The Company implemented water conservation measures and wastewater recycling system, and adopted the Alliance for Water Stewardship (AWS) standards in 2023 to optimize water management. We are also a founding member of the Semiconductor Climate Consortium (SCC) with an aim to work with industry partners to enable greener manufacturing. For social responsibilities and corporate governance, we spare no effort in supporting employees' career development and attract talents with competitive incentives and continuous training. The expansion of our industry-academic collaboration and internship projects effectively bridges the connection between Nanya and the next generation of talents.

The Company's sustainability performance has also been recognized by preeminent institutions worldwide. In 2023, Nanya was selected into the DJSI World Index for the third time and the Emerging Markets Index for the fifth time. Our scores in the S&P Global Corporate Sustainability Assessment (CSA) ranked first among memory companies, and was included in the 2023 S&P Global Sustainability Yearbook. We have obtained double 'A' rankings in CDP's assessment in Climate Change and Water Security. We were awarded the Top 10 Taiwanese Sustainable Manufacturing Companies by the Taiwan Institute for Sustainable Energy, and selected as the top 5% in the Corporate Governance Evaluation.

## Company Locations (including overseas branch offices)



Note: Nanya did not have any merger and acquisition plans or transactions in the past three years (2021-2023).

## Participation in Associations, Non-profit Organizations, and Initiatives

Nanya seeks to enlarge positive impacts by connecting with industry and value chain partners. We support the goal of containing global warming to well below 2 °C through active involvement in international initiatives and industry organizations. To ensure effective connection, we established the Public Affairs Participation Group under the [Sustainable Development Steering Center](#) to evaluate and review our participation in public affairs. Based on our “[Public Affairs Participation Guidelines](#)”, we also conduct annual review to ensure the climate-related organizations we participate in align with the goals of the Paris Agreement.

### Membership Fees and Other Spendings of Associations and Non-profit Organizations

Our role	2020	2021	2022	2023
Member				
Semiconductor Equipment and Materials International (SEMI)	-	-	-	643 (US\$22 thousand)
Founding member				
Semiconductor Climate Consortium (SCC) (Joined in 2022)	-	-	469 (US\$15 thousand)	469 (US\$15 thousand)
Director				
Taiwan Semiconductor Industry Association (TSIA)	320	320	320	695 <sup>note</sup>
Taiwan IC Industry & Academia Research Alliance	100	100	100	100
Taiwan Center for Corporate Sustainability	280	280	280	280
Taiwan Net Zero Emissions Association (Joined in 2021)	-	-	150	150

Note: In 2023, in addition to the membership fees payment of NT\$ 320,000, other spendings were made to share TSIA regular activities expenses.

Unit: NT\$ thousand

## SEMI Sustainable Manufacturing Committee

- ◆ Participated in 2022 with Vice President Joseph Wu serving as the chairman.
- ◆ **Goals**
  - 1.Integrate global green manufacturing resources
  - 2.Strengthen supply chain partnerships to accelerate the realization of sustainability
  - 3.Promote innovative technologies through strategic R&D collaboration

## Semiconductor Climate Consortium (SCC)

- ◆ Participated in 2022 as a founding member
- ◆ **Mission and goals**
  - 1.Cooperation: Reduce GHG emissions through aligned actions, technological innovation, and close communication
  - 2.Transparency: Publish progress reports of the three scopes of emissions every year
  - 3.Goal: Set short-term and long-term carbon reduction targets to achieve net zero by 2050

## Taiwan Net Zero Emissions Association (TNZEA)

- ◆ Participated in 2021 as a director
- ◆ We aim to collaborate with the government to achieve Taiwan's 2050 carbon neutrality goals.

## Supporting International Initiatives

## Science Based Targets (SBT) | Organization: SBTi

- ◆ Signed the commitment in 2021
- ◆ Our WB2D carbon reduction goals and action plans were validated by SBTi in 2022

## TCFD Supporter | Organization: TCFD

- ◆ Adopted the TCFD framework in 2018 and became a supporter in 2021
- ◆ Published the second TCFD Report in 2023

## TNFD Supporter | Organization: TNFD

- ◆ Published the first TCFD and TNFD integrated report in 2024



# 1.2 Major Products and Operating Performance

## Product Information

Nanya is one of the key suppliers in the DRAM industry, offering products including standard DRAM, consumer DRAM, mobile DRAM, automotive / industrial-grade DRAM, and customized DRAM. Technological innovation is the core value and main growth momentum of Nanya driving us to invest even more R&D resources to accelerate the development of 10nm process technologies and new-generation DDR5/LPDDR5X products to enhance our competitiveness.

- We will continue to optimize the application of low power products on the basis of consumer application customers for our 20nm products. Also, we will increase the speed of products for the use in high-end in-vehicle systems and high-end TV sets. Regarding sales of server products, besides maintaining relationships with existing major customers, we will also expand across the world to medium and small-sized customers, such as regional data centers, to increase our sales channels and customer base.
- Trial production of pilot products using 2<sup>nd</sup> generation 10nm-class (1B) technology has begun, development of DDR4/DDR5 products will be completed and customer certification will be awarded in the second half of 2024 and move into mass production. We are also developing LPDDR4X/LPDDR5X products and will subsequently begin mass production.



## Market Overview

DRAM market recovery is closely tied up with the global macroeconomy, geopolitical issues, and the US-China trade conflicts before it resumes the growth in the foreseeable future. Also, the development of 5G and AI plays the key drivers to grow DRAM industry. In the longer term, DRAM even plays the critical role to enable all the end devices smarter, as well as to fulfill the continuous digitalization at key applications. DRAM is increasingly applied to more and more end devices. Servers, data centers, personal computers, smartphones, and consumer electronics are the major segments among the current applications.

Turning to the market outlook of 2024, the DRAM market will resume its recovery at steady pace. DRAM shipment is picking up covering from server, Mobile phone to laptops. On the supply side, the top three suppliers will improve the utilization rates thru the year of 2024, and add equipment investment to scale up high-bandwidth memory (HBM) production capacity and the ratio of premium products such as HBM and DDR5.

Due to the re-allocation of production capacity, the growth of regular DRAM bit output will be minimized at the lowest level. It's expected to see the average selling price to improve sequentially because of the end demand recovery coupled with the product mix adjustment. However, the progress of end demand recovery is still haunted by the geopolitical issues and regional economic conditions. It's necessary to keep watching closely on the factors from the macro environment.

## DRAM Application Trends



Servers

- ◆ Artificial intelligence topic drive demand for cloud/edge computing. Although the overall economy has not clearly recovered, the demand for AI servers has increased significantly. The demand for AI servers is expected to continue to drive the server market in 2024, with overall demand reaching 13.7 million units, a 3% increase compared to last year.
- ◆ The demand for stand-alone DRAM is also expected to continue to grow due to the high-density computing needs of AI servers, with the average usage of one machine reaching 719GB.



Mobile Devices

- ◆ Global sales of smartphones declined in 2023 due to global inflation, geopolitics, and material shortages. Mobile phones will also begin to introduce generative AI functions in 2024, and the overall number of mobile phone shipments and the amount of DRAM installed are expected to increase compared to last year.
- ◆ The amount of DRAM installed in each mobile phone is expected to grow by double digits compared to last year.



Personal Computers

- ◆ Due to the impact of global inflation and sluggish economy, demand on personal computers declined by 10% in 2023. In 2024, the trend of artificial intelligence will gradually lead to personalized end products. New generations of CPUs for AI PCs will contribute to higher efficiency and productivity and is expected to drive the demand for personal computers and DRAM content per box.



Consumer Electronics

- ◆ The demand for consumer electronics products declined in 2023 due to the impact of global interest rate hikes on the overall economic consumption capacity. As inflation eases and large-scale sports events to be held in 2024, the sales volume of consumer electronics products, such as audiovisual streaming devices, network communication equipment, video and surveillance systems, and game consoles is expected to show slight growth. In-vehicle, VR/AR devices, smart watches, and smart speakers are also expected to show steady growth as they continue to be driven by the concept of AI edge computing.

## Business Development Plan

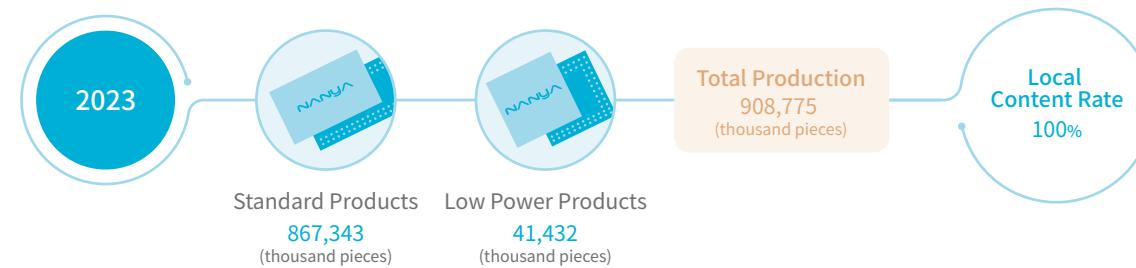
### Short-term Plan

- ◆ Stabilize the sales momentum of current products, increase the proportion of input for 20nm low-power products, and increase product sales in application fields such as digital TVs, network communication, digital cameras, KGD, solid-state drives, automotive, communication modules, multi-chip packaged voice assistants, and handheld devices.
- ◆ Capture business opportunities from major data center customers for DDR4 server modules and develop business with small and medium-sized customers in global regional data centers, as well as develop customer sources for baseboard management controllers (BMC) and network interface controllers (NIC).
- ◆ Mass production of 8Gb/4Gb DDR4 using the 2<sup>nd</sup> generation 10nm-class (1B) process is promoted to KGD application markets, while performance in mainstream markets such as personal computers and server applications are prioritized for 16Gb DDR5.

### Long-term Plan

- ◆ Besides promoting current product lines, we work on shrinking die-size through the development of 1B process production lines to enhance our competitiveness, and develop a high-density, high-speed 16Gb DDR5/ LPDDR4X/LPDDR5X product portfolio to meet customer demand in low, medium, and high-density markets.
- ◆ Develop Through-Silicon Via (TSV) process technology and combine it with DDR5 products to create high density DRAM modules to meet the needs of the server market.
- ◆ Continue to develop 3<sup>rd</sup> generation 10nm-class (1C) technology to improve product performance and enter trial production in early 2025. Construction of the new fab will be carried out according to schedule and will install process equipment based on market demand starting in 2026.

## Annual Output and Sales Market



Nanya's main sales markets include China (42.8%) and Taiwan (35.2%). For details, please refer to page 44 of the Company's [2023 consolidated financial report](#).

## Operating Performance

Nanya's consolidated revenue amounted to NT\$29.89 billion in 2023, a decrease of approximately 47.5% from NT\$56.95 billion in 2022. The net loss was NT\$7.44 billion, with a net profit margin of -24.9%. The loss per share was NT\$2.40.

In 2023, the demand momentum for terminal information and communication products such as servers, data centers, mobile phones, and laptops was insufficient. The inventory adjustments were slow. According to research institutions, global DRAM revenue decreased by approximately 38% compared to the previous year, with the average selling price declining by over 40%. DRAM suppliers successively expanded production cuts in the first half of the year to address the supply-demand imbalance. In the latter half of the year, due to the increasing popularity of generative artificial intelligence (AI), demand for related products such as high-bandwidth memory (HBM) and DDR5 grew, alleviating the pressure on DDR4/LPDDR4 inventory. DRAM prices stopped declining and began gradually reversing upwards starting from the fourth quarter.

In response to the market conditions, Nanya adjusted its production and sales strategies. The shipments for 2023 decreased by a middle single-digit percentage compared to the previous year. The revenue gradually rebounded quarter by quarter from the low point in the first quarter, while the gross margin improved significantly starting from the fourth quarter due to higher average selling prices and lower idle costs.

### Financial Performance during the Last Four Years

	2023	2022	2021	2020
Market Capitalization (NT\$100 million) <sup>Note1</sup>	2,416.5	1,586.2	2,418.7	2,685.2
Operating Revenue (NT\$100 million)	298.9	569.5	856.0	610.1
Operating Income (Loss) (NT\$100 million)	(144.6)	110.0	271.9	84.3
Net income (Loss) (NT\$100 million)	(74.4)	146.2	228.5	76.9
Return on equity (%)	(4.3)	8.3	14.0	5.0
Total Amount of Cash Dividends (NT\$100 million) <sup>Note2</sup>	-	66.0	114.7	40.0
Cash Dividend Per Share (NT\$) <sup>Note2</sup>	-	2.1	3.7	1.3
Employee Welfare Expense (NT\$100 million)	50.8	67.7	73.0	58.6

Note 1: Calculated based on year-end stock prices.

Note 2: Dividends are disclosed according to the dividend attributable year and paid out in the following year.

## Tax Policy and Information

Nanya particularly formulated the "Nanya Tax Policy" to efficiently control tax risks, create the Company's long-term value, pursue sustainable development, and implement corporate social responsibility to completely ensure the rights of the Company and its investors. Nanya's tax policy was passed by the Board of Directors, and tax management policies, procedures, and compliance are now supervised by the Sustainable Development Committee, which is a functional committee under the Board of Directors that reports management status or material risks to the Board of Directors when appropriate.



Nanya Tax Policy

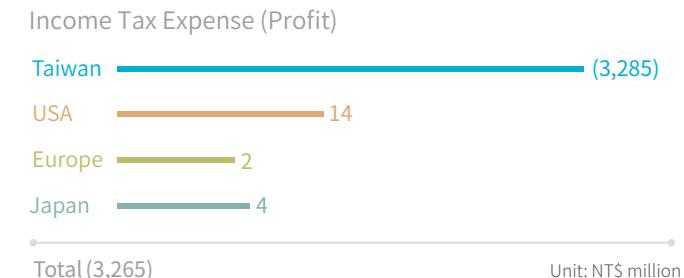
- Full compliance with all applicable laws and regulations.
- Disclosures in financial reports are made in accordance with applicable regulations and reporting requirements.
- Shall not transfer profits to lower tax jurisdictions.
- Develop a relationship of mutual respect with tax authorities based on trust and good faith.
- Shall not adopt tax havens or tax structures that are meant for tax avoidance.
- Inter-company transactions are based on the arm's length principle, in compliance with transfer pricing guidance published by the relevant authority.
- The company analyzes the operating environment needs to assess tax risks; make major operating decisions with consider the impact of taxation.

### Tax Performance during the Last Two Years

	2023	2022
Net Income (Loss) Before Tax	(10,705)	16,877
Income Tax Expense (Profit)	(3,265)	2,258
Income Taxes Paid	2304	3,583

Unit: NT\$ million

### 2023 Year Income Tax (Profit) Expense by Country



# 2

## Achieving Corporate Sustainability

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# 2.1 Sustainability Vision and Governance

## Sustainability Vision and Policy

As a professional memory manufacturer, Nanya not only pursues innovation and enhances competitiveness, but also actively complies with the [corporate sustainability policy](#). Nanya is committed to establishing a good interactive network with employees, shareholders, customers, suppliers, and society to jointly create a future vision of sustainable development.



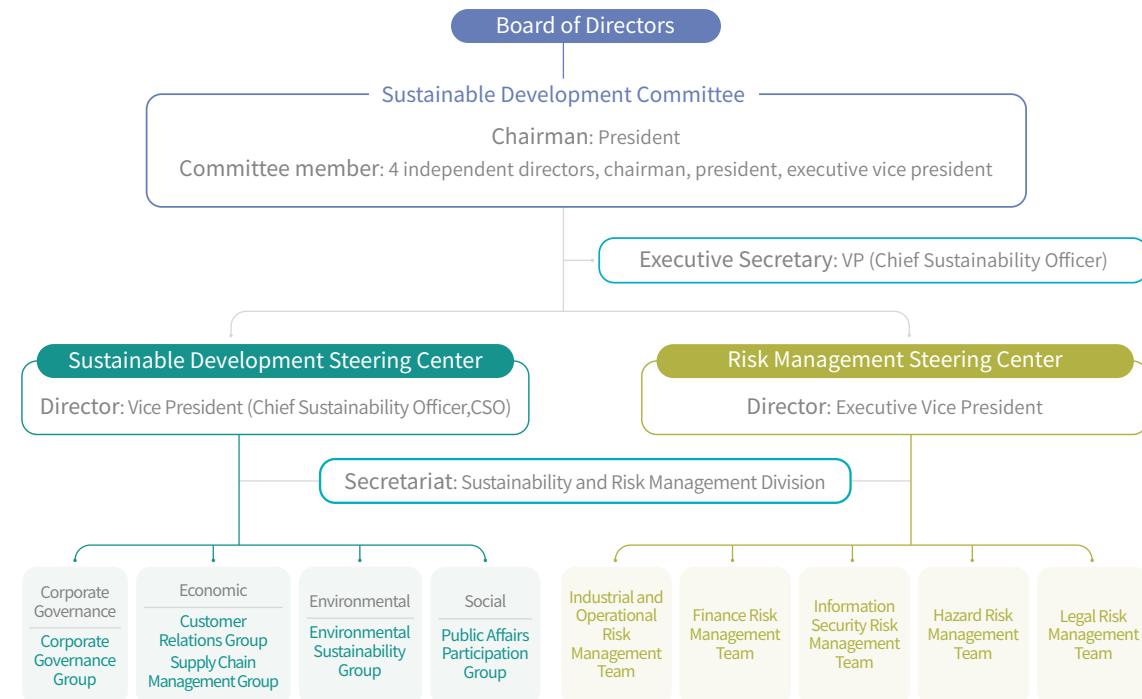
## Sustainability Organization and Governance

Nanya officially upgraded the Sustainable Development Committee to a functional committee under the board of directors in August 2022. The committee is formed by the chairman, 4 independent directors, and 2 executive directors. The committee members jointly appoint the president as the chairman, and the Chief Sustainability Officer serves as the reporter. The committee supervises the implementation of work related to "sustainable development" and "risk management." Since its establishment, we have regularly reported sustainability and risk projects during board meetings twice a year ; regularly review the company's sustainable development strategy, vision, goals, implementation guidelines, and results ; and routinely tracks risk management. So the members of the Sustainable Development Committee and board of directors can fully understand the Company's sustainability work progress, goals set for material issues in the next year, implementation status of goals for the previous year, highlights, and stakeholder engagement, raising sustainability governance to a higher level.

The Sustainable Development Committee charged the Sustainable Development Steering Center and Risk Management Steering Center to implement sustainability and risk management work. The executive vice president and vice president serve as the directors, and the Sustainable Development and Risk Management Division under the President's Office to serve as the Secretariat to continue communicating the importance of sustainable development to business administration. The division is responsible for convening sustainable development quarterly meetings and risk management quarterly meetings. It plans and controls various action plans and risks, and integrates and supervises the execution progress and results of corporate governance and economic, social, and environmental sustainability, ensuring the effectiveness of horizontal and vertical communication to specifically implement sustainable development.

The Chief Sustainability Officer is responsible for reporting to members of the Sustainability Development Committee, and also needs to maintain good interactions with stakeholders to communicate the progress of sustainable development, ensure smooth cooperation with experts on various sustainability issues, and dedicate its efforts to horizontal communication across departments within the Company, focusing on sustainability goals and promoting implementation guidelines. Please refer to the chapter on "[Integrity and Transparency](#)" for Nanya's implementation of risk management in 2023.

## Nanya Sustainable Development Committee



## • 2023 Sustainable Development Committee Work Items



- ◆ Implemented Alliance for Water Stewardship (AWS) and obtained Platinum certification
- ◆ Evaluated the purchase of 250 million kWh of renewable energy over 10 years in 2024, and continued to evaluate the feasibility of purchasing offshore wind power
- ◆ Deepen ISO 50001 Energy Management System, and promoted energy action management improvement projects
- ◆ Continue to implement the GHG inventory plan and implemented improvements to Scope 1, Scope 2, and Scope 3 GHG emissions
- ◆ Continue to implement the LCA (Life Cycle Assessment) inventory mechanism and hotspot improvement following the inventory
- ◆ Circular economy and waste disposal source tracing mechanism
- ◆ Identify, audit, and guide suppliers with high sustainability risks
- ◆ Organized the Sustainable Supply Chain Seminar and continued to deepen value chain ESG engagement
- ◆ Executed customer satisfaction evaluation through a third party
- ◆ Continue to improve corporate governance
- ◆ Continued to participate in domestic and international sustainability evaluations, such as DJSI, CDP, Taiwan Corporate Sustainability Awards, Outstanding Enterprises in Resource Circulation, and National Quality Development Award
- ◆ Implemented the TNFD's LEAP methodology and organize an cross-departments task force to identify nature-related dependencies and impacts



- ◆ Sales and marketing risks
- ◆ Risks of wafer manufacturing and back-end packaging and testing
- ◆ Operation supporting risks
- ◆ Human resources risks
- ◆ Privacy management risks
- ◆ Information Security Risk
- ◆ Quality risks
- ◆ Environmental health and safety risks
- ◆ Corporate strategy and finance risks
- ◆ Emerging Risks



- ◆ Reviewed known legal and regulatory compliance
- ◆ Response measures to new regulations



## • Board of Directors Participation in Sustainability Governance – Highlights of Reports to the Sustainable Development Committee and Board of Directors

### 2023 Key Performance



- ◆ Constituent stock of the DJSI World Index and Emerging Markets Index Top 10% worldwide in ESG score of the Sustainability Yearbook published by S&P Global
- ◆ CDP Climate Change and Water Security A List
- ◆ TCSA Top Ten Sustainable Companies Award and 8 individual performance awards

### 2024 Work Plan

- ◆ Implement the sustainable supply chain improvement project, including product carbon footprint management and low-carbon transformation project with large enterprises leading small enterprises
- ◆ Implement the TNFD Recommendations and integrate the TCFD framework, and publish the "[Nature and Climate-related Financial Disclosures Report](#)"

### Sustainable development organization and sustainability strategies

### Report on GHG inventory and verification

### Risk management organization, risk identification, and preventive measures

### Sustainability Report and Results of Materiality Analysis, TNFD&TCFD Report, Human Rights Protection and Due Diligence Report

## 2.2 Materiality Analysis

Materiality analysis is key preparatory work for compiling the sustainability report every year, and is also the key to the Company's implementation of sustainability plans. Nanya established a systematic analysis method, listens to stakeholders' concerns about ESG issues, considers the attributes of its operations and the impact on the economy, environment, and people/human rights, and identifies material ESG issues, which lay the foundation for compiling sustainability reports and implementing ESG projects.

### Materiality Analysis Process

Nanya conducts materiality analysis every year, and follows GRI 3: Material Topics 2021, including the impacts on the economy, environment, people, and human rights. We also incorporated the European Sustainability Reporting Standards (ESRS) announced by the Corporate Sustainability Reporting Directive (CSRD). We established a three-stage materiality analysis process: "Identification and selection, Deciding priority, and Confirmation and review" to identify topics that have significant impacts, topics that significantly affect Nanya's operations, and topics of high concern to stakeholders, which are defined as material sustainability topics. We then formulated corresponding long-term sustainability goals.



#### 01 Identification and selection

(1) **Identify major stakeholders:** We followed the GRI Standards and the AA1000 Stakeholder Engagement Standard (SES), and identified seven major categories of stakeholders through sustainable development work meetings, including: employees, shareholders/investors, customers, suppliers, the government, society, and the media. In addition, we gathered and analyzed the concerned issues and identified the communication channels to include the stakeholders' concerns into the daily work and annual plans of our sustainable development.

(2) **Selection of ESG topics:** We identified topics related Nanya's operations from both external and internal perspectives. Sources of topics include international sustainability regulations and standards (GRI Standards, SBSC, SDGs), industry-specific issues (RBA, SASB), sustainability ratings (DJSI, CDP, MSCI Sustainability Indexes, FTSE4GOOD Emerging Index), communication with stakeholders, and internal business goals, summarizing 21 ESG topics of Nanya.



#### 02 Deciding priority

(1) **Survey of stakeholders' degree of concern:** In addition to the interactions with stakeholders through daily operation, before publishing the report, we conducted questionnaires among the identified seven major categories of stakeholders, and analyzed topics they are concerned about.

(2) **Survey of impact on operations:** Based on the concept of "Double Materiality", Nanya follows the principle of financial materiality to evaluate the impact of each issue on revenue growth, customer satisfaction, employee engagement, costs, reputation, and operations in terms of "level of operational impact." The Company's managers and employees will consider the impact of each ESG issue on the organization's operations and analyze the key issues under different operating factors.

(3) **Survey of impact on sustainable development:** In terms of impact materiality, both monetary and non-monetary methods are used for analysis.

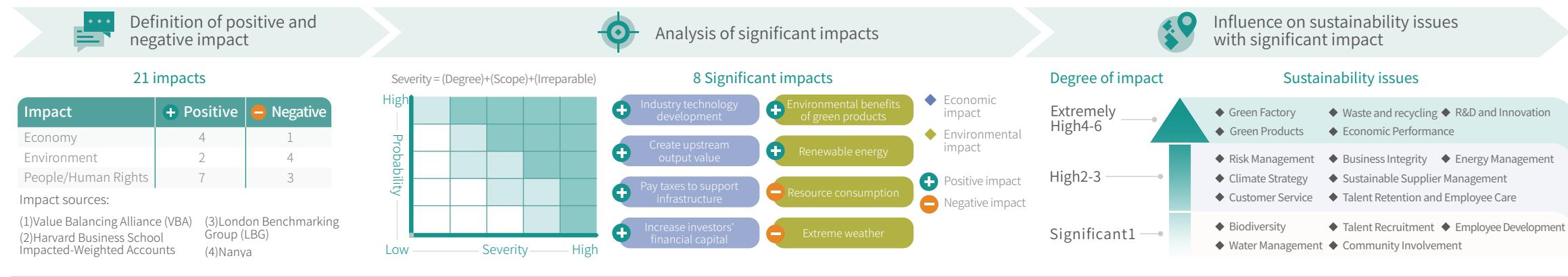


#### 03 Confirmation and review

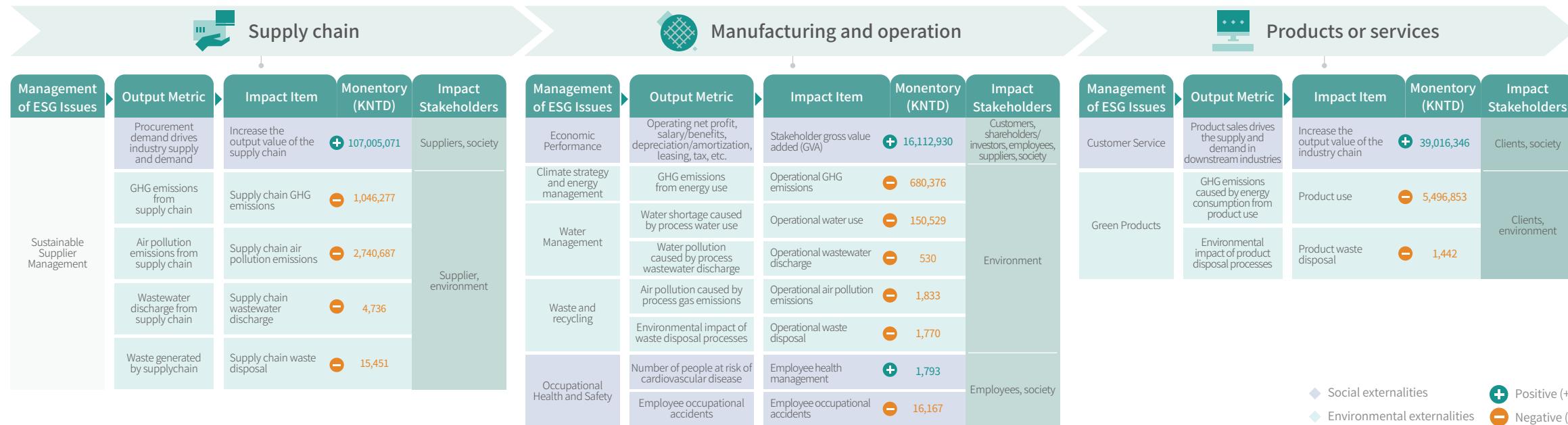
Based on the analysis results of the stage 2, we drew a materiality matrix, and decided material GRI topics. Our senior managers discussed and confirmed these material topics with the Board of Directors before deciding that 15 were our material topics, and the other 6 were potential ESG topics (economic performance, information security and privacy, green factory, biodiversity, employee diversity, talent recruitment), which would be disclosed optionally in the report. In relation to disclosure standards, we adopted the GRI's value chain presentation to make the stakeholders understand the positive and negative impact on the value chain resulting from different topics, while serving as the basis for the Company to strengthen its corporate sustainability management.

## • Impact Assessment Process

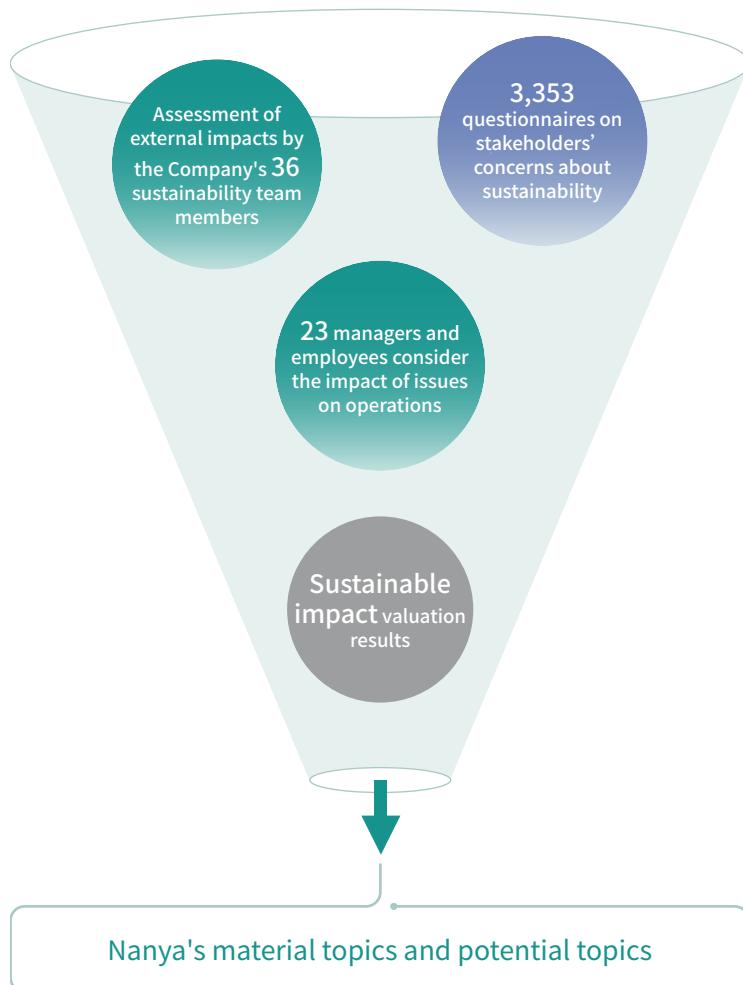
**Non-monetary :** We integrated the Value Balancing Alliance (VBA), Harvard Business School's "Impact-Weighted Accounts" research project, and London Benchmarking Group (LBG), to consider Nanya's impact on the economy, environment, and people/human rights from an external perspective, specifically the severity of impact, scope of impact, irremediability, and probability of occurrence. Members of the Company's sustainable development team evaluate the significance of each external impact, and identify significant impacts and issues.



**Monetary :** We use “Impact Valuation” to define positive and negative impacts of Nanya to determine the significance of external sustainability issues. For details, please refer to the [Sustainable Impact Valuation](#).



- Ranking sustainability issues by importance



Degree of impact on Nanya's operations <sup>Note1</sup>		Stakeholders' level of concern <sup>Note2</sup>		Degree of impact on sustainable development <sup>Note3</sup>	
Degree	ESG topics	Level	ESG topics	Degree	ESG topics
Primary impact	<ul style="list-style-type: none"> <li>◆ Economic Performance</li> <li>◆ R&amp;D and Innovation</li> <li>◆ Sustainable Supplier Management</li> <li>◆ Green Products</li> </ul>	Highly Concern	<ul style="list-style-type: none"> <li>◆ R&amp;D and Innovation</li> <li>◆ Occupational Health and Safety</li> <li>◆ Economic Performance</li> <li>◆ Sustainable Supplier Management</li> <li>◆ Business Integrity</li> <li>◆ Climate Strategy</li> </ul>	Primary impact	<ul style="list-style-type: none"> <li>◆ Economic Performance</li> <li>◆ R&amp;D and Innovation</li> <li>◆ Green Factory</li> <li>◆ Green Products</li> <li>◆ Waste and recycling</li> </ul>
Secondary impact	<ul style="list-style-type: none"> <li>◆ Customer Service</li> <li>◆ Business Integrity</li> <li>◆ Energy Management</li> <li>◆ Talent Retention and Employee Care</li> </ul>	Concern	<ul style="list-style-type: none"> <li>◆ Risk Management</li> <li>◆ Customer Service</li> <li>◆ Talent Retention and Employee Care</li> </ul>	Secondary impact	<ul style="list-style-type: none"> <li>◆ Risk Management</li> <li>◆ Sustainable Supplier Management</li> <li>◆ Climate Strategy</li> <li>◆ Energy Management</li> <li>◆ Customer Service</li> <li>◆ Business Integrity</li> <li>◆ Talent Retention and Employee Care</li> </ul>
Low impact	<ul style="list-style-type: none"> <li>◆ Risk Management</li> <li>◆ Water Management</li> <li>◆ Waste and recycling</li> <li>◆ Information Security and Privacy</li> <li>◆ Green Factory</li> </ul> <ul style="list-style-type: none"> <li>◆ Employee Development</li> <li>◆ Occupational Health and Safety</li> <li>◆ Talent Recruitment</li> <li>◆ Community Involvement</li> </ul>	Low Concern	<ul style="list-style-type: none"> <li>◆ Employee Development</li> <li>◆ Talent Recruitment</li> <li>◆ Human rights</li> </ul>	Low impact	<ul style="list-style-type: none"> <li>◆ Water Management</li> <li>◆ Biodiversity</li> <li>◆ Community Involvement</li> <li>◆ Employee Development</li> <li>◆ Talent Recruitment</li> </ul>

◆ Economics ◆ Environmental ◆ Social

Note 1: The degree of impact of this issue on the five major operational impacts. Primary impact means that the issue affects more than 3 operational impacts at the same time; Secondary impact means that the issue affects two operational impacts at the same time; Low impact means that the issue affects 1 operational impact.

Note 2: The extent to which the seven major stakeholders pay attention to the issue at the same time. Primary concern means that more than 3 types of stakeholders are concerned about the issue at the same time; Secondary concern means that 2 types of stakeholders are concerned about the issue at the same time; Low concern means that only 1 type of stakeholder is concerned about the issue.

Note 3: The degree of impact the issue has on eight major external sustainability impacts. Primary impact means that the issue affects more than 4 external sustainability impacts at the same time; Secondary impact means that the issue affects 2-3 external sustainability impacts at the same time; Low impact means that the issue affects 1 external sustainability impact.

• Material topic matrix<sup>Note1</sup>



• Nanya Double Materiality

	Material Topics	Impact on Nanya's operations					Impact on sustainable development						
		Revenue growth	Customer satisfaction	Costs	Employee engagement	Reputation and image	Industry technology development +	Create upstream output value +	Pay taxes to support government infrastructure +	Increase investors' financial capital +	Product environmental benefits +	Energy and resource recycling and reuse +	Resource consumption and pollution -
Economic aspect	Business Integrity		◆		◆	◆			◆	◆			
	R&D and Innovation	◆	◆	◆	◆		◆	◆	◆	◆	◆		
	Customer Service	◆	◆			◆			◆	◆			
	Sustainable Supplier Management	◆	◆	◆		◆		◆	◆	◆			
	Risk Management	◆						◆		◆			◆
Environmental aspect	Climate Strategy								◆	◆		◆	◆
	Green Products	◆	◆	◆		◆	◆			◆		◆	◆
	Energy Management			◆		◆				◆	◆	◆	◆
	Water Management					◆						◆	
	Waste and recycling					◆					◆	◆	◆
Social aspect	Employee Development				◆					◆			
	Occupational Health and Safety				◆								
	Talent Retention and Employee Wellbeing				◆	◆		◆	◆	◆			
	Community Involvement					◆				◆			
	Human rights <sup>Note2</sup>												

Note 1: Our senior managers discussed and confirmed these material topics with the Board of Directors before deciding that 15 were our material topics, and the other 6 were potential ESG topics (economic performance, information security and privacy, green factory, biodiversity, employee diversity, talent recruitment).

Note 2: "Human rights" did not have a significant impact on Nanya's operations and sustainable development this year. The issue continued to be listed as a major issue from last year, so it is not marked with double materiality in the table above.

## • Material Topics and Risk Management

Based on the analysis results of material topics, Nanya integrated the Enterprise Risk Management(ERM) and identified risk factors of 15 material topics, including: information security threats, power supply anomalies, infectious diseases, earthquake disasters, and personnel turnover/poaching. When facing different risk factors, the Company adopts individual risk mitigation measures to avoid operational impacts derived from the risks.

Risk Management Procedure	Probability of risk and trend (L)	1 Rarely	2 Seldom	3 Occasionally	4 Usually	5 Always
Risk severity (C)	1 Mild	2 Low	3 Moderate	4 Severe	5 Very severe	

Material Topics	Risk factor	Risk description and mitigation measures	Probability of risk and trend (L)	Risk severity (C)
<b>Business Integrity</b>	Violation of laws (regulations) and fined by the competent authority	<p><b>Risk description :</b> Employees violate insider trading or international antitrust laws and other relevant regulations might cause Nanya to be jointly and severally liable for compensation, and managers or directors might also be criminally liable.</p> <p><b>Mitigation measures :</b></p> <ul style="list-style-type: none"> <li>(1)Formulate an operational regulatory compliance plan and incorporate it into routine internal control processes accompanied by regular audits.</li> <li>(2)In addition, agents are included in antitrust compliance guidelines, so that the Company can achieve its business goals in compliance with the law.</li> <li>(3)Promotions through regular training, lectures, staff meetings, and corporate publications to all employees/high-risk personnel.</li> <li>(4)Plan directors and supervisors' liability insurance to ensure that it covers the expenses or compensation incurred in related lawsuits.</li> </ul>	1 Rarely	4 Severe
<b>R&amp;D and Innovation</b>	Process technology development progress falls behind schedule	<p><b>Risk description :</b> The delay of process technology development schedule would disturb the progress of new product development, and fail to meet the customer's specifications. It might also affect cost reduction for products and impact the Company's revenue and profits.</p> <p><b>Mitigation measures :</b> Continue to invest manpower and funds in R&amp;D</p>	3 Occasionally	4 Severe
	New product development progress falls behind schedule	<p><b>Risk description :</b> The development of new products falling behind schedule might result in the inability to meet customers' specifications in a timely manner, and affect the Company's revenue and profits.</p> <p><b>Mitigation measures :</b> (1)Continue to invest manpower and funds in R&amp;D to accelerate the progress of R&amp;D(2)Maintain close relationship with customers, monitor trends in end product specifications in the market, and develop new products when appropriate.</p>	3 Occasionally	4 Severe
<b>Customer Service</b>	The financial position of customers deteriorates	<p><b>Risk description :</b> Not receiving payment on time affects the Company's revenue.</p> <p><b>Mitigation measures :</b></p> <ul style="list-style-type: none"> <li>(1)Weekly systematic report for tracking outputs</li> <li>(2)Confirms with customers on expected payment date</li> <li>(3)Follow up with customers on the actual payment date</li> <li>(4)Purchase accounts receivable insurance for high-risk customers.</li> </ul>	1 Rarely	2 Low
	Customer cancel orders	<p><b>Risk description :</b> Orders are concentrated in certain customers. When these customers significantly reduce purchases, it will lead to a sharp decline in sales/revenue.</p> <p><b>Mitigation measures :</b></p> <ul style="list-style-type: none"> <li>(1)Set annual, monthly and weekly goals for each major customer, and monitor and control the goals</li> <li>(2)Even out the average sales volume of large customers as much as possible to prevent a single customer from accounting for an excessively high percentage of annual revenue.</li> </ul>	1 Rarely	2 Low
	IT system malfunction	<p><b>Risk description :</b> The MIS system malfunction or disconnected from the internet, resulting in the inability to process orders and delay in delivery.</p> <p><b>Mitigation measures :</b> (1)CIM sets up backup server(2)CIM database for remote backup(3)Establish operating procedures for system anomalies(4)Regularly conduct emergency drills for system anomalies(5)Inter-site operating system (MIS)</p>	1 Rarely	2 Low

Material Topics	Risk factor	Risk description and mitigation measures	Probability of risk and trend (L)	Risk severity (C)
 Sustainable Supplier Management	Supplier cannot meet requirements	<p><b>Risk description :</b> Material preparation does not meet requirements due to natural disasters, diseases, transportation, and procurement concentration.</p> <p><b>Mitigation measures :</b>(1)Adjust shipping method(2)Purchase from different seller, adjust the quantity, and increase inventory.(3)Accelerate the evaluation of manufacturers of competing goods.</p>	3 Occasionally	2 Low
 Risk Management	Risk identification, emergency response drills, and business continuity plans were not completed and implemented	<p><b>Risk description :</b> If various risk factors are not immediately identified and managed to achieve early response, the Company will suffer operational losses when accidents occur.</p> <p><b>Mitigation measures :</b> Review risk management measures and implementation results in a timely manner through operations of the risk management organization, and minimize operational risks through constant response drills. · Please refer to "<a href="#">Risk Management</a>" in this report</p>	3 Occasionally	3 Moderate
 Climate Strategy	Higher GHG reduction targets and percentage of renewable energy use are set by policies and regulations	<p><b>Risk description :</b> Based on the TCFD risks and opportunities identification, the main high-risk items are energy policy and GHG reduction targets. The government has announced the Climate Change Response Act and the major electricity user clause, forcing companies to set carbon reduction and renewable energy goals. As the price of renewable energy increases each year, the cost of energy conservation and carbon reduction for companies will increase.</p> <p><b>Mitigation measures :</b> Nanya focuses on low-carbon product development, deployment of green technology production, adaptation to climate change risks, partners in sustainability, climate advocacy, and raising awareness when implementing low-carbon transformation and climate adaptation. · Please refer to "<a href="#">Nature and Climate Change Management</a>" in this report.</p>	3 Occasionally	3 Moderate
 Green Products	Products contain an excessive amount of hazardous substances	<p><b>Risk description :</b> Products contain hazardous substances in violation of EU and other countries' laws and regulations and standards of customers, and are rejected or fined by customers for returns, causing customers to sustain losses or affecting the Company's reputation.</p> <p><b>Mitigation measures :</b> Nanya has established a green product promotion organization to control the use of raw materials and products that comply with laws and regulations of the EU and other countries and standards of customers for hazardous substances in the product development and production process. Please refer to "<a href="#">Green Product Management: Hazardous Substance Free Product Management</a>" in the report.</p>	1 Rarely	3 Moderate
 Energy Management	Insufficient power supply or power outage	<p><b>Risk description :</b> Abnormal power supply affects production and customer orders..</p> <p><b>Mitigation measures :</b> Set up backup power systems, conserve electricity, and formulate response plans.</p>	2 Seldom	3 Moderate
 Water Management	Water shortage	<p><b>Risk description :</b> Abnormal water supply affects production and customer orders..</p> <p><b>Mitigation measures :</b> Prepare backup water sources and storage tanks, conserve water, and develop multiple water sources.</p>	1 Rarely	4 Severe

Material Topics	Risk factor	Risk description and mitigation measures	Probability of risk and trend (L)	Risk severity (C)
Waste and Recycling	Waste disposal companies fail to properly dispose of waste, causing environmental pollution and damaging ecology	<p><b>Risk description :</b> Nanya is jointly and severally liable at risk of being fined and having its reputation damaged.</p> <p><b>Mitigation measures :</b> Nanya periodically audits waste disposal companies and investigates their permit before signing contracts.</p>	3 Occasionally	3 Moderate
Employee Development	Competency gap	<p><b>Risk description :</b> Employees' ability were unable to solve technical problems of the Company's products</p> <p><b>Mitigation measures :</b> Improve professional and technical training of employees and regularly review training effectiveness. Optimize team project competitions and encourage employees to engage in technological innovation and present their results.</p>	2 Seldom	2 Low
Occupational Health and Safety	A strong earthquake of magnitude 5 or above occurs	<p><b>Risk description :</b> Complex disasters (fires, power outages, etc.) due to strong earthquakes may cause damage to machinery and equipment, resulting in suspension of operations and property losses.</p> <p><b>Mitigation measures :</b> Strengthen seismic resistance facilities of machinery and equipment in fabs, strengthen emergency response measures, and disperse risk through insurance.</p>	2 Seldom	3 Moderate
	Occurrence of occupational accident or occupational disease	<p><b>Risk description :</b> During the Company's operations or factory expansion period, personnel fail to implement safety regulations and personal protection, and occupational diseases or disabling injuries are caused by buildings, mechanical equipment, chemicals, or operating activities in the workplace.</p> <p><b>Mitigation measures :</b> Strengthen hazard identification and risk management through the occupational safety and health management system, and implement occupational safety and health-related laws and regulations to achieve the goal of zero occupational accidents.</p>	3 Occasionally	3 Moderate
Talent Retention and Employee Care	Employee Welfare Measures	<p><b>Risk description :</b> Understand the benefits provided by competitors and match the benefits when appropriate, in order to lower new employees' intention to find another job and prevent current employees from being lured away</p> <p><b>Mitigation measures :</b> Plan employee welfare measures to reduce employee inconvenience and lower turnover rate</p>	2 Seldom	2 Low
Human Rights	Workplace violence	<p><b>Risk description :</b> Workers are subject to workplace harassment from their employer, supervisor, colleague, service recipients, or third parties when performing their duties, resulting in physical or mental harm.</p> <p><b>Mitigation measures :</b> Regularly organize training on preventing unlawful workplace harassment (workplace bullying, sexual harassment), arrange on-site occupational doctors, psychologists and relevant units for evaluation, interviews and care, and establish a complete complaint handling mechanism.</p>	2 Seldom	3 Moderate
Community Involvement	Actively engage in external linkage activities	<p><b>Risk description :</b> Manage a stakeholder network to mitigate conflicts that may arise during business operations</p> <p><b>Mitigation measures :</b> Build a good reputation and strengthen influence through communication with stakeholders</p>	2 Seldom	2 Low

- Material topics, GRI topics, and impact boundaries

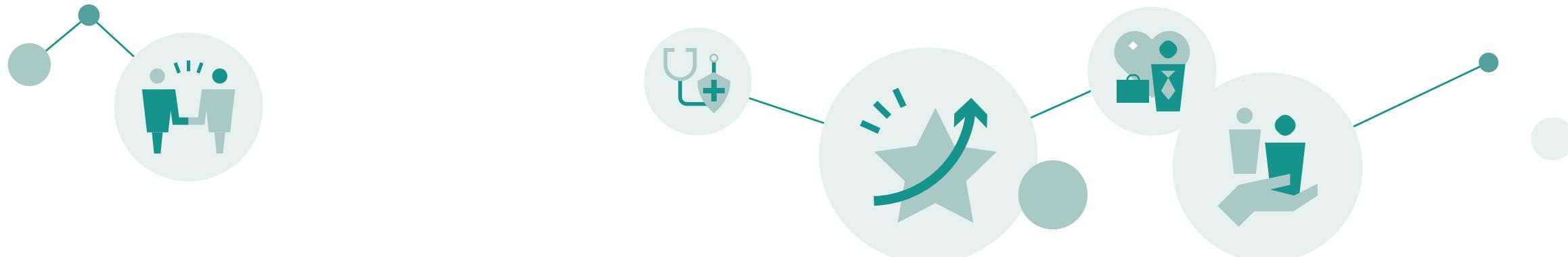
Material Topics	Risk and management approach for the topic	Corresponding GRI topic	Value chain					Corresponding section
			Product Design	Procurement	Manufacturing	Testing	Clients	
Economic aspect	Business Integrity	We continue to improve our corporate governance system and implement various business ethics policies and risk management mechanisms between suppliers, customers, and stakeholders to maintain the important cornerstone of corporate sustainable operation and value creation.	Anti-corruption (205) and Anti-competitive Behavior (206)		V	●	●	Integrity and Transparency
	R&D and Innovation	In order to maintain competitive advantages, we will research and develop advanced process technologies, and design new products of the next generation. Moreover, we will make forward-looking market plans, provide customers high value-added solutions, and establish high intelligent product lines to enhance efficiency.	R&D and Innovation*	●				Innovation
	Customer Service	We aim to provide comprehensive customer service. Through regular communication and visits, we are able to understand customers' opinions about our products and services, which help us grasp customers' needs. Thus, we will make improvements to enhance customer satisfaction as well as market image.	Customer Privacy (418)				V	Innovation
	Sustainable Supplier Management	We continue to promote sustainable performance of suppliers, improve resilience of supply chains, manage and control supply chain risks, and cooperate with suppliers to become the best partners in order to jointly move towards a sustainable future.	Procurement Practices (204), Supplier Environmental Assessment (308), and Supplier Social Assessment (414)		V			Responsible procurement
	Risk Management	We have established and maintained effective risk management mechanisms and constantly improved them, lowering operation cost to ensure corporate sustainable profits, and created a quality working environment to achieve the goals of corporate sustainable operation.	Risk Management*			●	●	Integrity and Transparency
Environmental aspect	Climate Change	We have included climate change risks into overall considerations of operations, and predict the probability of risk occurrence and levels of influence. We will also formulate risk response and mitigation plans, and crisis handling mechanisms in order to issue warnings as early as possible to mitigate the impact of climate risks on our operations.	Emissions (305)			●	●	Green
	Green Products	We use complete advanced processes to provide competitive advantages of optimized energy consumption, efficacy, and chip sizes. In addition, we manufacture more advanced, more energy-saving, more eco-friendly, and hazardous substance-free products for our customers, while lowering the environmental impact of the products.	Energy (302) and Emissions (305)	●	V	●	●	V
	Energy Management	We will improve the efficiency of energy use, promote energy saving measures, reduce greenhouse gas emissions, as well as lower environmental pollution to improve our image in society, and lower manufacturing cost while meeting the requirements of customers or government policies.	Energy (302)			●	●	Green
	Water Management	Through daily management, reductions and water recovery, we maximize the use of water resources and lower environmental pollution and production cost, while setting up response mechanisms for water shortage to mitigate the production impact risks resulting from water shortage.	Water and effluent (303)			●	●	Green
	Waste Management	We will improve the effective use of resources and reduce other problems deriving from pollution by recycling wastes. Moreover, we will provide waste to other industries for reuse, achieving the advantages of environmental impact reductions and circular economy development.	Waste (306)			●	●	Green

Specific topics of Nanya

Degree of involvement: Direct relation (●), indirect relation (○), and commercial relation (V)

Material Topics	Risk and management approach for the topic	Corresponding GRI topic	Value chain					Corresponding section
			Product Design	Procurement	Manufacturing	Testing	Clients	
Social aspect	Employee Development	Training and Education (404)			●	●		Talent
	Occupational Health and Safety	Occupational Health and Safety (403)			●	●		Talent
	Talent Retention and Employee Care	Market Presence (202) and Employment (401)			●	●		Talent
	Community Involvement	Local Communities (413)			○	○		Common Good
	Human Rights	Non-discrimination (406), Forced or Compulsory Labor (409)	V	●	●			Talent

Degree of involvement: Direct relation (●), indirect relation (○), and commercial relation (V)



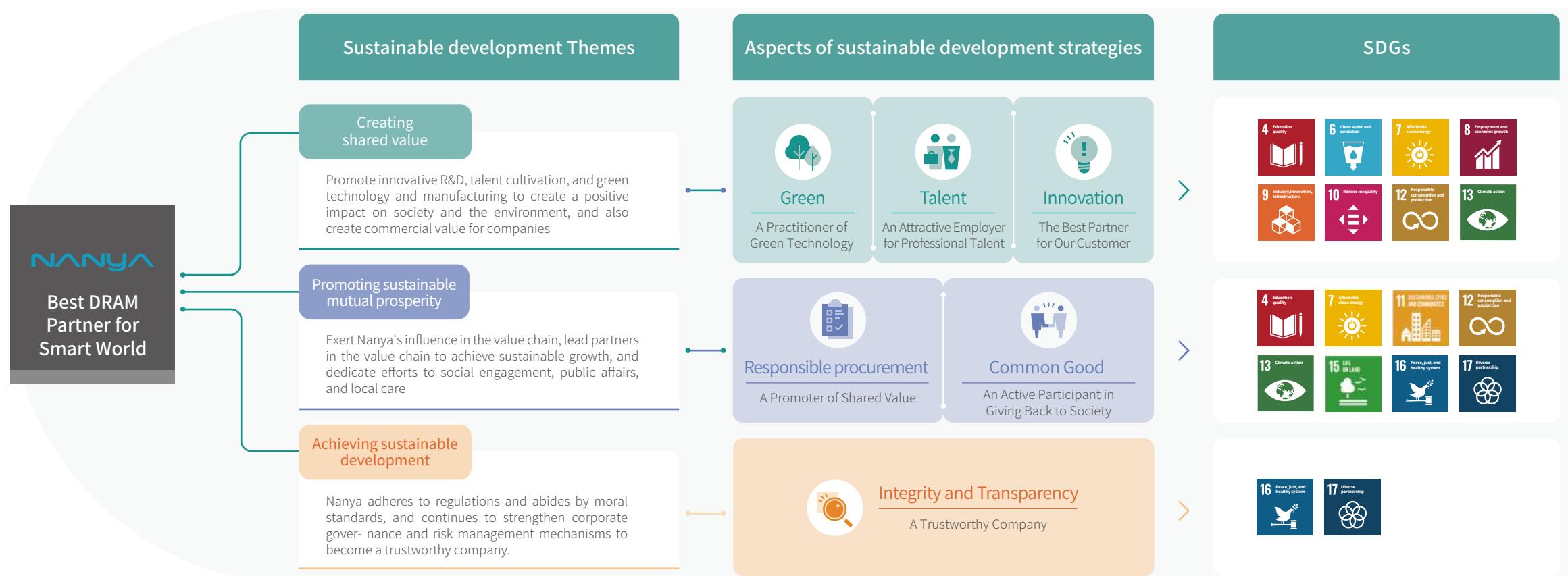
# 2.3 Communication with Stakeholders

Stakeholder	Communication method/frequency	Topic of concern	2023 outcome of communication
 <b>Employees</b> <p>Employees are considered as the most important asset of Nanya. We regard our employees' happiness as our responsibility, so we collaborate with our employees to implement the vision of healthy and happy workplace through comprehensive salaries and benefits, training and development, and a two-way communication system.</p> <p>Reference section : <a href="#">Talent</a></p>	<ul style="list-style-type: none"> <li>◆ <b>Internal announcements</b>/irregular</li> <li>◆ <b>Meetings</b>: Convene regular meetings, such as all-hands meetings (every half year)/executive meetings (quarterly)/production line operator meetings (quarterly)/various training and education courses</li> <li>◆ <b>Two-way communication platforms</b>: Nanya intranet, Nanya newsletter, and feedback/irregular</li> <li>◆ <b>Electronic questionnaires</b> : Course satisfaction, activity satisfaction, and Employee Engagement Survey/irregular</li> <li>◆ <b>Communication meetings with union representatives</b> : Discussions on labor and management issues/at least once a year</li> </ul>	<ul style="list-style-type: none"> <li>• Talent Retention and Employee Care</li> <li>• Employee Development</li> <li>• Economic Performance</li> </ul>	<ul style="list-style-type: none"> <li>◆ In 2023, two all-hands meeting were held in person and online.</li> <li>◆ Four executive meetings were held.</li> <li>◆ Four production line operator meetings were held.</li> <li>◆ A total of three Nanya newsletters were sent.</li> <li>◆ One in-person communication meeting with union representatives was held, and a diversity of channels were used for communication.</li> </ul>
 <b>Shareholders/ Investors</b> <p>Capital investment is a form of trust and support projected from the shareholders of Nanya. The Company has set up a dedicated unit for investor relations. Through providing transparent information on corporate operation and management strategies and financial policies to our investors, we achieve the goal of increasing the value of our shareholders' investment.</p> <p>Reference section : <a href="#">Integrity and Transparency</a></p>	<p><b>Regular shareholders</b></p> <ul style="list-style-type: none"> <li>◆ <b>Convene 1 shareholders' meeting</b> / at least once a year</li> <li>◆ <b>Publish annual reports and sustainability reports for shareholders' meetings in accordance with regulations</b> / annual</li> <li>◆ <b>Market Observation Post System information disclosure</b> / irregular</li> <li>◆ <b>Update important operational and financial information on the Investors Section of the website</b> / irregular</li> <li>◆ <b>Communication via phone calls and writing</b> / irregular</li> </ul> <p><b>Institutional shareholders</b></p> <ul style="list-style-type: none"> <li>◆ <b>Convene 4 institutional investor conferences</b> / quarterly</li> <li>◆ <b>Participate in 15 domestic and overseas institutional investor forums</b> / irregular</li> <li>◆ <b>Organize 60 institutional investor conferences</b> / irregular</li> <li>◆ <b>Respond to questions from investors by phone and in writing</b> / irregular</li> <li>◆ <b>Participate in sustainability and corporate governance evaluations by third-party organizations</b> / irregular</li> </ul>	<ul style="list-style-type: none"> <li>• Economic Performance</li> <li>• Green Products</li> <li>• Business Integrity</li> </ul>	<ul style="list-style-type: none"> <li>◆ Explain the company's operating status, technology development progress, and market trends to investors</li> <li>◆ Respond to sustainable development issues of concern to shareholders, including: Dedicated sustainability governance unit at the board level, human rights due diligence, climate risk and opportunity response method, and the Company's qualitative and quantitative results in technological innovation and patent strategies.</li> <li>◆ Continue to be selected as a constituent stock of international sustainability indices: DJSI World Index and Emerging Markets Index.</li> <li>◆ Participated in the Corporate Governance Evaluation organized by the Financial Supervisory Commission and ranked in the top 5% in the Corporate Governance Evaluation for the sixth time</li> <li>◆ Selected in the "Top 100 Global Innovators in 2023" announced by Clarivate for the first time</li> </ul>
 <b>Suppliers</b> <p>Suppliers form a significant link in the product production of Nanya. Through mutual trust partnership and a supplier management system, Nanya works with suppliers to build a sustainable value chain.</p> <p>Reference section : <a href="#">Responsible Procurement</a></p>	<ul style="list-style-type: none"> <li>◆ <b>Supplier information platform</b> / immediate</li> <li>◆ <b>Face-to-face review reports or meetings</b> / periodic</li> <li>◆ <b>Supplier questionnaire surveys, audits, and guidance</b> / annual</li> <li>◆ <b>Evaluation of suppliers' stability of delivery and product quality</b> / annual</li> </ul>	<ul style="list-style-type: none"> <li>• Green Factory</li> <li>• Occupational Health and Safety</li> <li>• R&amp;D and Innovation</li> </ul>	<ul style="list-style-type: none"> <li>◆ In regards to delivery and stock management, regular and irregular review meetings were held every month</li> <li>◆ 79 critical material suppliers 194 non-critical material suppliers. Collected 273 SAQ questionnaires with 100% response rate</li> <li>◆ Audited 89 significant suppliers, and the improvement rate reached 100%</li> </ul>

Stakeholder	Communication method/frequency	Topic of concern	2023 outcome of communication
 <b>Clients</b> <p>Customers are the best operational strategic partners of Nanya. Through joint efforts to create new thinking and technologies, we are able to grasp application trends of the industry and enhance the value of our products.</p> <p>Reference section : <b>Integrity and Transparency</b></p>	<ul style="list-style-type: none"> <li>◆ Technical support services / irregular</li> <li>◆ Visit customers and distributors / once every one to two months.</li> <li>◆ Technical exchange / at least once a year</li> <li>◆ Provide customers with training / irregular</li> <li>◆ Customer satisfaction survey / annually</li> <li>◆ Customer platform parameter measurement service and joint product verification services for customers / irregular</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable Supplier Management</li> <li>• Human Rights</li> <li>• R&amp;D and Innovation</li> </ul>	<ul style="list-style-type: none"> <li>◆ When customers need technical support, we will understand their needs and help them solve technical problems through in-person visits, phone calls, e-mails or text messages.</li> <li>◆ Visited customers to understand their needs and market conditions, in order to facilitate subsequent production and sales planning</li> <li>◆ Engaged in technical exchanges and provided training to customers' technical and engineering personnel, and completed a total of 92 technical exchanges and courses with customers</li> <li>◆ Completed customer satisfaction survey with 100% coverage of customers, and the score of satisfaction reached 94.6 points</li> <li>◆ Completed 947 cases of customer platform parameter measurement service and 28 joint product verification services for customers, assisted customers with early discovery of potential issues, and shortened the verification time to accelerate product launch</li> </ul>
 <b>Government</b> <p>Nanya continuously pays close attention to the up-to-date regulations of the government. In the face of the government's legal and regulatory requirements, we expect ourselves to exceed the statutory standards and actively respond to the policies proposed by the government.</p> <p>Reference section : <b>Green, Integrity and Transparency</b></p>	<ul style="list-style-type: none"> <li>◆ Financial statements / quarterly</li> <li>◆ Comply with government regulations, add, revise and implement company internal regulations / irregular</li> <li>◆ Comply with government regulations, add, revise and implement company internal regulations / irregular</li> </ul>	<ul style="list-style-type: none"> <li>• Climate Strategy</li> <li>• Business Integrity</li> <li>• Employee Development</li> </ul>	<ul style="list-style-type: none"> <li>◆ Continue to disclose annual financial statements and annual reports for shareholders' meetings ahead of schedule, echoing the Financial Supervisory Commission's "Corporate Governance 3.0 - Sustainable Development Roadmap"</li> <li>◆ Participate in internal communication of the Taiwan Semiconductor Industry Association to jointly discuss more reasonable and feasible industry-related environmental protection regulations</li> </ul>
 <b>Society</b> <p>A happy society is the most important cornerstone of corporate sustainable development. Local prosperity and local value preservation should not be contradictory but complement each other. Nanya expects itself to gain a firm foothold in business operation while it also actively engages in cultivating local connections, which will be integrated into local community reconstruction. This is an important subject when Nanya is considering its social responsibility.</p> <p>Reference section : <b>Green, Common Good</b></p>	<ul style="list-style-type: none"> <li>◆ Nanya social engagement theme activities on Talent cultivation, Environmental conservation, Good neighbor, and Humanistic care / average monthly activity</li> <li>◆ Posts on Facebook official fan page / irregular</li> <li>◆ Volunteer service activities / irregular</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable Supplier Management</li> <li>• Human Rights</li> <li>• R&amp;D and Innovation</li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>Talent cultivation :</b> 1,229 students received design thinking education; donated NT\$1 million in online learning equipment to rural elementary schools; and the Student Athletes Scholarship supported 4 national athletes and 4 elite players</li> <li>◆ <b>Environmental Conservation:</b> Nanya Earth Hour Facebook post received 1,735 interactions and 56 suppliers joined the initiatives; removed 184.3kg of Mikania Micrantha; and 305 people participated in environmental conservation activities</li> <li>◆ <b>Community Harmony :</b> Neighborhood public affairs promotion sponsorship totaling NT\$1,050,000</li> <li>◆ <b>Humanistic care :</b> Two charity sales and a small farmer's market were held, with employees spending approximately NT\$370,000 on goods, and the community revitalization activity series had a total of 8,520 participants</li> </ul>
 <b>Media</b> <p>The media is an important channel for the Nanya's external communication, so we have a spokesperson and an agent system. Moreover, we have set up a dedicated unit for public relations. Multiple communication channels and consistency in conveying the corporate messages to the media allow the media professionals who care about the Company to understand the latest information.</p> <p>Reference section : <b>Integrity and Transparency</b> <b>Common Good</b></p>	<ul style="list-style-type: none"> <li>◆ Held 4 press conferences / quarterly</li> <li>◆ Issued 23 press releases / irregular</li> <li>◆ Nanya's official website / irregular</li> <li>◆ Interviews with the spokesperson / irregular</li> <li>◆ Media luncheon / annual</li> </ul>	<ul style="list-style-type: none"> <li>• Business Integrity</li> <li>• Economic Performance</li> <li>• Climate Change</li> </ul>	<ul style="list-style-type: none"> <li>◆ Issue press releases related to the Company's operating status and sustainability for more effective communication with stakeholders</li> </ul>

## 2.4 Sustainability Strategies and SDGs

Nanya formulated three sustainable development themes – “Creating Shared Value,” “Promoting Sustainable Mutual Prosperity,” and “Achieving Sustainable Development” to drive the six aspects of sustainability strategies, in order to achieve the vision of becoming the “Best DRAM Partner for a Smart World.” Nanya examined material topics that stakeholders are concerned about in the six aspects, and matched them with the SDGs. Nanya’s sustainable development strategies can be linked to 10 SDGs, in which “creating shared value” makes the greatest contribution and can be linked to 8 SDGs. This means that “Innovation,” “Talent,” and “Green” are crucial to the sustainable development of Nanya, not only creating value through core competencies and operations, but also exerting Nanya’s influence to achieve the SDGs. Nanya sets future development goals for material topics under its sustainable development strategies, and the Corporate Sustainability Committee periodically examines performance and goal achievement.





## Sustainable development Themes : Creating shared value

- + Exceed
- ✓ Achieved
- Partially Achieved

## ◆ Innovation

Management Indicator	2023 Goals	2023 Implementation Performance	2024 Goals	2025 Goals	2030 Goals
<b>R&amp;D and Innovation</b>					
10nm DRAM technology R&D progress	Second generation 10-nm DRAM process and 8Gb DDR4 products reach standards for shipment	<span style="color: orange;">-</span> Second generation 10-nm DRAM process and 8Gb DDR4 products reach standards for shipment <sup>Note1</sup>	1. Second generation 10-nm DRAM process 8Gb DDR4 products reach standards for shipment	Third generation 10-nm DRAM process and 16Gb DDR5 products reached standards for shipment	Fourth-generation 10nm DRAM process and 16Gb DDR6 product development, EUV and HKMG technology introduction.
Cumulative number of intelligent systems developed	110 items	<span style="color: green;">✓</span> 110 items	130 items	Established high-performance production lines with AI-assistance and developed 150 AI application development	Realize deep integration of AI into smart manufacturing, and develop a total of 250 smart systems
Accumulated number of engineering personnel trained with AI theories and practical technological capabilities	450 people	<span style="color: green;">✓</span> 450 people	500 people		
<b>Green Products</b>					
Percentage of products that conform to hazardous substance free regulations and customers' specifications	100%	<span style="color: green;">✓</span> 100%	100%	100%	
Percentage of products that completed the product life cycle inventory	100%	<span style="color: green;">✓</span> 100%	100%	100%	100%
Percentage of raw materials that do not contain PFOA related substances	100%	<span style="color: green;">✓</span> 100%	100%		
Ratio of 20nm and other advanced processes	≥96%	<span style="color: green;">+</span> 97.4%	97.4%	≥96%	≥96%

Note 1: The second-generation 10nm DRAM process 8Gb DDR4 products were originally scheduled to meet shipping verification standards by the end of 2023, but the design is currently being improved due to functional integrity, yield and system compatibility issues, and the products are expected to meet product shipment verification standards in the second half of 2024.

Note 3: The measures to deal with the two cases of workplace violence are described in p.62.

## ◆ Talent

Management Indicator	2023 Goals	2023 Implementation Performance	2024 Goals	2025 Goals	2030 Goals
<b>Employee Development</b>					
Percentage of employees that are key talents	≥5.7%	<span style="color: green;">+</span> 6.3%	≥6%	≥6%	Key talents account for more than 10% of all employees
Annual planned course completion rate	≥65%	<span style="color: green;">+</span> 65.8%	≥65%	≥65%	
Internal employee substitution rate for job openings	≥100%	<span style="color: green;">+</span> 122.7%	≥100%	≥100%	Internal management position substitution rate for job openings ≥65%
<b>Talent Retention and Employee Care</b>					
Retention rate of key talents	≥98%	<span style="color: green;">✓</span> 98%	≥98%	≥98%	≥95%
Voluntary turnover rate	≤6%	<span style="color: green;">+</span> 4.58%	≤6%	≤6% Note 2	5~8%
Employee opinion survey reached the average approval rate	≥75%	<span style="color: green;">+</span> 75.3%	≥76%	≥78%	≥80%
<b>Human Rights</b>					
Percentage of employees that received training on human rights policies and procedures	100%	<span style="color: green;">✓</span> 100%	100%	100%	100%
Results of external audits or labor inspections	No major deficiencies	<span style="color: green;">✓</span> No major deficiencies	No major deficiencies	No major deficiencies	No major deficiencies in internal and external audits
Unlawful workplace harassment cases	0 cases	<span style="color: orange;">-</span> 2 cases <sup>Note 3</sup>	0 cases	0 cases	0 cases
<b>Occupational Health and Safety</b>					
Frequency of disabling injuries	<0.19	<span style="color: orange;">-</span> 0.41 <sup>Note 4</sup>	<0.18	<0.17	<0.14
Severity of disabling injuries	<6.5	<span style="color: orange;">-</span> 18 <sup>Note 4</sup>	<6.2	<5.9	<5.1
In-plant self-inspection rate	>93.9%	<span style="color: green;">+</span> 95.2%	>93.9%	>94%	>94.5%
Number of proposals engaging all employees for safety and health	>1,150	<span style="color: green;">+</span> 1,215	>1,440	>1,800	Maintaining a 100% completion rate for on-site safety observation and interviews by senior management.
Occupational diseases caused by chemical exposures	Maintained at 0 cases	<span style="color: green;">✓</span> Maintained at 0 cases	0 cases	0 cases	0 cases

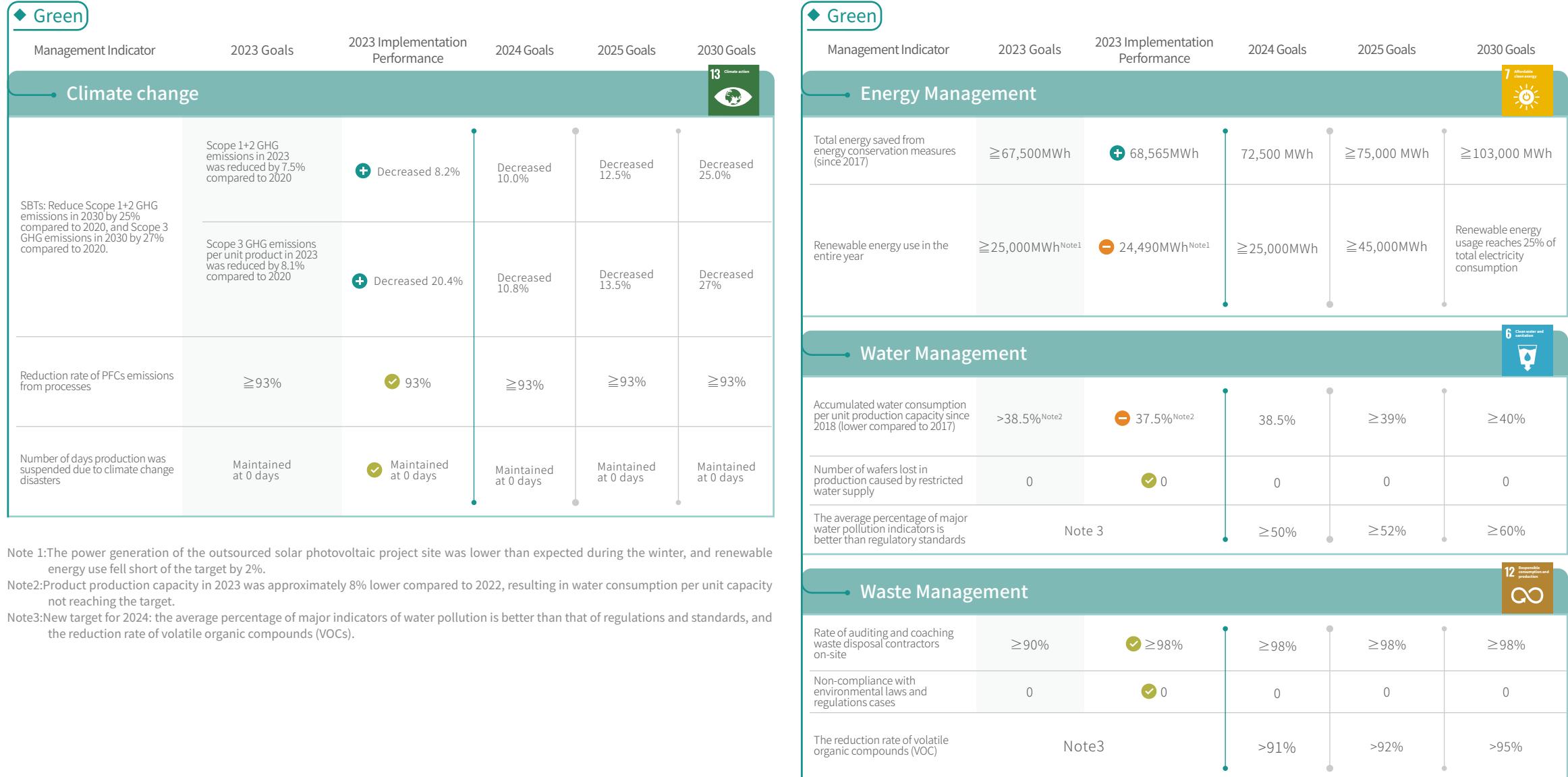
Note 2: The estimated market conditions of the industry are in line with 2024, so the voluntary turnover rate target for 2025 will be maintained.

Note 4: A total of 3 occupational accidents occurred in 2023 were physical injuries (falls, collisions), and the improvement measures are shown in p.99.



## Sustainable development Themes : Creating shared value

- Exceed
- Achieved
- Partially Achieved



Note 1:The power generation of the outsourced solar photovoltaic project site was lower than expected during the winter, and renewable energy use fell short of the target by 2%.

Note2:Product production capacity in 2023 was approximately 8% lower compared to 2022, resulting in water consumption per unit capacity not reaching the target.

Note3:New target for 2024: the average percentage of major indicators of water pollution is better than that of regulations and standards, and the reduction rate of volatile organic compounds (VOCs).



## Sustainable development Themes : Promoting sustainable mutual prosperity

## ◆ Responsible procurement

Management Indicator	2023 Goals	2023 Implementation Performance	2024 Goals	2025 Goals	2030 Goals
<b>Sustainable Supplier Management</b>					
Percentage of non-conflict minerals used in wafer product lines	100%	✓ 100%	100%	100%	100%
Percentage of significant suppliers that completed the self-evaluation questionnaire	100%	✓ 100%	100%	100%	100%
Completion rate of deficiency improvements by suppliers with high sustainability risk in audits	100%	✓ 100%	100%	100%	100%
Percentage of suppliers that signed the Supplier Code of Conduct	100%	✓ 100%	100%	100%	100%
Completion of audits and guidance for significant suppliers	100%	✓ 100%	100%	100%	100%
Supplier sustainability counseling cases	≥2	✓ ≥2	≥2	≥2	≥3

## ◆ Common Good

<b>Social Engagement</b>					
Annual growth rate of community involvement hours	≥10%	✓ 18%	≥10%	≥10%	Growing by more than 50% compared to 2025.
Number of volunteers in the service team <sup>Note</sup>	≥100 people	+ 105 people	≥150 people	As a percentage of total employees ≥ 5%	
Accumulative semiconductor talent cultivated (since 2021)	≥750 people	+ 878 people	≥1,100 people	≥1,500 people	Promoting semiconductor education to over 5,000 participants per year.



## Sustainable development Themes : Achieving sustainable development

## ◆ Integrity and Transparency

Management Indicator	2023 Goals	2023 Implementation Performance	2024 Goals	2025 Goals	2030 Goals
<b>Business Integrity</b>					
Material violations of regulations	0 cases	✓ 0 cases	0 cases	0 cases	0 cases
Corruption cases	0 cases	- 1 cases <sup>Note 1</sup>	0 cases	0 cases	0 cases
Violation of employee and labor ethics	0 cases	- 1 cases <sup>Note 1</sup>	0 cases	0 cases	0 cases
Violation of trade secrets	0 cases	✓ 0 cases	0 cases	0 cases	0 cases
<b>Risk Management</b>					
Number of regular quarterly meetings	4	✓ 4	4	4	4
Annual reports to the Board of Directors	2	✓ 2	2	2	2
Items of the emergency response plan completed each year	55	+ 69	55	55	55
Stress test items executed each year	7	+ 9	7	7	7
Percentage of employees that received risk management training	100%	✓ 100%	100%	100%	100%
<b>Customer Service</b>					
Customer satisfaction score	≥91	+ 94.5	≥91	≥91	≥91
Number of customer platform parameter measurement services	935	+ 952	940	950	960
Number of joint product verification services for customers	24	+ 28	25	25	28
Number of customer technical exchange and courses	92	✓ 92	92	96	100

Note 1 : The anti-corruption actions are described in p.187

## 2.5 Sustainable Impact Valuation

Companies can only create long-term value for stakeholders by considering the external costs and benefits brought by their operations to society and the environment while it pursues growth and profit. This is one of the most important topics in corporate sustainability. Nanya began working with academia in 2017 in measuring the potential impact of value chain activities on the well-being of mankind, society, and the economy from a profit and loss perspective based on the Triple Bottom Line (TBL) management concept. In 2023, Nanya generated NT\$29.9 billion in revenue from its operations, and also paid taxes, distributed dividends, paid employee salaries, and recognized depreciation and amortization. We not only had a positive impact on stakeholders, but also contributed to sustainable social and economic growth. However, occupational accidents resulted in NT\$16.17 million in social cost, and the environmental footprint and resource consumption of our production process incurred NT\$840 million in environmental cost. Besides creating NT\$107 billion in output value in the upstream supply chain, we also incurred NT\$3.8 billion in environmental costs. In the downstream sales stage, Nanya's DRAM products are used in television, network communications, computer, storage, digital camera, and surveillance cameras, and have created NT\$39 billion in output value in customers' industries, but incurs NT\$5.5 billion in environmental costs in the terminal products and waste stage.

Based on the analysis results, the environmental impact derived from the supply chain and product use are highly significant, highlighting the importance of sustainable supplier management and green product management. In supplier sustainable management, Nanya annually identifies suppliers with environmental hotspots through Life Cycle Assessment, and collaborates with them to achieve carbon reduction goals, mitigating the environmental impact derived from procurement demands. Regarding green products, Nanya continuously enhances R&D capabilities, increasing the R&D investment to revenue ratio by 44.6% compared to the previous year, strengthen the energy efficiency of its products. Nanya will continue to improve and strengthen the management framework of sustainable impact valuation to measure and manage the contributions to social welfare brought by business operations and value chain activities.

2023 Nanya sustainable impact valuation results

**NT\$162.1 billion** Socioeconomic contributions of value chain

Procurement demand has driven the industry chain's development and created 3x the economic value; sales of DRAM products created 1.85x the output value in customers' industries.

**>90%** Environmental external cost comes from upstream and downstream in the value chain

From an environmental perspective, the environmental footprint in the upstream supply chain and downstream product sales is greater than own operations, showing the importance of Nanya's green supply chain management and product energy and material conservation on the well-being of society.



- Nanya sustainable impact valuation results

Supply chain					Manufacturing and operation					Products or services							
Impact Item	Monentory (NTD)				Impact Stakeholders	Impact Item	Monentory (NTD)				Impact Stakeholders	Impact Item	Monentory (NTD)				Impact Stakeholders
	2020	2021	2022	2023			2020	2021	2022	2023			2020	2021	2022	2023	
Increase the output value of the supply chain	+ 103,172,735	103,793,611	140,272,689	107,005,071	Suppliers, society  Supplier, environment	Stakeholder gross value added (GVA)	+ 33,539,921	53,786,860	49,704,305	16,112,930	Customers, shareholders/investors, employees, suppliers, society  Environment  Employees, society	Increase the output value of the industry chain	+ 85,619,989	116,069,139	73,384,435	39,016,346	Clients, society
Supply chain GHG emissions	- 1,025,045	990,425	1,320,618	1,046,277		Operational GHG emissions	- 710,664	649,924	682,342	680,376		Product use	- 5,076,723	4,353,044	3,321,955	5,496,853	Clients, environment
Supply chain air pollution emissions	- 2,506,843	2,444,353	3,269,380	2,740,687		Operational water use	- 149,828	153,722	150,663	150,529		Product waste disposal	- 2,192	2,044	1,428	1,442	
Supply chain wastewater discharge	- 4,494	4,419	5,787	4,736		Operational wastewater discharge	- 1,486	1,243	1,237	530							
Supply chain waste disposal	- 13,240	13,470	19,138	15,451		Operational air pollution emissions	- 1,841	1,752	1,769	1,833							
						Operational waste disposal	- 882	2,273	3,470	1,770							
						Employee health management	+ 1,513	1,708	1,736	1,793							
						Employee occupational accidents	- 17,506	28,797	13,588	16,167							

◆ Social externalities    + Positive (+)  
◆ Environmental externalities    - Negative (-)

Note 1: The impact target "Society" refers to the interpersonal network with common norms, common values and consensus that can facilitate cooperation within and between groups (Social and Human Capital Protocol, 2019); "Environment" refers to the stock of renewable and non-renewable natural resources on the Earth (for example: plants, animals, air, water, soil, minerals) combined to generate benefits or services for humans (Natural Capital Protocol, 2016).

Note 2: The input-output model is used to calculate the output value of the supply chain, including the economic benefits derived from industry chain supply and demand driven by procurement needs, as well as the accompanying environmental issues. References include the Report on Input-Output Statistics (Directorate-General of Budget, Accounting and Statistics, 2020), Green GDP Report (Directorate-General of Budget, Accounting and Statistics, 2021) and Energy Balances in Taiwan, R.O.C. (Bureau of Energy, 2021).

Note 3: Gross value added (GVA) assesses the difference between inputs during a company's business operations and the final output, and takes into account the original input and public expenditure. These economic activities bring benefits to different stakeholders, including net profit (customers/shareholders/investors), salary and benefits (employees), depreciation/amortization/lease (suppliers), and taxes (society). Due to the declining market conditions of global DRAM revenue in 2023, the company's added value revenue for stakeholders will show a downward trend compared with the previous year. Nanya will adjust its production and marketing strategy to allow revenue to rebound quarter by quarter. And maintain routine and effective control of tax risks, fully protect the rights and interests of the company and investors, and create long-term value for the company.

Note 4: Factors that affect environmental externalities include the social cost of carbon, cost of human health loss, and cost of ecosystem damages derived from GHG, air pollution, wastewater, waste, and water resource consumption. The US EPA (2016) and OECD (2012) are referenced for the conversion to monetary value.

Note 5: Employee health management achieves early discovery of high blood pressure, high blood cholesterol, high blood sugar, and obesity through regular health examinations, and various plans are formulated to appropriately control the risk of cardiovascular disease among employees. The WHO (2008) and Chieh-Hsien Lee (2009) were referenced for related coefficients.

Note 6: The social costs derived from occupational accidents are calculated by taking into account factors such as productivity loss due to work injuries, occupational accident compensation, and the amount willing to pay to avoid occupational accidents. The UK HSE (2017), Jiune-Jye Ho (2005), and Institute of Labor, Occupational Safety and Health (2013) were referenced for the methodology.

Note 7: For products and services, we focus on the first five major end-product applications of DRAM products, and in terms of supply and demand between sales amount and customers' industry production value, evaluate the indirect economic value created by product sales and the environmental impact derived from the stages of product use and disposal.

Note 8: Taking into account differences in economic conditions across countries, the value coefficient is adjusted based on the Gross National Income (GNI) measured by Purchasing Power Parity (PPP) in each region, and the monetary value is determined with 2017 as the baseline. The OECD (2012) and PwC UK (2015) are referenced for the methodology.

# 3 Innovation

## The Best Partner for Our Customers

3-1 R&D and Innovation	45
3-2 Green Product Development	50

"Innovation" is one of the driving forces for Nanya Technology Corporation's growth and competitiveness and one of our four core values. We shall strengthen product research, development, and manufacturing to satisfy customers' diverse demands and become the best memory partner for the smart generation.

**25.3%**

In 2023, R&D expenses accounted for 25.3% of revenue and R&D personnel accounted for 28.9% of employees. These demonstrate Nanya's focus on technological development.

**380 million**

A total of 110 AI applications were developed and accomplished as of the end of 2023, and the annual benefits reached NT\$380 million.

**953 cases**

A total of 953 patents were granted in 2023, an increase of 141 cases compared to 2022.



# Strategy and Performance of Material Topics

Strategy of Material Topics	2023 Goals	Performance and Goal Achievement	2024 Goals
<b>R&amp;D and Innovation</b> <ul style="list-style-type: none"> <li>Design new next-generation products</li> <li>Develop 10nm-class process technologies</li> <li>Enter the high-density server module market</li> <li>Smart factory</li> <li>Elevate numbers of patents newly granted</li> </ul>	<p>Second generation 10nm DRAM process 8Gb DDR4 products reach shipment verification standards</p> <p>Complete design of second generation 10nm 16Gb DDR5 products and have pilot-run wafers outputs</p> <p>Cultivate a total of 450 engineers with AI theories and development capabilities</p> <p>Complete a total of 110 items for AI application development</p> <p>-</p>	<p>Note: Completed the verification of the second generation 10nm DRAM process 8Gb DDR4 products and component technology reliability</p> <p>Completed design of second generation 10nm 16Gb DDR5 products and had pilot-run wafers outputs</p> <p>Cultivated a total of 450 engineers with AI theories and development capabilities</p> <p>Completed a total of 110 items for AI application development</p> <p>-</p>	<p>Second generation 10nm DRAM process 8Gb DDR4 products reach shipment verification standards</p> <p>Second generation 10nm 16Gb DDR5 products reach shipment verification standards</p> <p>Cultivate a total of 500 engineers with AI theories and development capabilities</p> <p>Complete a total of 130 items for AI application development</p> <p>Obtain &gt;250 newly Taiwan granted patents</p>
<b>Eco-friendly products</b> <p><b>Technology improvements</b> R&amp;D of advanced and high-efficiency products to assist consumers in lowering energy consumption and reducing carbon emissions during the usage of products</p> <p><b>Consider product life cycle</b> Improve the environmental friendliness of products on the environment</p> <p><b>Hazardous substance management</b> Continue to promote replacement plans for hazardous substances in the production process</p>	<p>Ratio of 20nm and other advanced processes accounted for 96% and above</p> <p>Complete product life cycle inventory on 100 percent of products</p> <p>100 percent of products conform to hazardous substance free regulations and customers' specifications</p> <p>100 percent of materials contained zero perfluorooctanoic acid (PFOA) or related substances</p>	<p>97.4%</p> <p>100%</p> <p>100%</p> <p>100%</p>	<p>Ratio of 20nm and other advanced processes accounted for 96% and above</p> <p>Complete product life cycle inventory on 100 percent of products</p> <p>100 percent of products conform to hazardous substance free regulations and customers' specifications</p> <p>100 percent of materials contained zero perfluorooctanoic acid (PFOA) or related substances</p>

◆ Exceed   ◆ Achieved   ◆ Partially Achieved

Note: The second-generation 10nm DRAM process 8Gb DDR4 products were originally scheduled to meet shipment verification standards by the end of 2023, but the design is currently being improved due to functional integrity, yield and system compatibility issues, and the products are expected to meet product shipment verification standards in the second half of 2024.

# 3.1 R&D and Innovation

Smart products have comprehensively improved the quality of life for human beings and assisted with energy conservation and carbon reduction. Therefore, every year, Nanya invests large amounts of resources in technological development of new DRAM products, next generation processes, and advanced 3D stacked packaging. The developments provide customers with value-added services, and reinforce protection for intellectual property rights and trade secrets, and accelerate the move towards product diversification and the development of smart factory. Look forward to the future, Nanya will continue to devote itself to the developments of the advanced third/fourth generation 10nm DRAM process and DRAM products.

## Innovation Committee

In order to implement innovation management, create a culture of innovation, and enhance the Company's innovative energy and value, Nanya specially set up the Innovation Committee, a cross-departmental unit, formed by the senior management and chaired by Executive Vice President (EVP). The Innovation Committee is positioned to coordinate and plan the overall innovation strategy, setting short, medium and long-term goals, and examine the progress of important projects, including management indicators of open innovation projects, product innovation projects, and process innovation projects. In 2023, Nanya completed the design of second generation 10nm 16Gb DDR5 products and had pilot-run wafers outputs; in addition, in AI applications, we cultivated a total of 450 engineers with AI theories and development capabilities, and completed 110 AI systems between 2019 and 2023.



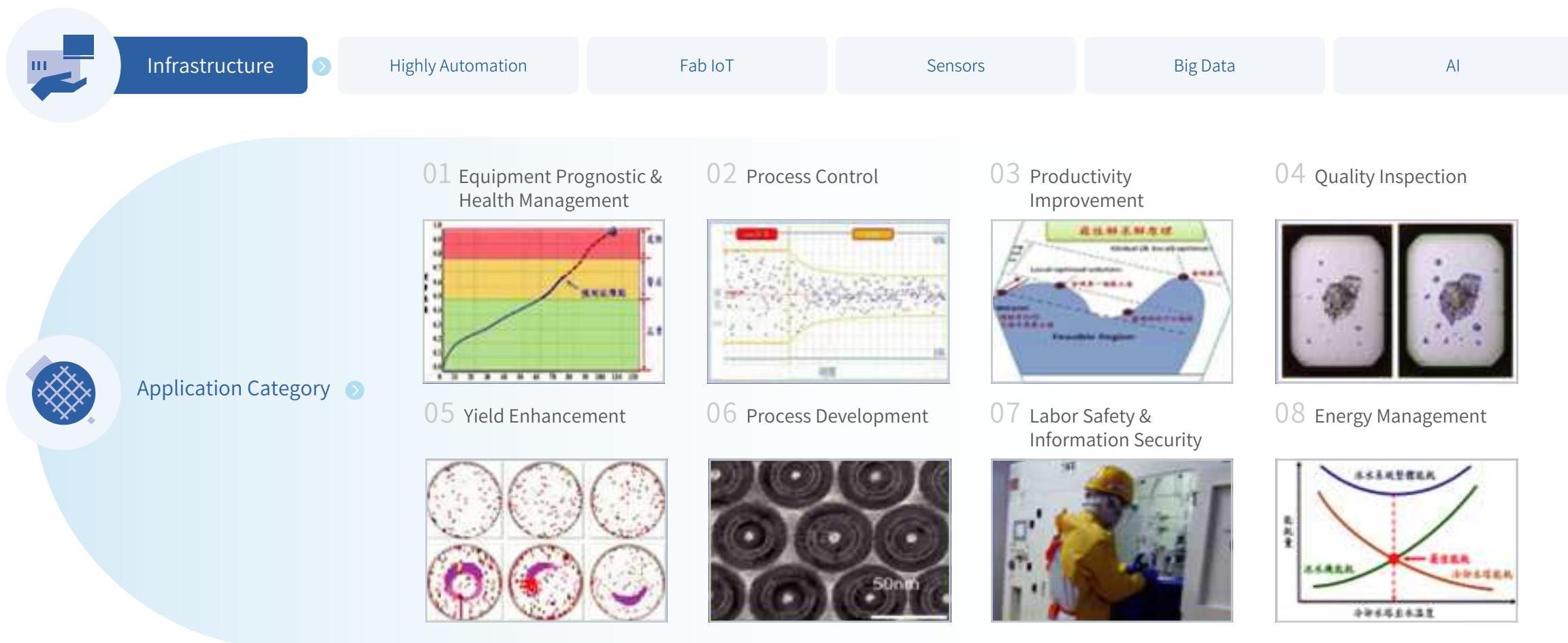
**Investment in Innovative R&D**

Year	2020	2021	2022	2023
Operating revenue (A) 100 Million NTD	610	856	570	299
R&D and innovation expenses (B) 100 Million NTD	51.4	75.0	78.4	75.8
R&D expenses as a percentage of operating revenue (B/A)	8.4%	8.8%	13.8%	25.3%
Total number of employees (C)	3,542	3,554	3,685	3,647
Total number of R&D personnel (D)	922	953	1,000	1,054
R&D personnel as a percentage of all employees (D/C)	26.0%	26.8%	27.1%	28.9%

## Nanya Smart Factory



Nanya's 12-inch fab has all essential infrastructure that a smart factory requires, including highly automated production lines, Fab IoT, large numbers of sensors, and big data integration. The fab utilizes AI technology in eight important categories, including Equipment Prognostic & Health Management, Process Control, Productivity Improvement, Quality Inspection, Yield Enhancement, Process Development, Labor Safety & Information Security, and Energy Management. Currently, Nanya has developed several innovative applications in production line, including the machinery diagnosis, advanced process control, optimization of production scheduling, wafer quantity prediction, smart handling, wafer probe testing, defect image recognition, wafer pattern recognition, and automatic measurement of engineering images. These applications can effectively enhance overall operation efficiency, and make important contributions for manufacturing key indices - Yield, Quality and Output.



## • AI Development Benefits and Promotion

By the end of 2023, Nanya has completed 110 AI applications that can effectively improve yield and quality, reduce wafer scrap ratio, increase tool utilization, lower equipment maintenance costs and raw material consumption, increase production capacity and flexibility, and more effectively use human resources. The annual benefits reach NT\$380 million. As we continue to develop new AI applications, we expect a total benefit to reach NT\$2 billion in the next 5 years (2024-2028).

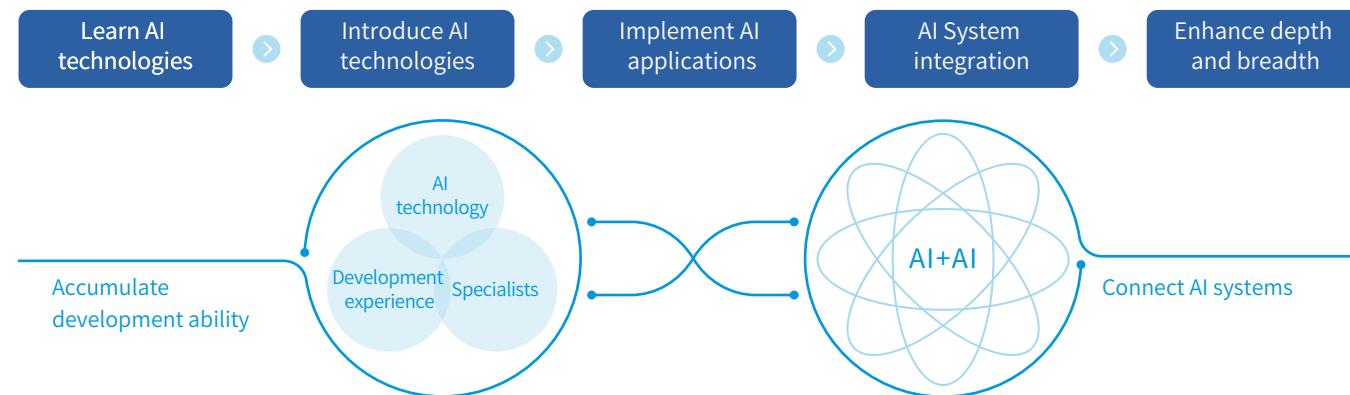
Innovation and promotion are mainly carried out through three major platforms – AI application development, AI technology research, and AI education.

- **AI application development platform:** Integrated domain experts, IT experts and statistics experts, a total of 60 engineers to systematically develop AI systems.
- **AI technology research platform:** Strengthened AI team's technical capabilities, and systematically implemented machine learning, deep learning (CNN<sup>1</sup>, RNN<sup>2</sup>, object detection), and edge computing technologies.
- **AI education platform:** AI training courses were conducted by internal and external instructors, and trained a total of 450 engineers with AI theories and practical technical abilities.

<sup>1</sup> CNN :Convolutional Neural Networks

<sup>2</sup> RNN : Recurrent Neural Networks

## AI Application Development Plan

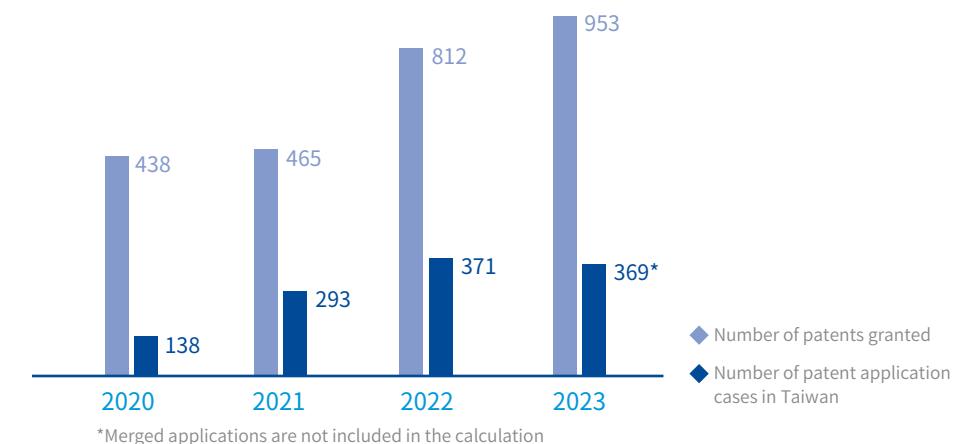


Nanya established an AI applications team in 2018, learned and introduced AI technology, gradually implemented AI in various departments, and connected more smart systems, such as yield enhancement system, smart production system, and general image recognition system that can make production line operate more effectively. In the future, we will continue to strengthen AI development, adopt advanced AI technologies, and expand AI applications to different departments. With that, Nanya can comprehensively improve overall manufacturing performance.

## Status and Strategy of Intellectual Property

Besides working with world-class talents to adopt advanced technologies, Nanya has spared no effort in the development of proprietary technologies, and has accumulated considerable intellectual property over the years. As of the end of 2023, Nanya has accumulated over 6,800 patents, protecting technological development results and securing a competitive advantage, while flexibly utilizing intellectual property rights to effectively defend against frivolous patent lawsuits. This provides a powerful tool for technology and business competition.

### Nanya's patent performance



### Critical legal cases related to intellectual property involving Nanya were as follows

1. The U.S.-based Monterey Research LLC. accused Nanya and subsidiaries Nanya Technology USA and Nanya Technology Delaware in the U.S. District Court for the District of Delaware for patent infringement in November 2019. We have engaged counsels to properly handle the case to protect our rights and interests.

2. The Irish company Polaris Innovations Limited filed a lawsuit at the U.S. District Court for the Eastern District of Texas against the Company for patent infringement February 2023. We have engaged counsels to properly handle the case to protect our rights and interests.

## Nanya intellectual property strategy

Create the most favorable R&D and production environment with intellectual property, and then use the results of excellent production and R&D to recreate intellectual property rights that are practical and good.



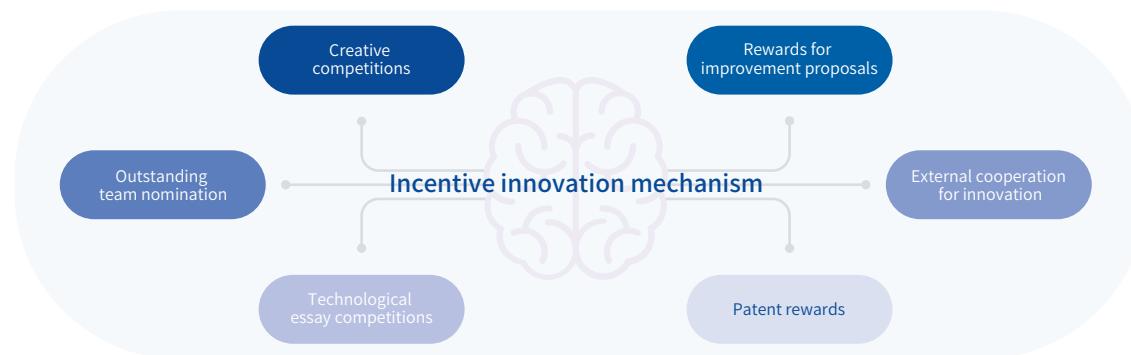
Make full use of intellectual property to create a favorable environment for the Company and the industry.

Manage intellectual property with a suitable system, and protect trade secrets with a rigorous network for information security.

In addition to patents, trade secrets are also an extremely important intellectual property in the semiconductor industry. Nanya has been actively implementing advanced process technologies and developing new products and innovative sales models in recent years. Besides applying for patents to protect the intellectual property, any technology, method, process, formula, program, design, or other information that can be used for production, sales, or business are trade secrets of Nanya strictly protected by information security systems, as long as they are confidential and possess economic value. Nanya obtained Taiwan Intellectual Property Management System (TIPS) Level A certification in December 2023, showing that our intellectual property management system has been recognized.

## Incentives for Innovation

"Innovation" is one of the driving forces behind Nanya's technological growth and competitiveness enhancement and one of our core values. To encourage employees to propose innovative ideas, the Company holds annual innovation competitions, offers patent rewards and rewards for improvement proposals, and organizes essay competitions and outstanding team competitions. We recognize and reward innovative ideas proposed by each employee, hoping that all employees will internalize the spirit of innovation.

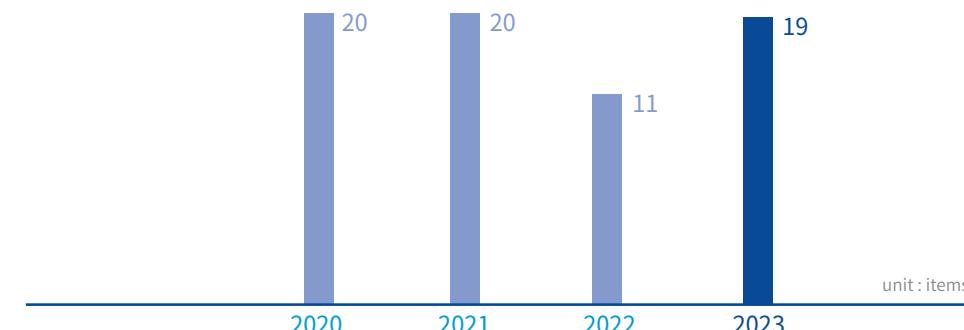


## Results of Innovative Activities

Year	2020	2021	2022	2023	
Patent rewards	Number of patents granted	438	465	812	953
Rewards for improvement proposals	Number of proposals	207	207	212	193
	Actual annual benefit (Thousand NTD)	1,583,318	882,517	756,744	755,784
Technological essay competitions	Number of entries	79	93	103	118
Outstanding team competitions	Number of entries	17	13	17	16

In addition, we attach great importance to technology R&D. We incorporate external innovation into our R&D in open and innovative ways, and accelerate and expand technology R&D. We have worked on basic research, product design, and product testing for next generation memory with National Taiwan University, National Tsing Hua University, National Yang Ming Chiao Tung University, National Central University, Ming Chi University of Technology, Chang Gung University, imec, Industrial Technology Research Institute, and testing equipment suppliers. We have also partnered with manufacturers of masks and machinery in joint development of 10nm process and materials. Through customized Wafer Level Packaging and multiple application products developed rapidly with downstream system developers, Nanya has launched new open innovation programs every year in the past four years in coordination with the Company's short, medium, and long-term R&D plans.

## Technology R&D open innovation program



## 3.2 Green Product Development

Nanya and its clients both aim to protect our green Earth. We implemented the Life Cycle Thinking (LCT) and the Design for Environment. For a long time, we have made an effort to research and develop advanced and highly efficient eco-friendly products. We not only have helped clients develop products with low energy consumption design, but also have engaged in hazardous substance management and responsible minerals procurement management through our influence on supply chains. In order to continue improving the environmental friendliness level of products, we have formulated environmental health and safety performance indicators, promoting various waste reduction and resource reuse, greenhouse gas reduction and other projects. In coordination with the Green Product Promotion Committee (GPPC) on green product management, right from the start of product development, we consider seven aspects of environmental impacts, including procurement, manufacturing, transportation, product use, disposal, and recycling in order to identify improvement opportunities to increase environmental benefits.

### Nanya green design matrix

	Procurement	Manufacturing	Transportation	Product use	Disposal and recycling
Energy efficiency	V	V	V	V	
Greenhouse gas emissions	V	V	V	V	
Material reduction	V	V	V		
Responsible mineral procurement	V				
Hazardous substances	V	V			V
Waste reduction		V			V
Water resources reduction		V			

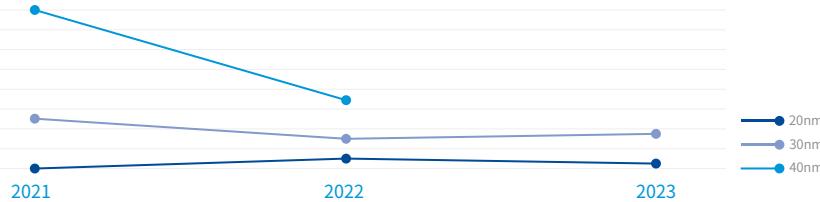
## Life Cycle Assessment

In response to environmental requirements, we used the Simapro, a life cycle assessment tool, to conduct life cycle assessment on 100% of our products, calculated environmental footprints of products, and identified directions for future improvements. In the meantime, the Company would use the product environmental data and coefficients accumulated through analysis processes to build a decision support system for green product development. The Company gave multiple considerations on the requirements, and conducted quantitative life cycle assessment on products in each life cycle stage. Pursuant to the contents of quantifying and communicating requirements and guidelines for the Product Environmental Footprint of the life impact assessment under the ISO 14040s series, the Company participated in product environmental footprint declarations, and referred to the regulations of ISO 14064-1 Greenhouse Gas Inventory and ISO 14067 Carbon Footprint International Standard to execute the declarations. The analyzed products were various DRAM we manufactured, and boundaries of the life cycle system included raw materials manufacturing, transportation, wafer manufacturing, packet packaging, module packaging, product use, and recycling/disuse. Because the Company's main production was memory wafer manufacturing, other system boundaries were outsourced. Therefore, the main system boundary was wafer manufacturing. Among 14 measures to improve environmental footprint sources, reductions in greenhouse gas emissions from the three main sources listed in the results of the 2023 product life cycle assessment are as follows:

### Three main hotspots of greenhouse effect listed in the 2023 product LCA results

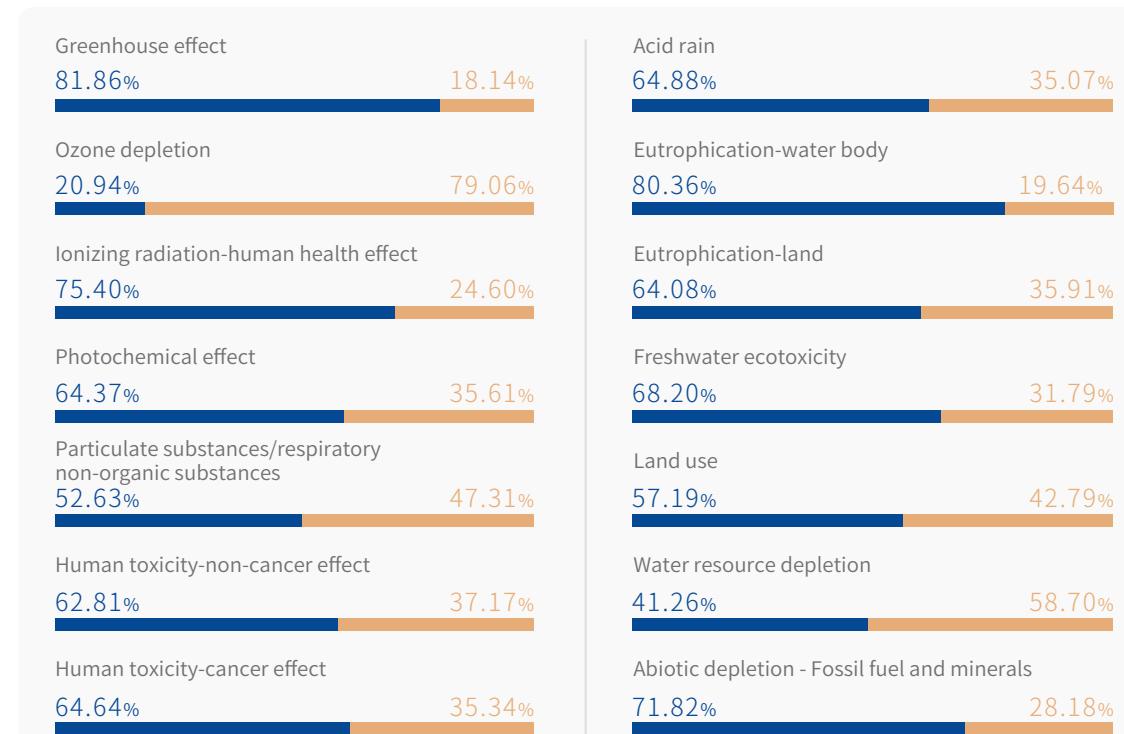


## Trends in product carbon footprint 20nm/30nm/40nm processes



Product life cycle inventory for 2023 was completed. We used staple product SA30 memory to show the ratio of 14 items of environmental footprints in stages of raw materials and manufacturing process. Manufacturing process at factories accounted for about 81.86% of greenhouse effect, and procurement of raw materials accounted for around 18.14% of greenhouse effect.

## Proportion of total emissions accounted for by raw materials and manufacturing phases of SA30

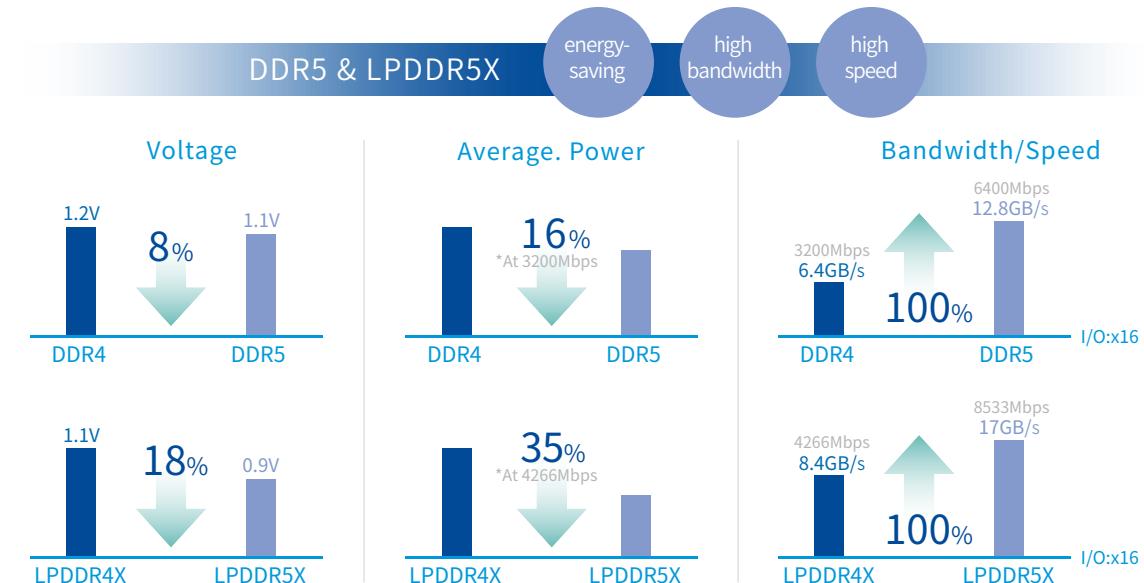


◆ Total emissions in manufacturing stage      ♦ Total emissions in raw material stage

## Green Product Design

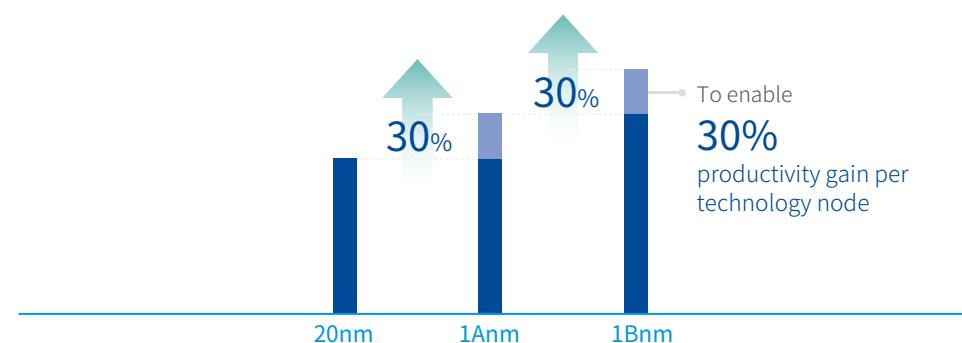
Nanya has been dedicated to the research, development, manufacturing, and sales of DRAM, becoming the fourth largest DRAM company worldwide. Moving towards the smart era, DRAM is a key component to be used in the applications of smart city, smart home, smart office, unmanned vehicles, internet of things (IoT), cloud, artificial intelligence (AI). With continuous promotion of independently developing process technology, Nanya started researching and developing 1A and 1B nanometer technologies in 2017, and planned the development of products with high integration, faster speed, and lower energy consumption, such as DDR4/DDR5. Different from the past methods of cooperating with other DRAM companies on technology development or technology licensing, Nanya independently developed 1A/1B technologies. Product verification for 1A technology was completed in 2022. 1A technology is the first 10nm-class DRAM technology of a Taiwanese company, proving that Taiwan's DRAM technology development ability is among the top companies across the world. Meanwhile, we have constantly expanded our existing product lines into diverse applications, providing clients with whole product solutions to become the best memory partner in the smart era. Product verification of 1B technology is expected to be completed in 2024. 1B technology is the second generation 10nm DRAM technology independently developed by Nanya Technology, and product development will focus on 16 Gb DDR5 and 16Gb LPDDR5/LPDDR4.

Driven by the demand for 5G communications, cloud, AI, and smartphone memory upgrade, DDR5 and LPDDR5 (low power double data rate memory) became the main supply of new generation memory. Compared with current mainstream memory, new generation memory possesses faster transmission efficiency while saving energy due to lower operating voltages. When comparing DDR4 with DDR5, average power is about 16% lower, but bandwidth is doubled.



Nanya has focused on the development of advanced processes, and began independently developing 1A process technology in 2017; trial production began in 2022. 1A process technology will significantly shrink the size of chips and increase the capacity of a single wafer by 30%. Furthermore, we also began developing 1B process technology in 2019 and expect to begin mass production in 2024. 1B process technology further shrunk chips made using 1A process technology and increased the capacity of a single wafer by 30%. This will allow factories to further achieve energy conservation and carbon reduction goals while achieving the same production capacity.

### Nanya DRAM technology strategy



### R&D policy for low energy consumption products

-  01 Continues to develop advanced manufacturing processes  
The energy consumption of new generation products developed with new processes is reduced by 15% compared with the previous generation.
-  02 Nanya cooperates with major chip customers  
To reduce back-end assembly and testing as well as energy consumption.
-  03 Nanya strengthens the development of low energy consumption product lines and enlarges product portfolios  
To satisfy the need of various mobile devices and electronic products.

### Environmental external benefits

When we develop new products, the environmental impact of the entire life cycle is considered. To electronic products, the energy consumption in use is one of the most significant indicators in environmental impacts. Nanya actively researches and develops low energy consumption products, and assists clients lower demand for energy during their usage of electronic products so that greenhouse gas emissions can be reduced.

#### Mainstream process products (low power DRAM and 20nm consumer DRAM)

**Scope** Total sales equivalent volume in 2023

**Calculation baseline** Energy consumption of mainstream process products in the current year compared with that of the previous generation

**Calculation method** Totaling the power consumption difference between all products in that year and their respective previous generation product.

#### Benefits



Saved more than **514.15 million kWh** of electricity, approximately **1,851 megajoules** ( $1.851 \times 10^{15}$ )<sup>Note 1</sup>, which is equal to saving the average annual electricity consumption of 142,000 households<sup>Note 2</sup>; and reduced greenhouse gas emissions by 253,993 ton-CO<sub>2</sub>e<sup>Note 3</sup>, equivalent to 653 times carbon absorption of Daan Forest Park for one year<sup>Note 4</sup>.

Note 1: Based on the Energy Product Unit Heating Value Table updated in 2020 by the Energy Administration for unit conversion, 1 kWh = 860 kcal = 3.6 megajoules; 1 MWh = 3,600 megajoules.

Note 2: Estimated based on the actual monthly electricity consumption of 3,618 kWh/year by housing units in the statistics for housing units and small stores on the website of Taiwan Power Company (2024/1/17).

Note 3: The carbon emission factor of electricity is based on the announcement of the Energy Administration in 2023: 0.494 kg CO<sub>2</sub>e/kWh.

Note 4: According to the Energy Administration, Ministry of Economic Affairs, the CO<sub>2</sub> absorption of Daan Forest Park used for calculation is 389 metric tons per year.

## Hazardous Substance Free Product Management

In 2005, Nanya Technology Corporation established the Green Product Promotion Committee (GPPC) to carry out hazardous substance free (HSF) management. During the product production process, we continued to do prevention and control of pollution, energy saving, waste reduction, and avoid using hazardous substances by regulatory restrictions. Through combined and connect suppliers and subcontractors which supply raw materials, process materials, IC and DIMM assembly factories and shipping packaging material suppliers, to enable upstream and downstream manufacturers in the supply chain and Nanya Technology to form an effective green product supply chain that complies with current international environmental protection trends and laws. Through the Green Product Promotion Committee (GPPC), we have established the “General Principles for Environmental Management of Parts and Materials Substance Management” with reference to national laws in the EU and other regions, also the hazardous substance management regulations of major international customers, and continue to focus on raw materials and related effectively control material sources to meet green product standards and reduce the impact on the natural environment during product production. We have also established a Hazardous Substance Free Approval System to confirm that the product wafers, back-end IC and DIMM assemblies products and shipment packing materials are all comply with international regulations and customer specification on hazardous substance management.

The green products referred to by Nanya Technology Corporation that comply with the requirements of BNDCU-0012 General Principles for Environmental Management of Parts and Materials and Substance Management, and meet the following requirements:

 **Comply with requirements of the EU WEEE and RoHS**  
2011/65/EC & 2015/863 (recast)

Substance Name	RoHS requirements
1. Cadmium	<100ppm
2. Lead	<1000ppm
3. Mercury	<1000ppm
4. Hexavalent Chromium	<1000ppm
5. Polybrominated biphenyls (1-10 bromine)	<1000ppm
6. Polybrominated Diphenyl ethers (1-10 bromine)	<1000ppm
7~10. 4 Specific Phthalates (DBP, BBP, DEHP, DIBP)	<1000ppm

 **Comply with requirements of IEC 61249-2-21 Halogen Free (HF)**

Substance Name	Halogen-Free requirements
11. Chlorine (Cl)	<900 (Cl+Br<1500)
12. Bromine (Br)	<900 (Cl+Br<1500)

 **Comply with requirements of EU Directive 94/62/EC PPWD**

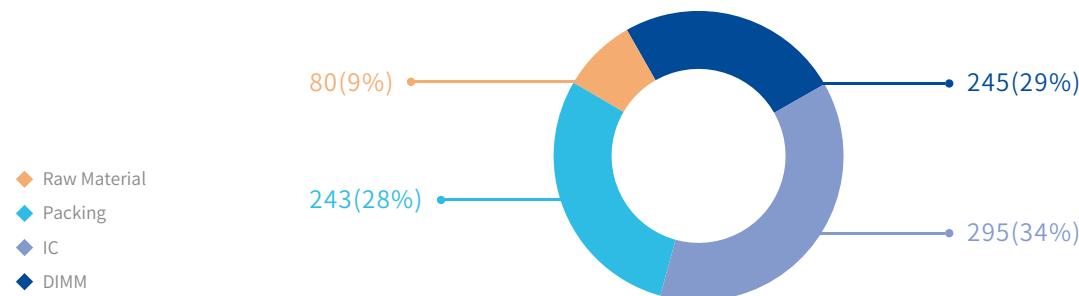
Substance Name	PPWD requirements
1. Cadmium	
2. Lead	
3. Mercury	
4. Hexavalent Chromium	The total concentration of 4 heavy metals is <100ppm

 **Comply with requirements set forth in Section 6(h) of the U.S. Toxic Substances Control Act to not use 5 PBT (Persistent, Bio-accumulative, and Toxic) substances**

Substance Name	CAS No.	Applied Materials Field
Decabromodiphenyl ether (DecaBDE)	1163-19-5	Flame retardants are used in plastics of TVs, computers, and audiovisual equipment, textiles, and wires of communications or electronic equipment
Phenol, Isopropylated Phosphate (PIP)(3:1)	68937-41-7	Used as a plasticizer, flame retardant, anti-wear agent, and anti-compression fluid; used or added to hydraulic oil, lubricating oil, industrial coatings, adhesives, plastic products, etc.
Pentachlorothiophenol (PCTP)	133-49-3	Intermediates or reactants in processing or formulas that may be present in additives such as fuel, gasoline, or lubricants
Hexachlorobutadiene (HCBD)	87-68-3	Additives or by-products in the manufacture of rubber compounds or lubricants
2,4,6-Tris(tert-butyl)phenol (TTBP)	732-26-3	Used in rubber manufacturing processes to make it more flexible

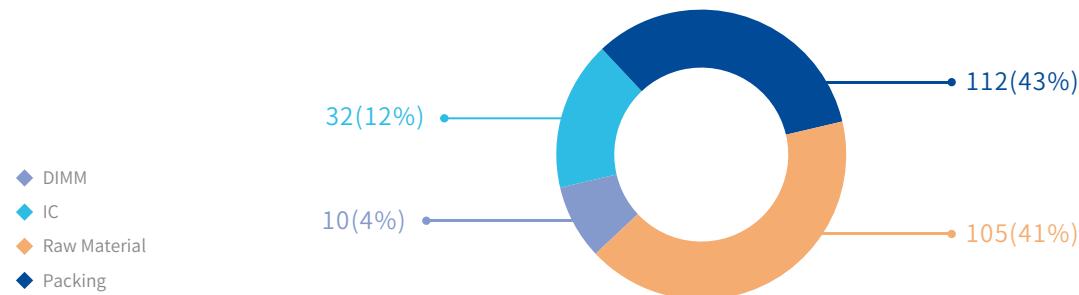
## 2023 TEST REPORTS

In order to complete the relevant requirements for green product compliance confirmation, a total of 863 test reports were reviewed in 2023. Completed as follows:



## 2023 The concern substances survey of supply chain:

Comply with requirements of other substances banned/restricted by customers/regulations, such as substances of concern that are banned or restricted in homogeneous materials or finished products in accordance with the EU REACH SVHC/EU POP/GADSL scope, and conducted surveys of substances of concern in the supply chain for 6 versions. The investigation includes EU REACH SVHC compliance investigation on substances of high concern (once every 6 months), customer concern hazardous substances investigation and responsible mining due diligence. A total of 259 investigation reports were completed as follows:



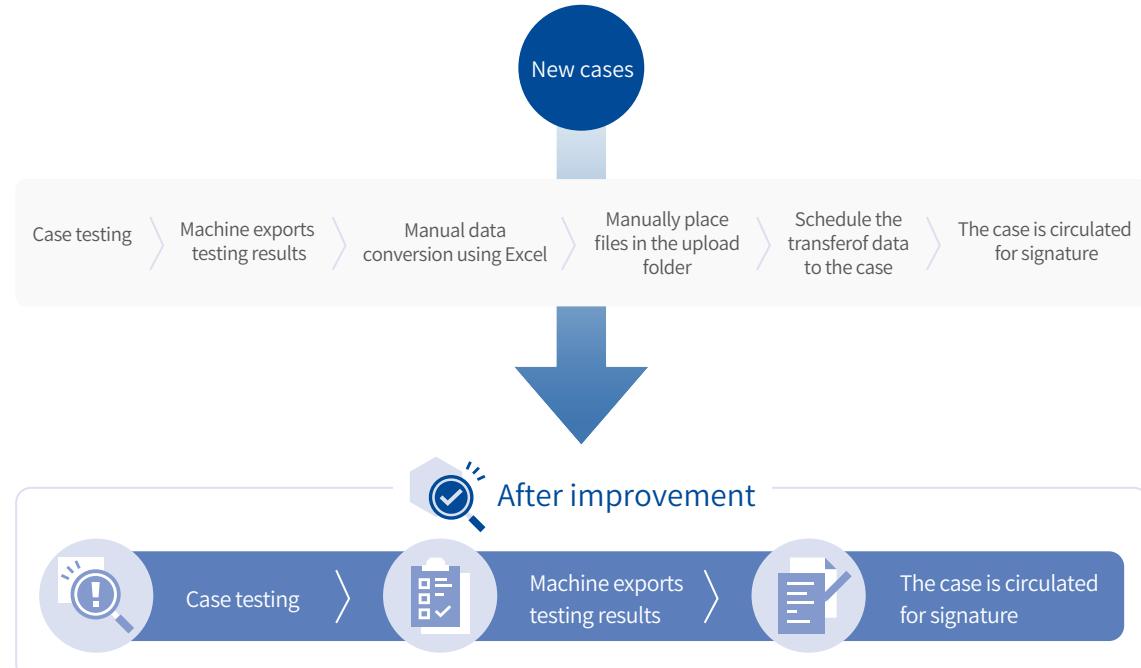
- Two versions of REACH SVHC V.28 & V.29 survey (HS Survey V.51/V.51.1/V.53) were completed while 177 HS survey reports were reviewed. The completion rate was 100%.
- Completed a HS survey (HS Survey V.52) required by clients, while 4 HS survey reports were reviewed. The completion rate was 100%
- Completed 2 versions of responsible mineral sourcing survey (HS Survey V.54/V.55), while 78 HS survey reports were reviewed. The completion rate was 100%.

## Green Chemistry Laboratory

Quality is one of the key conditions that determine technical capabilities. Nanya's chemistry laboratory keeps investing in improving testing technologies and methods to ensure that process yield and product reliability meet customer's requirements and standards. Our goal is to improve green manufacturing capabilities and quality capabilities.

- Implementation of automated data processing to improve chemistry laboratory quality and efficiency**

In response to Nanya's continued expansion of production capacity, we implemented a data automation system in 2023 to enhance the management abilities of multiple fabs, replacing manual input of the chemistry laboratory's analysis data with automated input, improving data quality through electronic information for management, and achieving the goal of verifying the accuracy of uploaded data. In addition to improving work efficiency, this reduced the amount of paper used for report-printing by 25%, and will become paperless. In 2024, we will continue to improve laboratory management capabilities and implement fault detection and classification (FDC) system to manage the machine availability of laboratories in each fab.





# 4 Talent

## An Attractive Employer for Professional Talent

4-1 Human Rights	57
4-2 Diversity, Equity and Inclusion	64
4-3 Talent Cultivation and Development	70
4-4 Safe Workplace	92

Talent is the keystone of Nanya's innovation. The Company attaches great importance to human rights, diversity and inclusion, and talent development, and maintains competitive advantages through talent retention and cultivation. We continue to collect employees' opinions, value workplace safety and create a friendly workplace where employees can feel at ease, in order to achieve sustainable operation.

**878** people

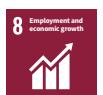
Youth empowerment has expanded semiconductor talents and has cultivated a total of 878 semiconductor talents since 2021, an increase of 64% from the previous year.

**178,000**

Employees who have completed training (No. of participants), an increase of 8.5% compared with 2022.

**4.58%**

The voluntary turnover rate of 4.58% was 4.22% lower than in 2022.



# Strategy and Performance of Material Topics

Strategy of Material Topics	2023 Goals	Performance and Goal Achievement	2024 Goals
<b>Human Rights</b> <b>Regulatory compliance</b> Comply with international human rights standards and apply relevant policies and standards in practice. <b>Protect equality</b> Build workplace equality by establishing risk management and precautionary measures as well as designing diversified communication and complaint channels.	No major deficiencies are found in external audits or labor inspections Workplace violence: 0 cases Employees' educational training on labor ethics completion rate: 100%	No major deficiencies <small>Note 5</small> 2 cases 100%	No major deficiencies are found in external audits or labor inspections Workplace violence: 0 cases Employees' educational training on labor ethics completion rate: 100%
<b>Talent Cultivation and Development</b> <b>Improvement of professional skills</b> Establish yearly training development plans based on the Company's strategy; plan diversified learning courses and channels. <b>Training of key talents</b> Strengthen the training of key talents and increase the proportion of key talents. <b>Individual development</b> Establish independent learning and employee personal development mechanisms to increase the internal employee substitution rate for job openings.	Annual planned course completion rate $\geq$ 100% Key talent as a percentage of all employees $\geq$ 5.7% Internal employee substitution rate for job openings $\geq$ 65% TCSA Talent Development Leader Award	122.7% 6.3% 65.8% Received the TCSA Talent Development Leader Award	Annual planned course completion rate $\geq$ 100% Key talent as a percentage of all employees $\geq$ 6.0% Internal employee substitution rate $\geq$ 65% TTQS Talent Development Quality Gold Award
<b>Talent Retention and Employee Care</b> <b>Manpower stabilization</b> Implement talent retention plans to stabilize outstanding employees and increase the retention rate of key talents.	Retention rate of key talent $\geq$ 98% Voluntary turnover rate <sup>Note 1</sup> $\leq$ 6% Employee Engagement Survey reached the average approval rate $\geq$ 75%	98% 4.58% 75.3%	Retention rate of key talent $\geq$ 98% Voluntary turnover rate $\leq$ 6% Average approval rate in Employee Engagement Survey $\geq$ 76%
<b>Occupational Health and Safety</b> <b>Early diagnosis and early improvement</b> Continuous PDCA improvements for the occupational health and safety system <b>Safety culture</b> Build employees' safety awareness and establish a high-quality safety culture <b>Cross-inspection</b> Cross-inspection by internal and external institutions to strengthen independent inspections	Frequency of disabling injuries <sup>Note 2</sup> $<$ 0.19 Severity of disabling injuries <sup>Note 3</sup> $<$ 6.5 In-plant self-inspection rate <sup>Note 4</sup> $>$ 93.9% Number of proposals engaging all employees for safety and health $>$ 1,150 Occupational diseases caused by chemical exposures maintained at 0 cases	<small>Note 6</small> 0.41 <small>Note 6</small> 18 95.2% 1,215 cases Maintained at 0 cases	Disabling frequency rate $<$ 0.18 Disabling severity rate $<$ 6.2 In-plant self-inspection rate $>$ 93.9% Number of proposals engaging all employees for safety and health $>$ 1,440 Occupational diseases caused by chemical exposures maintained at 0 cases

Exceed Achieved Partially Achieved

Note 1 : Voluntary turnover rate includes employees in Taiwan and overseas

Note 2 : Disabling injuries frequency rate (FR) = (total employees with disabling injuries  $\times 10^6$ )/total work hours

Note 3 : Disabling injury severity rate (SR) = (total days lost to disabling injuries  $\times 10^6$ )/total work hours

Note 4 : Independent inspection rate: (Number of deficiencies independently improved by departments/Number of deficiencies proposed by the Safety and Health Division)\*100%

Note 5 : The measures to deal with the two cases of workplace violence are described in p.62

Note 6 : A total of 3 occupational accidents occurred in 2023 were physical injuries (falls, collisions), and the improvement measures are shown in p.99

# 4.1 Human Rights

## Employee Human Rights Protection

Nanya places great emphasis on employees' rights and has formulated the [Human Rights Policy](#) and [Labor and Ethics Policy](#). The Company complies with relevant international human rights standards, including the behavioral guidelines of Responsible Business Alliance (RBA), Social Accountability 8000 Standard (SA8000), International Labour Organization (ILO), The Universal Declaration of Human Rights, The UN Guiding Principles on Business and Human Rights, General Data Protection Regulation (GDPR) and local government regulations. By implementing human rights risk assessment and management, the Company hopes to create an inclusive and diversity-friendly workplace.

The Company is committed to not employ children under the age of 16, and has never employed child labor for work. In addition, the Company will never force labor or coerce any unwilling person to perform labor. The terms of employment of all employees were agreed to and signed by both parties under their free will. "Policy and Code of Conduct Training," "Unsafe Workplace Behavior and Prevention Training," and "Personal Data Protection Training" are some of the training courses related to human rights policies and procedures in 2023. The trainings mentioned are compulsory for all employees. The percentage of employees who have received the trainings is 100%, and the total person-hours of training is 10,947 hours.

### Statistics on human rights policies and procedures training<sup>Note</sup> hours from 2020 to 2023

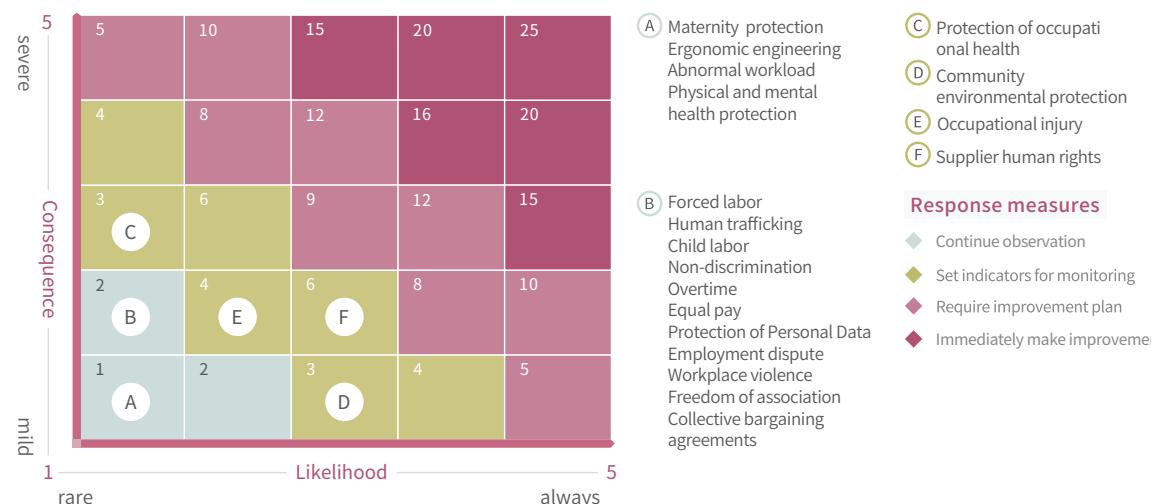


Note: Human rights policies and procedures training include the Company's labor and ethical regulations, the RBA Code of Conduct, unsafe workplace behavior and prevention, and the training mentioned is arranged for all employees. Starting from 2022, personal data protection promotion was included as a required course for all employees every year, which increased the total number of training hours.

## Human Rights Risk Management

Nanya adopts the RBA to labor, health and safety, environment, and uses government occupational safety and health regulations as the standard to identify human rights issues and subjects and business units prone to be affected every year. Nanya conducts human rights risk assessments, and formulates risk mitigation and compensation measures at each business location, ensuring compliance with the laws and regulations of the country of each business location. Probability of occurrence is calculated as the number of employees exposed to risk as a percentage of the Company's total employees. Improvement measures are formulated based on the results, and goals for mitigating human rights risks are set.

### Identification process



## Human Rights Risk Assessment

Subjects	Human rights issues	Assessment tools
Employees	Freedom to choose employment, young workers, working hours, wages and benefits, humane treatment, freedom of association, occupational health and safety, personal data protection, illegal infringement in the workplace	<ul style="list-style-type: none"> <li>◆ RBA SAQ</li> <li>◆ RBA VAP</li> <li>◆ internal audit</li> <li>◆ complaint channel</li> <li>◆ occupational injury report form</li> <li>◆ annual average frequency-severity indicator for each industry announced by the Ministry of Labor (excluding commuting accidents)</li> <li>◆ health examination report indicator</li> </ul>
Suppliers (Joint ventures)		<ul style="list-style-type: none"> <li>◆ Supplier audit</li> </ul>
Communities	Water resources, air pollution, noise, traffic issues	<ul style="list-style-type: none"> <li>◆ Government regulations, fab discharge water quality monitoring, air quality monitoring, noise frequency monitoring, traffic flow assessment and monitoring</li> </ul>
Clients	Personal data protection and information security	<ul style="list-style-type: none"> <li>◆ Annual risk assessment, internal audit and external independent audit</li> </ul>

## Mitigation and remediation measures for highly significant human rights impacts

Subjects	Material human rights issues	Mitigation measures	Remedial measures
Employees	Occupational health and safety	<p>Occupational injury</p> <p>Implement the following measures to reduce the risk of occupational hazards:</p> <p>(1) We strengthened hazard control, implemented safety and health training for a total of 19,119 hours for 1,818 participants, 56 emergency response drills, safety walk and talk on a total of 36 topics, and 40 safety behavior improvement suggestions for operations.</p> <p>(2) We implemented 27 active safety and health improvement action plans in the working environment to continue lowering potential risks</p>	<p>The general rules for compensation are as follows:</p> <p>(1) When an occupational accident occurs, the Company immediately provide emergency medical and first aid treatment, and subsequently provides complete medical assistance; approves leave of absence and provides compensation in accordance with the law.</p> <p>(2) In 2023, there were a total of 23 false alarm incidents, and corresponding improvement and prevention measures have been proposed.</p> <p>(3) The unit of the incident proposes corrective measures, reviews them with the safety and health department, and continues to track improvements.</p>
	Protection of occupational health	<p>We implemented the following health promotion activities to strengthen the concept of health management:</p> <p>(1) Organize at least one health promotion seminar per quarter, and organized a total of 37 seminars with 4,973 participants as of 2023.</p> <p>(2) CPR+AED training activities are held for all employees once a year, and the participation rate in 2023 was 98.74%.</p> <p>(3) The annual weight loss activity and smoking cessation declaration activity had a total of 531 participants.</p> <p>Periodically provide relevant health information to employees (posters &amp; mail)</p>	<p>The general rules for compensation are as follows:</p> <p>(1) Employees with abnormal health examination results are tracked and subjected to health management, scheduling regular interviews with a physician and receiving health guidance.</p> <p>(2) We set up a medical room with a physician stationed on site to provide employees with professional medical and consultation services.</p>
	Workplace violence (sexual harassment)	<p>We established the following preventive measures to prevent workplace violence:</p> <p>(1) Completion of training to prevent workplace violence (workplace bullying, sexual harassment) was 100% in 2023.</p> <p>(2) We have a well-rounded complaint handling mechanism in place, in which reports are investigated confidentially by the Complaint Investigation Group, and resolutions of the cases are made by the Complaint Review Committee.</p>	<p>2 cases in 2023 The general rules for compensation are as follows:</p> <p>(1) Measures to prevent complainants of workplace violence</p> <p>Measures for recurrence, such as appropriate adjustments to work content or workplace.</p> <p>(2) Provide or refer the complainant to counseling, medical or psychological consultation, social welfare resources and other necessary services.</p> <p>(3) Fully investigate complaints, and impose appropriate punishment or treatment on violators. If the case involves criminal liability, the Company may also transfer it to the judicial authority.</p> <p>(4) The Company will track, assess, and oversee cases to prevent the recurrence of workplace violence.</p> <p>(5) The Company prohibits anyone from taking revenge on complainants, informants, or those helping with investigations. Violators will be punished in accordance with corporate management regulations.</p>
Suppliers	Working hours, wages and benefits, humane treatment	<p>We implemented the following measures to ensure the implementation of supplier sustainability actions:</p> <p>(1) Sustainability risk assessments were completed for all first-tier suppliers (including first-tier significant suppliers), Questionnaires were distributed to 352 suppliers and 100% of questionnaires were recovered.</p> <p>(2) We audited high-risk suppliers and found 57 non-compliant items. Nanya provided guidance and assistance in improving the deficiencies found in the audit, and 100% of the improvements were completed.</p> <p>(3) We will continue to encourage suppliers to implement risk management and identification with consideration to the potential impacts on supplier governance/social/environmental aspects.</p>	<p>0 human rights violations in 2023</p> <p>General rules for compensation:</p> <p>Suppliers are required to make improvements until they comply with local laws and regulations</p>
Communities	Water resources	<p>We implemented the following measures to ensure environmental sustainability:</p> <p>(1) Discharge and continue to reduce discharge in accordance with regulatory standards:</p> <p>A. Air pollution reduction: Regarding the reduction of VOCs emissions, a third party verified that equipment processing efficiency reached 98% and above in 2023, and VOCs emission was reduced by 70% compared to 2022.</p> <p>B. Water resources: The total water withdrawal in 2023 was reduced by 0.1% compared with 2022, and the total wastewater discharge of 2,446 million liters in 2023 was a decrease of 9.2% compared with 2022.</p> <p>(2) Environmental monitoring is carried out on a monthly basis.</p> <p>(3) Feedback from local stakeholders is collected through quarterly meetings of the Nanlin Technology Park Management Committee.</p>	<p>0 community complaints in 2023</p> <p>General rules for compensation:</p> <p>1. Pay attention to the progress of regulatory revisions and take corresponding measures</p> <p>2. Actively work with local schools, institutions and groups to carry out educational activities such as environmental conservation</p>
	Air pollution		
	Noise		
Clients	Transportation		
	Personal data protection and information security	<p>We implemented the following measures for information security:</p> <p>(1) Information security promotions are conducted monthly, and employees are required to complete an information security training course and pass a test once a year to raise their personal data protection awareness. The training completion rate was 100% in 2023.</p> <p>(2) After internal procedures and confidentiality classification, it is filed in the document control center.</p>	<p>There were 0 cases in 2023</p> <p>General rules for compensation:</p> <p>Immediately notify customers and take appropriate action</p>

The probability of risk occurrence in 2023 was 3.78%, an increase of 2.67% compared to 2022. The reason for the increase was that the Company introduced counseling services of the Teacher Chang Foundation to care for the mental health and stress relief of employees, and included physical and mental health protection into the scope of human rights risk assessment. The Company expanded the subjects of employee health care, actively arranged diverse health promotion activities and lectures, and regularly shared and promoted health information. The Company helps employees improve their physical health and better handle psychological stress through a variety of methods, which can improve overall work efficiency and satisfaction.

## Employee Protection and Communication

- Zero Tolerance of Harassment and Discrimination

### Measures implemented by Nanya for preventing harassment and discrimination

 Policy statement	Nanya prepared a " <a href="#">Written Statement on Prohibition of Workplace Violence</a> " to protect all employees from physical and mental illness due to physical or mental harassment in the process of performing their duties.
 Zero tolerance	Nanya is committed to ensuring a workplace environment with zero violence. The Company will not tolerate workplace bullying by managers of any level, nor will it tolerate any unlawful workplace harassment against the Company's employees by coworkers, visitors, clients, or strangers.
 Grievance channels	The Company's employees have the responsibility to maintain and ensure that our working environment is free from unlawful workplace harassment. If a staff member witnesses or hears the occurrence of unlawful workplace harassment, he or she shall immediately call the employee complaint hotline or use the internal complaint email address to report such event.  Complaint hotline: 02-29045858 #1132, #1133 Complaint designated email: <a href="mailto:protection@ntc.com.tw">protection@ntc.com.tw</a>
 Education and training	The Company arranges education and training on unlawful workplace harassment for employees at least once every two years, and organizes seminars and courses for managers as needed, in order to improve communication with employees and reduce their stress and frustration.
 Penal provisions	Reported cases are investigated confidentially by the Complaint Investigation Group, and resolutions of the cases will be made by the Complaint Review Committee. If the reported cases are found to be true after investigation, punishments shall be administered in accordance with the corporate management regulations. Moreover, if such facts involve criminal liability, the Company may report the event to judicial institutions for processing at the same time.
 Remedial measures	The Company will keep a complainant's identity confidential. The Company will also assist and provide the complainant with compensation measures, including health guidance, work adjustment or change, and physical and psychological follow-ups.

Note 1: Definition of Unlawful Violation in the Workplace  
 Abuses, threats, harassment, discrimination, or attacks in work-related environments (including commuting) by staff members, which obviously or implicitly pose challenges to the staff members' safety, well-being, or health. Types of unlawful workplace harassment :

(1)Non-sex- and non-gender-related behaviors  
 1.Physical (physical assault, namely brutality and injuries, such as: battery, scratches, punches, and kicks).  
 2.Psychological (mental injuries, namely coercion and insults, such as: threats, bullying, and serious abuse).  
 3.Verbal (verbal abuse, namely inappropriate wording and intonation, such as: bullying, intimidation, and interference).  
 4.Discrimination (characteristics irrelevant to the execution of specific jobs are used to determine whether someone is hired or not or such conduct results in damage to working conditions).  
 5.Harassment (repeated or persistent interference or disruptive behavior that is disturbing or threatening towards a specific person against his or her will).

(2)Sex- and gender-related behaviors  
 1.Sexual harassment (sexual behaviors towards a person against the person's will, such as: inappropriate sexual innuendo remarks and behaviors).  
 2.Gender harassment (use gender discrimination or bias speech to insult, demean, or be hostile towards specific genders).

Before the release of the guidelines on workplace violence, Nanya already had the "Workplace Sexual Harassment Prevention, Grievance and Disciplinary Policy" and "Nanya Employee Protection and Complaint Regulations" in place; regarding the improper treatment of workers in the workplace, relevant preventive measures and follow-up investigations had been formulated. In addition, the Company not only has counseling rooms, but also cooperate with the Teacher Chang Foundation to offer on-site counseling services. This provides space for employees to talk and receive counseling. Workplace mental health improvement seminars are also held regularly to provide workers with relief channels.



### Establishment of Regulations

- The "Workplace Sexual Harassment Prevention, Grievance and Disciplinary Policy" and "Nanya Employee Complaint Guidelines" were integrated into the "Nanya Employee Protection and Complaint Regulations" in 2019, and adjustments were made in 2020 and 2023 to make the regulations more complete.



### Taking Action

- All employees receive online "Occupational Hazards and Preventive Training" each year
- Further manage potential risk groups via employee protection, hazard identification, and risk assessment by each department
- Strengthen the complaint investigation mechanism and establish a Complaint Review Committee
- The Company not only has counseling rooms but also cooperates with the Teacher Chang Foundation to offer on-site counseling services.

### Unlawful workplace harassment training statistics



#### "Occupational Hazards and Preventive Training" completion rate



### Grievance and Complaint Channels

The Company established the "Nanya Regulations for Employee Protection and Complaints", "Workplace Sexual Harassment Prevention, Grievance and Disciplinary Policy", and " [Nanya Reporting Procedure](#)" to provide internal and external stakeholders with channels for reporting any unlawful or unethical conduct. When stakeholders discover a breach of laws or inappropriate conduct that affects the interests of individuals or the Company or other related material issues or where an individual attempts to gain unlawful interest by abusing the power of their office, they may file reports at any time for responsible dedicated units to take charge of processing. Furthermore, the Company's official website has a whistleblowing hotline (02-29061001) and dedicated mailbox ([audit@ntc.com.tw](mailto:audit@ntc.com.tw)) for stakeholders to file complaints when their rights are damaged. A case officer is assigned or a team is assembled to investigate cases based on the contents, types, nature, and sensitivity of the case, as well as the level of the person being reported. For cases that involve a manager or director, the director that manages the audit department assembles a team to investigate the case. To protect the whistleblower, personnel responsible for processing cases shall conduct investigations based on the confidentiality principles and they shall be prohibited from disclosing cases to unrelated personnel. When investigating related individuals, the processing personnel shall only discuss parts that are relevant to the individuals to protect the identity of the whistleblower. Related data is handled and stored as confidential documents.

- Number of reports through employee grievance and complaint channels over the years

Reporting channels		2020		2021		2022		2023	
		Rejected	Accepted O X						
File written complaints (including anonymous reports)		2		5		4		0	
Employee grievance report table		1		0		0		2	
Complaint hotlines and mailboxes		0		1		1		1	
Total cases		3		6		5		3	
Cases related to the Code of Business and Ethical Conduct	Corruption and bribery	0	0 0	0	0 0	0	0 1	0	1 0
	Improper income	0	0 0	0	0 2	0	0 0	0	0 0
	Fair competition	0	0 0	0	0 0	0	0 0	0	0 0
	Improper donations	0	0 0	0	0 0	0	0 0	0	0 0
	Conflict of interest	0	0 0	0	0 0	0	0 0	0	0 0
	Money laundering or insider trading	0	0 0	0	0 0	0	0 0	0	0 0
	Protection of intellectual property rights	0	0 0	0	0 0	0	0 0	0	0 0
	Protection of personal privacy/data	0	0 0	0	0 0	0	0 0	0	0 0
	Sexual harassment	0	1 0	0	0 0	0	0 0	0	2 0
	Harassment	0	0 0	0	0 0	0	0 0	0	0 0
	Discrimination	0	0 0	0	0 0	0	0 0	0	0 0
	Environmental protection	0	0 0	0	0 0	0	0 0	0	0 0
	Occupational safety and health	0	0 0	0	0 0	0	0 0	0	0 0
Other		0	0 3	0	0 4	0	1 3	0	0 0
<b>Total cases</b>		0	0 3	0	0 6	0	1 4	0	3 0
<b>Case closed</b>		3		6		5		3	
<b>Closure rate</b>		100%		100%		100%		100%	

O: Case opened X: Case not opened

### There were 3 complaints and reports in 2023

including 1 case in the "Corruption" category and 2 sexual harassment cases. Please refer to the following description of the complaints:

In the one case of corruption, when the equipment engineer went to the material warehouse to pick up materials, he took advantage of the time personnel went to another warehouse to collect materials, and moved the materials out of the warehouse for a vendor to move out of the fab with the intention of selling the materials for profit. With the joint efforts of the equipment and materials departments, the stolen materials were immediately recovered without causing any loss of Company property. The employee involved in the case was terminated in accordance with the Company's personnel regulations, and a criminal suit was filed with the prosecutors office.

In the first sexual harassment case, physical touching caused the person concerned to feel offended and uncomfortable. In the second sexual harassment case, the person concerned felt stalked and harassed due to the offender not being good at making friends. The two cases above were investigated and verified by the Company's Complaint Review Committee to constitute workplace sexual harassment and violated work rules.

### The Company's implementation measures :

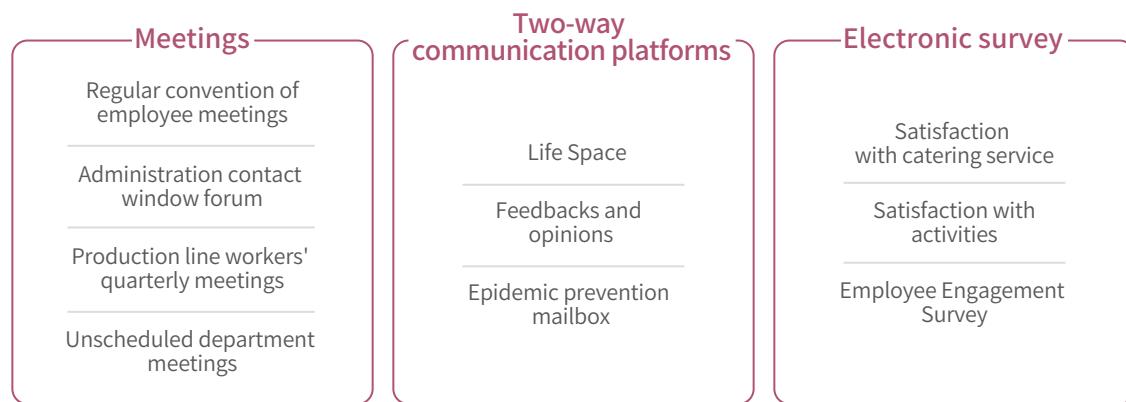
**Penalties** After receiving the complaint, the employee is immediately isolated from the work area, counseling and handling will be carried out if the case is opened, and the reward and punishment committee will decide on punishment in accordance with the Human Resources Management Regulations, and the unit will be asked to strengthen training on sexual harassment behavior.

**Guidance** Provide or refer the complainant to counseling, medical or psychological consultation, social welfare resources and other necessary services. Counseling and treatment will be implemented for the respondent to ensure that the behavior is not repeated.

**Compensation** To prevent the recurrence of grievances, the work contents or workplace has been adjusted. The Company handles punishments according to the approved punishment content, and continues to track, assess, and oversee the punishments to prevent the recurrence of unlawful workplace harassment. Moreover, the Company prohibits anyone from retaliating against complainants, informants, or those helping with investigations. Those who do so will be punished in accordance with the corporate management regulations.

## Labor-management relations and communication

The Company has diverse, open and transparent communication channels in place to maintain harmonic employment relation, facilitate labor-management collaboration and improve workers' benefits. These communication channels not only enable employees to express opinions on various issues concerning health, safety, benefits and basic work conditions, but also allow the Company to take initiative in learning employees' thoughts and address problems in a timely manner. The Company also has complaint mailbox, whistleblower hotline and sexual harassment prevention hotline available for reporting illegal matters, and any opinions concerning corporate policies may be raised using the management system improvement opinion feedback channel. Employees are entitled to communicate openly and thoroughly with the management about work-related or personal affairs, terms of employment, salary, benefits and personal opinions through the following channels:



The employees of Nanya have established a labor union since April 2012. The company actively maintain communication and harmony with union for a long time, and exchange information through multiple communication channels. Therefore, the labor union can fully perform its functions and express opinions. This strengthens the harmonious employment relationship and benefits.

In view of this, although the labor union has been established, they have negotiated with the company through multiple and smooth communication channels, and the company has also actively communicated and handled the matter, the labor union has not requested the company to sign a group agreement, and no group agreement has been signed yet.

### Number of union members in the last 3 years - Taiwan

Year	2021	2022	2023
Number of union members	83 people	86 people	88 people
Percentage of employees with union membership	2.41%	2.38%	2.36%

95 cases  
Number of feedbacks and opinions raised in 2023

Within 5 days  
Average time of reply per case

### The top 3 issues

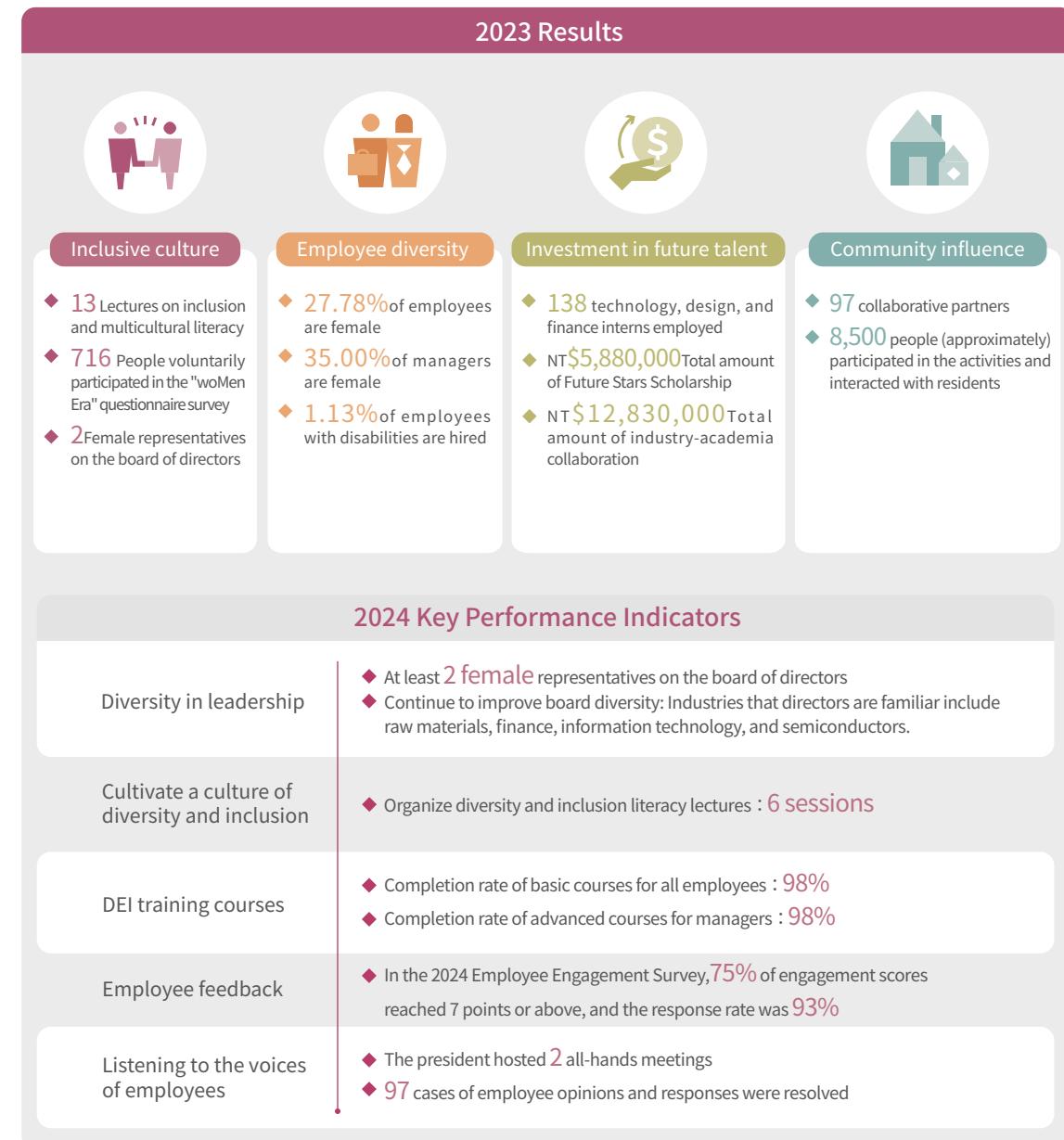
47 transportation/parking/shuttle bus cases (49.47%)  
15 information/information security issues (15.79%)  
Office environment issues - 14 cases (14.74%)  
19 Others:catering /factory environment cases (20%)

# 4.2 Diversity, Equity and Inclusion

## Promote Diversity, Equity and Inclusion to Create Good Times

### Diversity, Equity and Inclusion Action Strategy

The concept of "people-centered" is the foundation of Nanya's diversity, equity, inclusion (DEI) action strategy. We believe that providing a good workplace environment helps realize our core values, so we established the vision and mission of diversity and inclusion. We formulated action strategies from recruitment to internal talent development, listening to the voices of stakeholders to exert social influence, so that we can work towards better things and continue to make improvements.



## DEI Milestone

Since 2014, we have paid attention to diversity, equity and inclusion in the workplace.

### 2014-2019

- Implemented the plan for dedicated personnel to coach new employees
- Established Nanya's "Workplace Sexual Harassment Prevention, Grievance and Disciplinary Policy"
- Implementation of the Employee Engagement Survey and employee communication platform: Feedback and opinions section
- Renamed the employee care project into the Employee Assistance Program (EAP)
- Added the "Employee Protection and Complaint Regulations", launched the "Prohibition of Illegal Infringement in the Workplace".

### 2021

- Expanded DEI influence: Launched the diversity and inclusion "woMen Era" Project
- Launched the "Youth Empowerment Project"

### 2023

- Planned diversity and inclusion paths and action plans

### 2020

- The Women's Empowerment Project strengthened Nanya's diversity and inclusion
- Continued to implement the EAP : Employee W.A.K.E Project

### 2022

- Plan to Strengthen Diversity and Inclusion: Self-leadership (workplace, family, self-growth)

### 2024

- Continued to implement diversity, equity and inclusion plans: Concern for topics of generational inclusion

## Talent sustainability, diversified recruitment

Nanya upholds the philosophy of being people-oriented and respects diversity. During talent recruitment, we do not discriminate against nationality, race, gender, age, sexual orientation, religion, party, place of birth, marital status, appearance, and physical and mental disabilities. What we value is whether the personality traits are suitable for the job position.

### • Diversified recruitment policy

Nanya provides equal employment opportunities. Our business operations are distributed in Taiwan and overseas, so the nationalities of employees are quite diverse. In addition to Taiwanese staff, employees of the following 15 nationalities were employed in 2023: Chinese, French, German, Japanese, American, Thai, Vietnamese, Burmese, Italian, Kenyan, Korean, Turkish, British, Indonesian, and Malaysian. Our employees form an internationally diversified workplace. We had 109 foreign employees in 2023, accounting for 2.99% of all employees. In descending order, the top five nationalities<sup>Note1</sup> were American, Chinese, Japanese, German, Indonesian, Malaysian, French, Burmese, and Korean. The top five nationalities among managers are Taiwanese, American, Japanese, German, and French. The majority of managers are Taiwanese at 93.26%.

We also support the government's policies of hiring people with disabilities as part of its workplace friendly diversity initiative. As of December 2023, Nanya Technology Corporation hired a total of 40 employees with disabilities into Taiwan operations, which represented 1.13% of total employees. We continue to work towards hiring more people with disabilities and provide appropriate job positions. Through increasing job opportunities for people with disabilities, we intend to build a friendly workplace with diversity.

### • Employee Diversity

Employees are the most important partners of Nanya, and also the key to maintaining corporate sustainability and innovative R&D. Deeply embedding the culture of being people-oriented, we created a friendly and comfortable office environment and training courses based on employee learning, allowing employees to receive systematic training courses and enjoy diverse learning resources. This will help employees quickly accumulate professional knowledge and skills related to semiconductors, consolidate the Company's human capital, and enhance the Company's competitiveness. In addition to providing generous salaries and bonuses to provide motivation and encouragement, the Employee Welfare Committee also organizes a variety of recreational activities every year, striving to create a happy workplace that balances work and life, and provides employees with comprehensive care and concern.

We believe a competitive and stable workforce to be essential for improving the productivity and competitive advantage of the Company. We continue to design and provide an environment where talents may thrive. Through talent cultivation, we strive to become the best employer that looks after talents.

Note 1: Indonesian, Malaysian, French, Burmese, and Korean have the same number of employees, so they are tied for fifth place.

Year	2020	2021	2022	2023
<b>Number of nationalities</b>	15	15	16	16
<b>Nationalities</b>	Taiwanese, Chinese, Turkish, Japanese, Indonesian, French, Kenyan, USA, British, Malaysian, Indonesian, Italian, German, Burmese, Korean	Taiwanese, Chinese, French, German, Japanese, American, Thai, Vietnamese, Burmese, Italian, Kenyan, Korean, Turkish, British, and Indonesian	Taiwanese, Chinese, French, German, Japanese, American, Thai, Vietnamese, Burmese, Italian, Kenyan, Korean, Turkish, British, Indonesian, and Malaysian	Taiwanese, American, Chinese, Japanese, German, Indonesian, Malaysian, French, Burmese, Korean, British, Thai, Vietnamese, Italian, Kenyan, Turkish
<b>Percentage of foreign employees (%)</b>	3.56%	3.26%	3.01%	2.99%
<b>Number of employees with disabilities</b>	36 people	36 people	36 people	40 people
<b>Percentage of employees with disabilities (%)</b>	1.05%	1.05%	1.01%	1.13%

Note: The percentage of employees with disabilities is calculated based on the 3,540 formal employees in Taiwan.

In addition, due to the characteristics of the semiconductor industry and the supply factors of the job market, the percentage of employees that are female in Nanya was 27.78% in 2023. However, we provide fair promotion opportunities without gender restrictions. The percentage of managers that are female was 35.00% in 2023. In 2022, a female supervisor won the first "New Taipei City Enterprise Classic and Women Power Award" sponsored by the Economic Development Department, New Taipei City Government. The award assesses candidates based on four aspects: "Innovative," "International," "Sustainable," and "Dedicated to New Taipei," encouraging more women to pursue self-realization. The award recognizes the Company's long-term commitment to mutual benefit and co-prosperity with New Taipei City and local communities, and its efforts to create a friendly workplace with diversity and equality.



Nanya won individual and corporate awards in the New Taipei City Enterprise Classic and Women Power Award. From left are Nanya Division Director Christine Wang, New Taipei City Mayor Hou, Yu-Ih, and Nanya Vice President Joseph Wu.

## • Fair and diverse recruitment channels

In 2020, we changed all items on the interview information form that are not directly related to work to optional, such as gender, age, family status, etc., actively reducing the chance of bias. This makes the recruitment process friendlier and also complies with the DEI strategy. In addition, we also use diverse recruitment channels. In addition to uploading resumes on the Company's official website, applicants can also actively apply through job banks. We also actively go into campuses and participate in job fairs of various colleges and universities, in order to find more suitable candidates. In 2023, we co-organized the Semiconductor Women's Empowerment Camp with the Youth Career Development Center and schools. The event invited the Company's female managers to share with students, so that students can further understand the semiconductor industry, and also encourage more female talents to enter the semiconductor industry in the future. We also supported the government's New Southbound Talent Recruitment Project, accurately matched industry needs with academic resources, and went to universities in Indonesia and Vietnam to conduct recruitment activities with the Intelligent Electronics Institute of the Industrial Development Administration and other companies and schools.



## • Fair rewards and benefits

Nanya's salary, reward and benefit system is planned based on personal academic experience, professional knowledge and skills, industry standards, local economy and labor market supply and demand, while taking into account industrial competitiveness, the Company's overall operating conditions and sustainable operations. We adhere to the principle of fair salary and do not discriminate based on gender. We use performance as an important basis for salary adjustments. We also provide fair promotion opportunities, which does not differ due to gender as long as the employee has good performance. Nanya is strives to become a diverse, fair and inclusive family. Talent is an important asset of the Company. We respect the uniqueness of each individual, and look forward to employees leveraging their unique value to grow together with the Company and create a win-win situation.

## Cultivate diversity and inclusion

- Cultivate multiculturalism: woMen Era

To accelerate the development of diverse representative talents and create a workplace culture full of curiosity, collaboration and belonging, Nanya launched the "Women's Empowerment" project in 2019, and organized a series of lectures, workshops and sharing sessions. In the following year, to increase the breadth and depth of diversity and inclusion in the workplace, the project was changed to the "woMen Era" project, which emphasizes mutual benefit regardless of gender. The project does not stop at classroom training, and also focuses on experience sharing, so that employees can continue to learn and demonstrate diversity and inclusive behavior at work.

In 2023, we used the United Nations' "Good Life Goals" as the theme and starting point of the project, so that everyone can use their own strength to contribute to the SDGs, implement sustainability in daily life, and create good times for the world! The project mainly includes:

**Questionnaire survey :** We design a questionnaire survey each year based on the main training goals for the year. The questionnaire is used to understand the current situation and needs of employees, and the results of the analysis report are released. The data is used to show the different appearances of employees, achieving the purpose of communication and mutual understanding, which will make the work team more inclusive. In 2023, we used "Ideal Life" as the direction of the questionnaire survey to understand the status of employees in reaching their life goals. The release of analysis reports allows employees to understand each other's problems and feelings, and build empathy and tolerance.

**Event design :** After obtaining the results of the needs analysis, we planned a series of "Good Life" activities, including soft lectures, workshops and sharing sessions, covering topics ranging from personal growth, family matters to career development. Experts in various fields were invited to share and provide solutions, so that employees learn and grow from role models, helping each employee realize their potential while promoting employee inclusion and multicultural literacy.

**Experience sharing :** The most popular sharing session among employees every year. We invite employees to serve as our program ambassadors and share their experiences. Employees have a common language to resonate with each other through the real-life experiences shared by ambassadors, and they also accept different viewpoints. This allows diversity and inclusion to spread and make an impact.

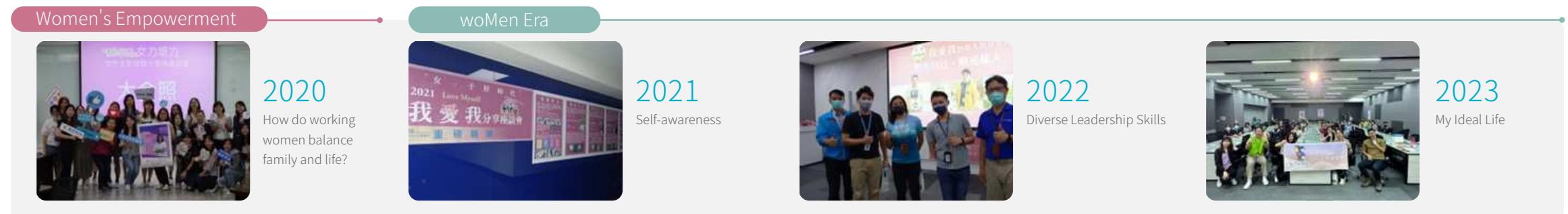
- Training courses: Diversity, Equity and Inclusion

In the process of promoting the value of DEI, we know that it is crucial to eliminate unconscious biases and cultivate inclusive, innovative and influential managers. Therefore, Nanya will incorporate "unconscious bias" and "inclusive leadership" training into its learning program in 2024, helping employees understand the concept of DEI, become aware of unconscious biases they might have, and then change their conscious behaviors to achieve the mission of creating a diverse and inclusive workplace.

### Planning Diversity and Inclusion Training Courses

Course topics	Goal
 Diversity, Equity and Inclusion	Understand the benefits and impacts of diversity and inclusion
 Recognize unconscious biases	Understand and address key unconscious biases
 Diverse and inclusive interview skills	Understand the full scope of the diverse and inclusive recruitment process
 Diverse and inclusive leadership	Practice bias-free management and supervision and create inclusive teams
 Lectures on inclusion and cultural literacy	Unlock employees' potential and promote inclusion and multiculturalism

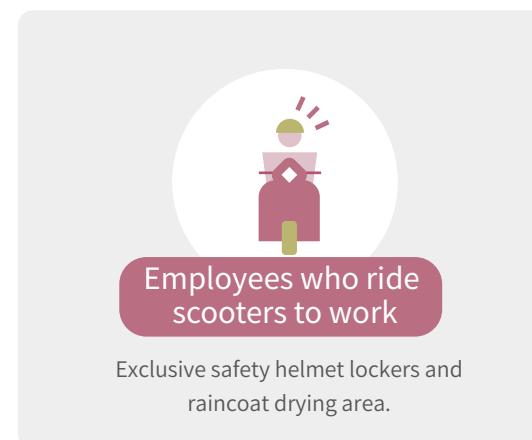
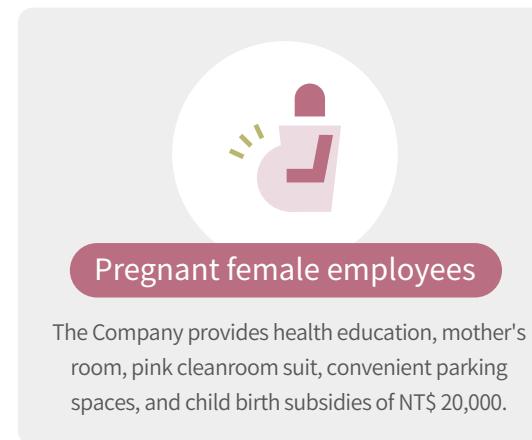
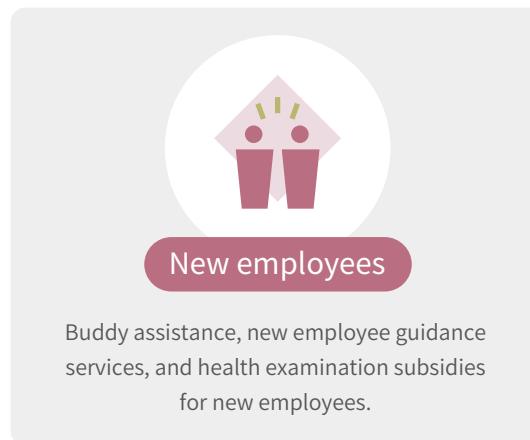
### Planning Diversity and Inclusion Training Courses



## Create a friendly workplace that takes into account differences

- Provide differentiated benefits

We are committed to creating a friendly workplace and proposed the friendly workplace project Employee W.A.K.E. through the strategy of seeking common ground in differences, but without losing uniqueness. In addition to providing services such as catering, transportation, Employee Welfare Committee activities, group insurance, health examinations, psychological consultations, and financial planning lectures to all employees, we also provide differentiated assistance and support for employees of different nature, such as:



- Maintaining communication channels for diversity and inclusion

At the same time, we provide diversity and inclusion management, provide multiple communication channels, strengthen communication and connection between employees, and provide solutions and responses to various opinions and ideas.

A Letter from the President

Meeting with cadre members

All-hands meetings



- Create a healthy and vibrant workplace environment

In addition to providing employee benefits that take into account differences, we are also committed to creating an energetic workplace, allowing employees to enjoy the high-quality sports equipment, courts, and aerobics classrooms provided by the Company for fitness and stress relief after work. We also won the following awards:

**Work-Life Balance Award, Taiwan iSports certificate from the Sports**

## Encourage employees to take the initiative to expand and exert their influence in the community

Our efforts are not limited to within the Company. We also plan community involvement activities and serve as a connector of resources, working with local public institutions, government agencies, schools, non-profit organizations, and arts and cultural associations to jointly promote activities and connect with the community to expand our influence.

- Narrowing the international economic and social gap

We have set up a fair trade pantry in the head office to expand our social influence. Employees can enjoy coffee purchased without middlemen for only NT\$10, and the cost will be converted into actual support to help third world farmers, community development, children's education and women's employment. This not only supports the concept of fair trade, but also Narrowing the economic, schooling and employment gap of disadvantaged groups. From 2018 to 2023, Nanya consumed NT\$34,634 of fair trade coffee, which was used to assist the development plans of fair trade small farmer cooperatives, including women's empowerment work in Peru, organic transformation projects of cooperatives in Guatemala, emergency medical and long-term care projects in Nicaragua, and safety equipment for small farmers of cooperatives in Colombia.



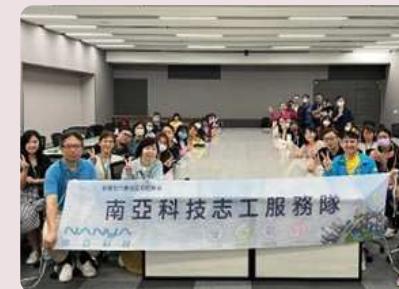
A fair trade pantry unveiling ceremony



Employees enjoy a fair trade pantry

- Employees voluntarily give back to the community and help diverse and disadvantaged groups

Nanya established a volunteer team in 2021, and encourages employees to participate in actions, in hopes that they will pour their strengths into creating a virtuous cycle in society. We also hope that employees who participate in the activities will provide new feedback and influence each other. We also encourage employees to independently organize charity activities and promote SDGs from the inside out to expand our social influence. Therefore, we implemented the Love Connection Project and combined it with the incentives system provided by the Company to attract more employees to join and gradually expand the influence of our community involvement.



Annual training of the Nanya Volunteer Team



Taiwan Rabbit Saving Association supplies collection



Father's Day Charity Road Running

# Talent Cultivation

## 4.3 and Development

### Attracting talents

- Stable workforce

The semiconductor industry is both capital and technology intensive. It not only involves multi-billion dollar plants and manufacturing equipment, but also requires a substantial number of outstanding engineering talents to join the production team of Nanya. Nanya has a very stable workforce structure. As of 2023, the Company has a total of 3,647 permanent employees in Taiwan and in overseas subsidiaries (including 86 interns), in which 86.73% are specialists<sup>Note 1</sup>. The Company has also hired 84 informal employees<sup>Note 2</sup>. Overall, the Company has a competitive, healthy and growing talent base to support development of innovative production procedures, technologies and products. Nanya has 3,540 formal employees in Taiwan, accounting for 97.07% of all employees; overseas subsidiaries have 107 formal employees, accounting for 2.93% of all employees. Formal male employees totaled 2,634 (accounting for 72.2%), whereas formal female employees totaled 1,013 (accounting for 27.8%), representing a gender ratio of 2.6 (male) : 1 (female). In addition, most of the Taiwan non-employee workers are contractors, about 400 people, and outsourcers, about 100 people (including catering, cleaning and security companies). There are about 40 security guards assigned by the Company. The average age of the Company's employees was 38.33 years old. The majority of employees was in the 30-50 year old age group, representing 68.63% of all formal employees. Most employees have a bachelor or master's degree. All formal and informal employees are directly hired by the Company. The Company did not hire any part-time staff in 2023 and 100% of its employees worked on a full-time basis.

Note 1: "Specialist" refers to offline production personnel.

Note 2: Non-permanent employees include consultants, contract staff, and interns.

Statistics of employees in Taiwan and overseas subsidiaries in 2023 by age

	Taiwan				Overseas subsidiaries				Total shares						
	Female	As a percentage of total females in Taiwan operations	Male	As a percentage of total males in Taiwan operations	Female	As a percentage of total females in overseas operations	Male	As a percentage of total males in overseas operations	Female	As a percentage of total female employees	Male	As a percentage of total male employees	Male and Female	As a percentage of total male and female employees	
Total shares	Formal employees	149	15.04%	510	20.01%	3	13.64%	26	30.59%	152	15.00%	536	20.35%	688	18.86%
	Informal employees	11	100.00%	61	83.56%	0	0.00%	0	0.00%	11	1.09%	61	2.32%	72	85.71%
30-50	Formal employees	721	72.75%	1739	68.22%	12	54.55%	31	36.47%	733	72.36%	1770	67.20%	2503	68.63%
	Informal employees	0	0.00%	6	8.22%	0	0.00%	0	0.00%	0	0.00%	6	0.23%	6	7.14%
Over 50	Formal employees	121	12.21%	300	11.77%	7	31.82%	28	32.94%	128	12.64%	328	12.45%	456	12.50%
	Informal employees	0	0.00%	6	8.22%	0	0.00%	0	0.00%	0	0.00%	6	0.23%	6	7.14%

In 2023, Nanya had 31 female mid-level and senior managers, accounting for 12.02%. The number is increasing year by year and is expected to reach 13% by 2025. Due to the special nature of the semiconductor industry and realities concerning talent supply, males still dominated the management roles. Managers who work on production lines include team leaders and shift leaders, in which 93.14% are female and play an important role in Nanya's productivity. As for managers of production and revenue related departments, 117 are female, accounting for 38.49%.

## Number and Percentage of Female Staff in the Last 4 Years

Year	2020		2021		2022		2023	
	Count/ Percentage	Number of females	Percentage of females <sup>Note1</sup>	Number of females	Percentage of females <sup>Note2</sup>	Number of females	Percentage of females <sup>Note3</sup>	Number of females
Total employees	973	27.47%	982	27.63%	1015	27.54%	1013	27.78%
Managers	116	33.72%	122	33.61%	125	34.44%	126	35.00%
Mid-level and senior managers	26	10.48%	27	10.34%	30	11.49%	31	12.02%
Entry-level manager	90	93.75%	95	93.14%	95	93.14%	95	93.14%
Head of revenue-generating department (management level)*	108	37.11%	114	36.89%	116	32.04%	117	38.49%
Females working in STEM-related positions	411	15.54%	428	15.92%	459	16.34%	458	16.43%

\*Managerial positions refer to mid-level and senior managers (plant manager, director and above, department manager and section manager) and entry-level managers (team leader and shift leader).

\*Revenue-generating department refers to any department other than planning, administration, operational support, quality assurance, legal affairs, and safety & health departments. Heads of revenue-generating departments are included in the number of entry-level managers.

\*STEM: Job positions related to science, technology, engineering, and mathematics.

\*The number of people and percentage in 2020-2022 was revised, but the statistical method was not changed.

Note 1, Note 2, Note 3, and Note 4: The denominator is the total number of employees in the group.

### • Attracting top talents

The Company adopts recruitment policies that comply with labor regulations in Taiwan as well as its own ethical employment principles. The Company strives to provide equal employment opportunities and environment, and recruit talents solely based on individual professional capabilities and experience without discrimination whether in terms of age, ethnicity, gender, sexual preference, religion, political association, place of birth, marital status, appearance or disability. Employees' promotion, performance evaluation, training, reward and discipline after hiring have been explicitly stated in policies. This gives everyone job and training opportunities in a fair manner.

In 2023, the semiconductor industry faced economic headwinds. After analyzing demographic data, the population in school, birth rate, and government employment policies, we targeted colleges and universities in northern Taiwan to recruit professional R&D talents. A total of 286 people were hired in Taiwan in 2023, and approximately NT\$490,000 was invested in recruitment; the recruitment cost per employee is NT\$1,725. We currently have diverse recruitment channels and continue to post online recruitment advertisements, make internal recommendations, and place talent recruitment information on the Company's (official) social media platform to increase the company's exposure. We strengthened cooperation with the industry and schools, targeting current students, strengthening professional skills and practical capabilities, and recruiting outstanding students in advance to overcome the recruitment dilemma. Talent recruitment activities in colleges and universities are based on the them "You be the Leader of the Future." We went into campuses to interact, communicate, and hold discussions with young students, encouraging young students who are interested in the technology industry to dare to dream and pursue their dreams, and work together to contribute to the development of Taiwan's semiconductor industry. Recruitment of entry-level production line operators is carried out with the help of local employment service stations near the Company's plants. On-site interviews are held from time to time, and local residents are hired as a priority to promote local employment. Managers of Taiwan operations consist entirely of Taiwanese nationals for 100% localized hiring.

### Statistics on recruitment costs from 2020 to 2023

	2020	2021	2022	2023
Total recruitment costs (NT\$)	820,261	1,286,210	1,304,183	493,388
Total number of recruits <sup>Note 1</sup>	483	360	558	286
Average recruitment cost per person (NT\$)	1,698	3,573	2,337	1,725

Note 1. The total number of recruits refers to those who reported for duty in the current year (including those who resigned in the current year)



Nanya's Talent Recruitment Video

### • Campus recruitment snapshots



In order to promote the development of the semiconductor industry and company operations, Nanya proactively recruits new employees into the Nanya big family. Company employees work cooperatively to move forward together. New recruits accounted for approximately 4.8% of the Company's total employees in 2023. Gender distribution of new recruits was approximately 4.3 (male):1 (female).

### Statistics on new recruits in Taiwan and overseas from 2020 to 2023

	2020	2021	2022	2023
Number of new recruits <sup>Note1</sup>	374	270	412	175

Note 1: New recruits refer to personnel hired and remained employed in the current year (excluding those who resigned during the year)

### Statistics on new recruits in Taiwan and overseas in 2023

New recruits <small>Note1</small>	Division	Female		Male		Total	
		Number of people	Percentage Note2	Number of people	Percentage Note3	Number of people	Percentage Note4
By region	Taiwan	31	3.13%	131	5.14%	162	4.58%
	Overseas subsidiaries	2	9.09%	11	12.94%	13	12.15%
Age group	Under 30	29	19.08%	121	22.57%	150	6.04%
	30-50	4	0.55%	18	1.02%	22	2.72%
Job level	Over 50	0	0.00%	3	0.91%	3	0.77%
	Mid-level and senior manager	2	0.05%	1	0.03%	3	0.08%
	Entry-level manager	0	0.00%	0	0.00%	0	0.00%
	Total new recruits	33		142		175	
As a percentage of formal employees		0.90%		3.89%		4.80%	

Note 1: New recruits refer to personnel hired and remained employed in 2023 (excluding those who resigned during the year)

Note 2, Note 3, and Note 4: The denominator is the total number of employees in the group

## Talent retention

Nanya not only offers salary packages that are competitive for the semiconductor industry, but also introduces a full range of welfare measures and training systems that address employees' needs on all aspects from work, life to health. It is the goal of the Company to create a work environment where employees may realize their full potentials with a peace of mind, and for which we have implemented an employee assistance program as part of our corporate social responsibilities.

- Enhanced work security – Turnover rate

In response to changes in the industry and challenges in the business environment, the Company continues to not only push for fairness and reasonableness in various operations, but also prioritize the work rights and interests of employees. Under the human resource coordination system of the Formosa Plastics Group, employees are transferred first before they are made redundant. Transfer and redundancy of employees are announced and notified in advance in accordance with the Labor Standards Act and relevant laws, whereas department managers would also communicate fully with the employees in question and execution decisions in accordance with law. In order to motivate employees to achieve organizational goals and retain outstanding talents, the Company uses a quarterly incentive system to not only encourage employees to actively reach for business goals, but also share company profit.

The voluntary turnover rate in 2023 was 4.58% (the male to female ratio of those who resigned is approximately 3.66: 1). Compared to the voluntary turnover rate of 4.74% in 2020, there was a 4.22% decrease in 2023 due to the overall industry environment and market situation lowering the intention of employees to resign. The Company adjusted the starting salary of unexperienced new recruits, made an annual salary adjustment for all managers and employees, and made structural adjustments to the salaries of special departments and specialists in July 2023 to stabilize its manpower. This allows employees to work in a happy and safe environment. Nanya upholds the spirit of being people-oriented, and has won the trust and recognition of employees by providing a good work environment and security in life. We have implemented a variety of talent retention and incentive measures to manage turnover risk, in hopes of effectively retaining talent. For employees who have the intention to leave, the Company conducts interviews with them one by one to understand the reasons for their resignations and future plans; the Company also provides relevant suggestions based on employee needs.

### Analysis of turnover rate in Taiwan and overseas in 2020-2023

Employee turnover rate	2020	2021	2022	2023
Voluntary turnover rate	4.74%	7.09%	8.8%	4.58%
Total turnover rate	5.01%	7.26%	9.05%	4.81%

Note:

1. Calculating formula for turnover rate = (number of resignations in January/total number of employees at the end of January) x 100% + (number of resignations in February/total number of employees at the end of February) x 100% +...+(number of resignations in December/total number of employees at the end of December) x 100%
2. Voluntary turnover refers to resignation initiated by the employee. The Company calculates turnover rate mainly based on voluntary turnover. Total turnover rate includes voluntary (including retirement) and involuntary turnover (including dismissal, redundancy, death etc.)
3. In 2019, the calculation of turnover rate began excluding direct interns (personnel turnover due to expiration of internship contracts).
4. In 2020, the calculation of voluntary turnover rate began excluding those who went on unpaid leaves.

## Statistics on total number of employees separated in Taiwan and overseas in 2023

Division	Female		Male		Total shares		
	Number of people	Percentage Note2	Number of people	Percentage Note3	Number of people	Percentage Note4	
Total number of employees separated Note1	Taiwan	33	94.29%	127	93.38%	160	93.57%
	Overseas subsidiaries	2	5.71%	9	6.62%	11	6.43%
	Under 30	13	61.22%	49	50.75%	62	52.80%
	30-50	19	38.78%	68	43.78%	87	42.80%
	Over 50	3	0.00%	19	5.47%	22	4.40%
	Mid-level and senior manager	2	5.71%	7	5.15%	9	5.26%
	Entry-level manager	1	2.86%	0	0.00%	1	0.58%
	Total number of employees separated	35		136		171	
	As a percentage of formal employees Note5	3.48%		5.32%		4.81%	

Note 1: Total turnover rate includes voluntary (including retirement) and involuntary turnover (including dismissal, redundancy, death etc.)

Note 2: Percentage of employees separated that were female

Note 3: Percentage of employees separated that were male

Note 4: As a percentage of all employees separated

Note 5: As a percentage of total employees: Refers to the number of separated female employees, separated male employees, and separated employees as a percentage of total employees as of December 2023 (excluding interns)

To ensure employees' retirement-related rights and interests, for employees who choose the retirement scheme under the "Labor Standards Act", 2% of the total monthly salary is deposited into the designated Bank of Taiwan account. The accumulative labor retirement reserve in 2023 totaled NT\$566,432,337, and had been fully contributed. For the others choosing the "Labor Retirement Pension" system, the Company contributes 6% of individual monthly salary to each employee's personal retirement account. Employees are eligible to contribute more amounts voluntarily, and the amount is deposited into the employee's retirement account along with the 6%, providing substantial retirement security. Currently 98.8% of employees use the new system.

## Employee Engagement Survey

Nanya conducts an organization-wide Employee Engagement Survey annually to gain insight into employees' level of approval towards the Company on several aspects, including work, management, and organizational vision. This survey used 28 questions to collect employees' opinions on 6 aspects. The response rate in 2023 was 93.4%, and the average approval rate of employees was 75.3%, a slight decrease of 0.9% from 76.4% in 2022. We observed that the decrease was mainly due to the lower score of "Employee satisfaction with promotion/ compensation" as the Company's poor overall business performance in 2023 affected salaries and bonuses.

### Average Approval Rate

Aspects	2020		2021		2022		2023	
	Female employees	Male employees						
Individual work performance	65.2%	70.3%	71.3%	72.7%	72.3%	74.1%	70.6%	73.1%
Engagement with line manager	68.1%	75.9%	70.5%	74.3%	73.8%	79.0%	74.2%	78.5%
Understanding of corporate vision/ culture	70.9%	77.2%	79.5%	78.2%	82.0%	82.9%	81.8%	81.7%
Performance of the managed team	68.3%	73.1%	74.7%	74.1%	73.0%	76.6%	74.3%	76.8%
Relationship with peers	77.2%	80.4%	78.0%	79.9%	80.6%	81.7%	78.4%	80.6%
Satisfaction with promotion/ compensation	57.9%	65.2%	57.2%	57.5%	68.6%	69.5%	64.9%	68.4%
Rate of reaching average approval	70.8%		72.3%		76.2%		75.3%	
Response rate	93.0%		93.4%		93.4%		93.4%	

Note: This survey uses a ten-point system. "Average approval" refers to 7 points or more. The percentages in the columns represent the percentages of survey responses that indicated 7 points or more.

Based on the cross-analysis of the survey results, we found that entry level personnel on the production line and employees with 3-5 years of experience have relatively low approval of work, promotion compensation, learning, and growth. The following improvement measures were formulated based on needs, in order to improve the approval of employees and respond to the purpose of the opinion survey:

### Employee Engagement Survey improvement measures

Subjects	Aspect of items	Improvement measures
Entry-level production line personnel	Work	<ul style="list-style-type: none"> <li>Strengthen the employee protection mechanism to prevent workplace bullying, which will be carried out in two ways: strengthening on a case-by-case basis and strengthening from the source (work)</li> </ul>
	Promotion and remuneration	<ul style="list-style-type: none"> <li>Promotions are held twice a year for direct personnel and we will continue to optimize the promotion system (shorten the number of years) to ensure the promotion of outstanding employees (promotion)</li> </ul>
	Learning and growth	<ul style="list-style-type: none"> <li>Starting salaries for direct personnel have been adjusted for two consecutive years. In 2024, an on-boarding bonus and a bonus for years of service were established. We will continue to optimize employees' salaries for competitiveness (remuneration)</li> <li>Plan experiential teamwork, problem-solving learning and growth courses (learning and growth)</li> </ul>
Employees with 3-5 years of experience	Work	<ul style="list-style-type: none"> <li>Strengthen the employee protection mechanism to prevent workplace bullying, which will be carried out in two ways: strengthening on a case-by-case basis and strengthening from the source (work)</li> </ul>
	Promotion and remuneration	<ul style="list-style-type: none"> <li>Starting salaries for indirect personnel have been adjusted for three consecutive years, and we optimized salary adjustments based on experience and training. We will continue to optimize employee salaries based on market standards to be more competitive (remuneration)</li> </ul>
	Learning and growth	<ul style="list-style-type: none"> <li>Plan a series of courses for the new generation of outstanding talents to effectively apply their thinking in the workplace (learning and growth)</li> </ul>

### Work-life Balance Indicator

	2021		2022		2023	
	Female	Male	Female	Male	Female	Male
Job satisfaction	71.4%	73.8%	71.6%	75.2%	71.2%	74.9%
Achievement	68.6%	72.6%	69.9%	74.3%	68.8%	73.6%
Happiness	79.0%	78.1%	79.0%	79.2%	77.2%	77.4%
Pressure Balance	72.3%	74.1%	75.8%	75.6%	72.8%	74.6%
Belonging	76.6%	75.4%	79.0%	78.7%	75.9%	76.8%

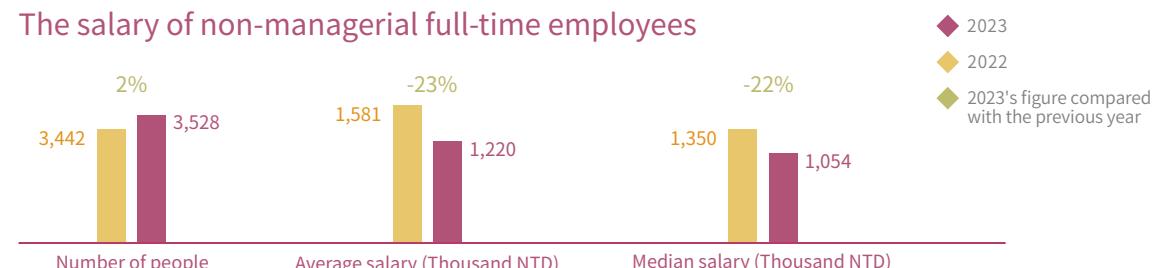
We began to conduct questionnaire analysis on the employee wellbeing measurement indicators developed by the University of Oxford's Wellbeing Research Center in 2021 to create a workplace with work-life balance. The questionnaire items correspond to work fulfillment, sense of goal achievement, and happiness and stress balance. These indicators are closely related to employee salaries and benefits. This analysis also helps us formulate relevant improvement measures.

## • Attractive compensations

Nanya's salary packages for new recruits are determined based on individual educational background, salary standards in the industry, local economics, and supply/demand of the local labor market, and they are outlined in employment contracts. Employees of similar job role, education and career experience are remunerated with equivalent salaries and benefits without gender difference of any kind. Adjustments to employees' salaries and benefits are evaluated primarily based on work performance.

The Company's compensation and welfare systems have been developed through local salary surveys and discussions with regional salary associations, after taking into account factors such as industry competitiveness, macroeconomics, corporate culture and business sustainability. This process ensures the competitiveness of our overall salary package. Monthly salary include base salary, food/transportation/region-based allowance, operational allowance, and efficiency bonus. We also offer additional bonuses and variable compensations based on employees' individual performance and accomplishment of organizational goals (or profitability), and in doing so, we reward employees for their excellent performance and share with them the profits we make as a group, regardless of their gender. In 2023, the average salary of non-managerial full-time employees was NT\$1,220,000, a 23 % decrease compared to 2022. The median salary of non-managerial full-time employees was NT\$1,054,000 .

### The salary of non-managerial full-time employees



## • Terms of compensation that enhance talent retention

Nanya is a composition of Taiwan High Compensation 100 Index, indicating the strong competitiveness of the Company's compensations.

Year-end bonus, festive bonus, Dragon Boat Festival/Mid-autumn diligence bonus, grade bonus.

Long-term incentives: employee stock option certificates which applicable to all employees of Nanya, according to the employee's performance, position and other conditions, incentive bonus and annual salary adjustments.

The starting salary for entry-level production line operators is above **NT\$28,020**

Higher than the minimum wage in 2023<sup>Note 1</sup> by a margin of **6.06%**

The starting salary for employees with a bachelors degree in engineering is above **NT\$41,620**

Higher than the minimum wage in 2023<sup>Note 1</sup> by a margin of **57.65%**

Note 1: The minimum wage was adjusted to NT\$26,400 on January 1, 2023.

The starting salary for male and female employees in Taiwan is the same. Female managers received slightly lower compensation on average than males in 2023. In terms of total salary package, females received 95.02% that of males on average; in terms of total salary plus remuneration, females received 95.30% that of males on average. This difference was mainly attributed to the higher average years of service among males, which made them entitled to higher compensation and remuneration compared to females. In 2023, female employees of non-managerial role received total salary package at 106.99% that of male counterparts on average, and remuneration at 109.28% that of male counterparts on average. Females received higher compensation and remuneration than males in this respect mainly because of their higher average years of service. Overall, the Company offers competitive compensation along with full benefits and facilities that enable employees to maintain job security and quality lifestyle.

Compensation Between Male and Female	2020	2021	2022	2023
Female-to-male total salary ratio of managing supervisors	-	-	-	-
Female-to-male total salary + remuneration ratio of managing supervisors	-	-	-	-
Female-to-male total salary ratio of managerial roles	93.72%	94.55%	95.68%	95.02%
Female-to-male total salary + remuneration ratio of managerial roles	94.91%	94.55%	95.28%	95.30%
Female-to-male total salary ratio of non-managerial roles	110.34%	108.71%	108.42%	106.99%
Female-to-male total salary + remuneration ratio of non-managerial roles	113.49%	111.47%	111.43%	109.28%

#### Note:

【Total salary】 refers to the regular salary (including basic salary, efficiency bonus, meal/location/transportation allowance, operational/professional bonus, and other payable items) + grade bonus.

【Remuneration】 refers to incentive bonus + employee remuneration + festive bonus + Mid-autumn and Dragon Boat Festival Diligence bonus + year-end bonus.

【Managing supervisor】 refers to assistant vice president grade and above, and the Company had 0 female senior manager in the last 3 years.

【Managerial role】 refers to section chief + department head + plant/division head.

## Talent Cultivation

### • Talent Development Guidelines



#### Philosophy

The Company values people and sustainability, and advocates lifelong learning while assisting employees with their career development. It is the Company's goal to create a competitive talent cultivation and development system that is suitable for the semiconductor industry.



#### Policies

We continue to step up talent cultivation and development, optimize the training system, deepen diversity, equity, and inclusion education, and systematically train employees to develop proper skills, knowledge and attitude, in order to achieve the Company's sustainable development goals.



#### Goals

**2024 Goals :** Percentage of key talents among all employees  $\geq 5.8\%$ ; Internal employee substitution rate for job openings  $\geq 65\%$ .

**2025 Goals :** Percentage of key talents among all employees  $\geq 6.0\%$ ; Internal employee substitution rate for job openings  $\geq 65\%$ .



#### System

Training quality management manual, human resources management procedures, training procedures, education/training implementation rules, structured on-the-job training policy, Continue-in-Education Management Procedure, internal instructors training policy, mid-level management and executive talent cultivation policy, and training materials management policy.



#### Implementation

Formulate and implement annual talent development plans according to the Company's strategies, and review implementation indicators on a monthly basis. On a quarterly/semi-annual basis, senior managers and members of the Training and Talent Development Committee come together to review the plan implementation progress and the effectiveness of talent development efforts.

## Co-learning Gathering—We<sup>+</sup>~We Together · We Learn · We Grow

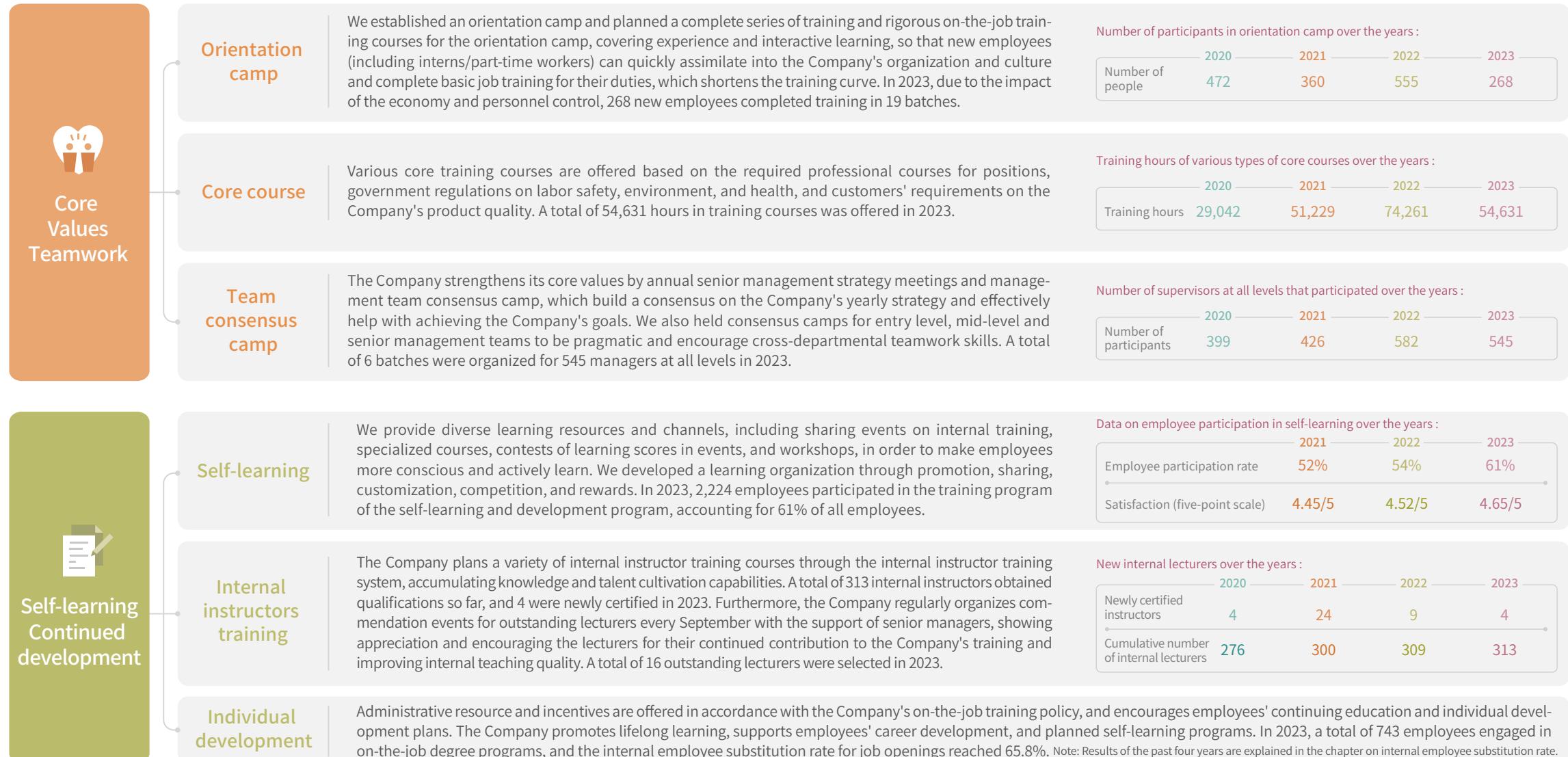
"People" are the most important asset of Nanya. "Talent" is the foundation of the Company's innovation, operation and sustainable development, and is the key capability for maintaining the Company's sustainable operation and innovative R&D. Even if there are drastic changes in the external environment, Nanya continues to create growth momentum amidst changes, formulates a clear talent development and management approach, puts people first and keeps sustainable management in mind, advocates lifelong learning, assists employees in their career development, and establishes an advantageous training system suitable for the semiconductor industry. The talent development mechanism, competency applications, and diverse training programs continue to be improved with strong support and participation from senior managers.

After the talent cultivation project's theme of [Co-learning Gathering – We Together · We Learn · We Grow] in 2021, the theme of our 2022 talent cultivation action plan was [Work Together, Learn Together, Grow Together]. In 2023, the theme of Co-learning Gathering integrated [Work Together, Learn Together, Grow Together] into We+, strengthening the connection between core values of teamwork, independent learning and continued development, and knowledge, skills and professional capabilities, returning to the concept of "people-oriented." This meets the needs of employees for self-learning and self-development, stimulate employees' learning willingness and potential, and improves employee development channels, giving employees more room for growth, while building long-term and effective incentives for talents.

### Core Values, Team, and Collaboration



Co-learning Gathering - We+ integrates We Together, We Learn, We Grow, and the core values of "teamwork," "self-learning and continued development," and "knowledge, skills, and professional capabilities" are described below:





## Knowledge and skills Professional skills

### Professional competency training

According to the Regulations for the Implementation of Structured On-the-Job Training (SOJT), we established a learning blueprint for each position, build up the professional capabilities of employees, and strengthened the system of each department for passing on professional skills through the clear S-OJT planning process and system management. This allows each department to plan on-the-job training and more effectively integrate the department's core capabilities, shortens the learning curve, and improves the effectiveness of organizational training. The on-the-job training completion rate in 2023 was 100%. (SOJT completion rate was 100% in the last four years).

To ensure effective control of materials used internally by various departments for Structured on-the-Job Training (S-OJT), the Company has established a set of training material management guidelines and integrated it with the approval process of the knowledge management system so that the training materials are accessed more efficiently through a unified portal. The system currently holds 5,947 internal training materials and operational documents contributed by various departments, up 11.6% compared with the previous year.

### Artificial intelligence practices

We continued to offer the AI talent cultivation practical course in our fab, which provides internal training for professional talent in AI, enhances the AI technical abilities of fab personnel, and was effectively expanded to departments in the Company, suppliers, and students. The application of AI in practical work scenarios comprehensively improves work efficiency, reduces production cost, and enhances the Company's competitiveness. As of 2023, we cultivated 460 specialists in AI in factories.

### Direct employee training

Direct employees are offered pre-job training on professional knowledge and machine operation skills. Seventy-eight employees have successfully obtained the machine operation certification in 2023. By adopting the trainer system and offering rewards, direct employees are given the incentive to adapt quickly to the clean room environment and join the production line at an earlier time. A total of 63 direct employees had completed their training during the year. In addition, 79 trainers completed the three-year trainer refresher training course in 2023.



Award ceremony for outstanding instructor

#### Cultivation of AI specialists over the years :

	2020	2021	2022	2023
Number of people	245	381	402	460

#### Production line personnel training data over the years :

	2020	2021	2022	2023
Certified participants	74	68	71	78
New recruits	115	68	122	63



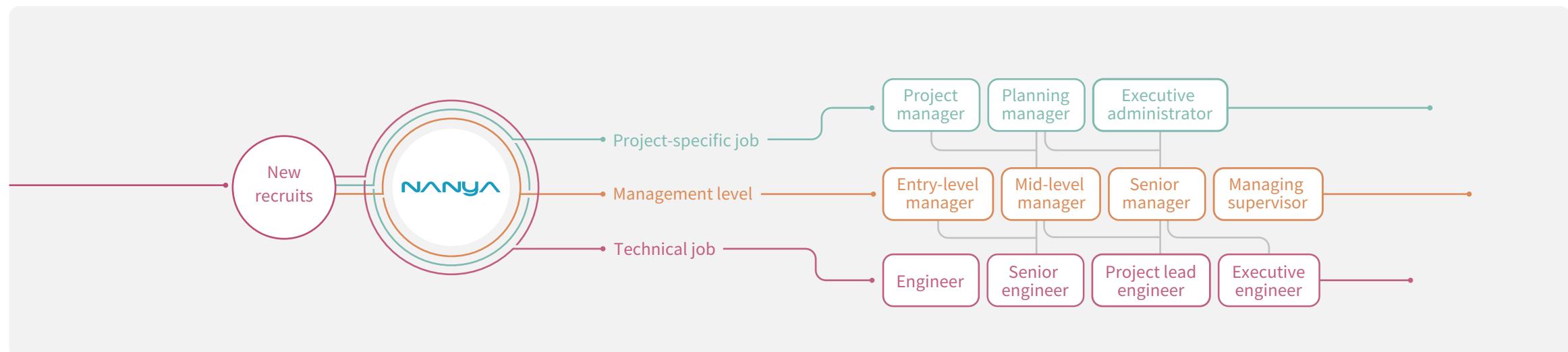
Artificial intelligence practical training

- Statistics on the number of internal employee substitution for job openings in 2023

	Female	Male	Total shares
Age group	Under 30	5	7
	30-50	12	36
	Over 50	1	14
			15
Job Level	Managers (A+B+C)	0	11
	Senior manager (A)	0	1
	Mid-level manager (B)	0	10
	Entry-level manager (C)	0	0
	Non-management level	18	46
			64

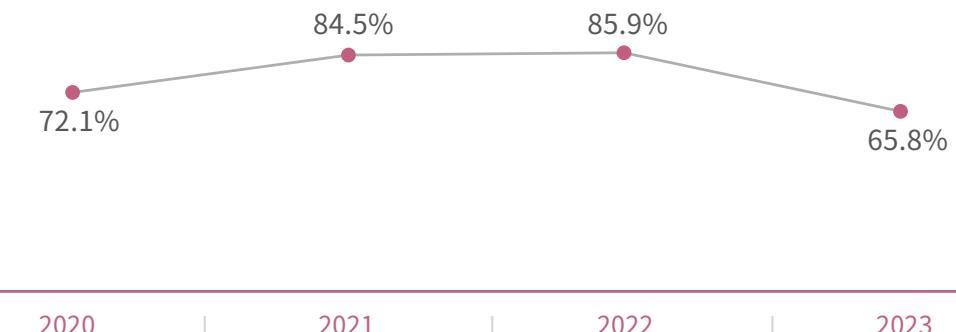
Note: Manager position openings filled by internal employees was 63.9%

- Employee development path



## • Internal Employee Substitution Rate for Job Openings

We assist employees with diverse training and development, provide employees with promotions and career planning for different positions, and set the internal employee substitution rate for job openings. The internal employee substitution rate for job openings in 2023 was 65.8%. The data over the years is as follows:



Note 1: Employee substitution rate (%) = Number of job openings filled internally/Total number of job openings that year \* 100%

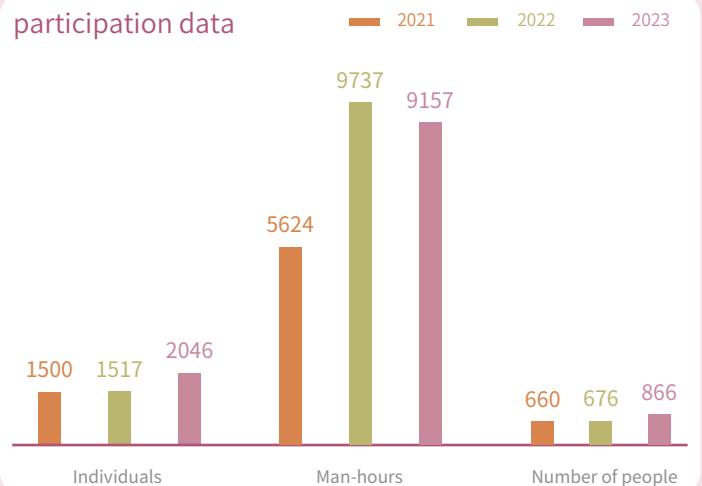
Note 2: The Company did not expand its employee quota due to the market in 2023, so the number of people who can be transferred was limited, and the internal employee substitution rate of job openings in 2023 was lower than the previous year.

## • Experience sharing Self-learning

The self-learning program uses employees as the starting point from "Make me learn" to "I want to learn", explores employees' growth needs, and raises employees' self-awareness and independent and active learning attitudes. The purpose is to create a good learning culture in the Company and develop a learning organization. Self-learning courses that were planned include "Self-learning master," "Learning master academy," and "iCan · iMaker".

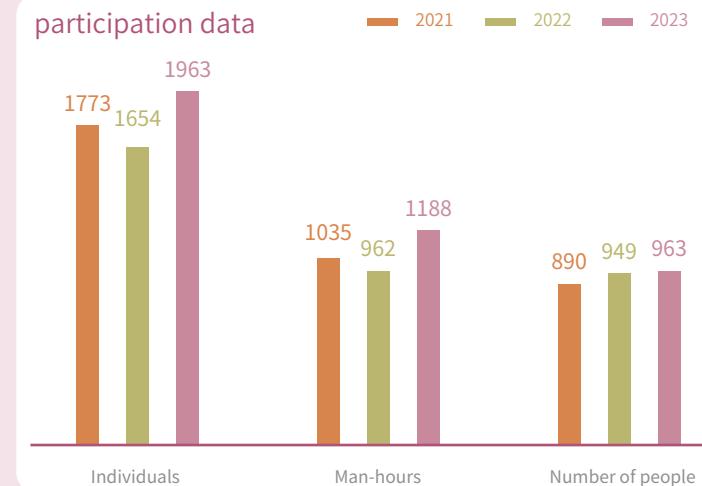
### Self-learning master

The self-learning program for individuals allows employees to show their self-awareness and active learning attitude by participating self-learning courses. Rewards are provided for different functional groups based on individual participation in self-learning courses during senior executive meetings in the first half of the year, second half of the year, and annual meetings. Results of the past three years are as follows:



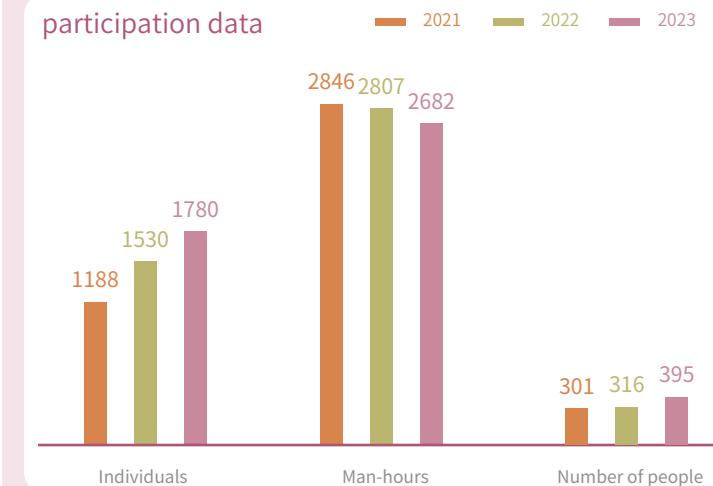
### Learning master academy

For self-learning courses planned according to the annual training and development plan, a test is prepared for self-learning courses designated by the training and development system, so that employees can challenge themselves by taking the test. The test challenge is divided into department and individual self-learning challenges. Employees with perfect scores are rewarded each quarter based on their individual performance. Employees with perfect scores for their annual performance are also rewarded. In addition, the department with the most employees who participated will receive the self-learning challenge reward for departments. This creates an atmosphere of learning in department teams and develops a self-learning organization. The results of the past three years are as follows:



### iCan. iMaker

This self-learning project is mainly for departments, and encourages units to plan their own courses, so as to develop a self-learning organization. Departments design their own learning plans and complete the courses planned for the entire year. Departments that complete the learning plan submit a results report, and receive a reward if the report is approved. The results of the past three years are as follows:



Note: The self-learning program creates an environment with diversity, flexibility, and cross-disciplinary learning, and cultivates employees' self-learning, cross-disciplinary exploration, and lifelong learning abilities, developing a diverse learning organization through promotion, sharing, customization, competition, and rewards. This encourages employees to learn and participate in courses, and show their attitude to learn on their own. We hope that employees will show their creativity after learning knowledge, become more willing and capable of learning, expand learning to professional skills at work, further enhance the Company's overall competitiveness and their personal development.

## • Talent Cultivation and Development Results

Despite the sluggish external market environment in 2023, the Company's training indicators related to talent development and training remained stable. The annual training implementation rate was 122.7%, and the total number of annual employee trainings completed was 178,000, an increase of 8.5% compared to 2022. Talent development and training results and indicators are described below:

### 2023 Employee Training Data by Age

Item	Female			Male			Total	
	Age	Under 30	30-50	Over 50	Under 30	30-50	Over 50	
Number of Employees	152	733	128	536	1,770	328	3,647	
Man-hours of training (hours)	7,407	20,459	3,183	27,819	65,497	9,914	134,279	
Average training hours per person (hours)	48.7	27.9	24.9	51.9	37.0	30.2	36.8	
Training expense (NT\$)	218,545	1,761,296	345,562	6,424,647	10,928,613	1,937,419	21,616,083	
Average training expense per person (NT\$)	1,438	2,403	2,700	11,986	6,174	5,907	5,927	

### Average Employee Training Time by Category

Unit: hours

Properties	Female				Male				Total hours			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
Managerial role	33.5	20.0	21.8	26.9	29.3	22.5	27.6	33.0	9,067	7,855	9,288	11,100
Professional technology	26.7	40.8	22.6	20.2	26.9	41.0	40.2	33.1	54,400	84,061	80,507	66,188
Core administration	52.2	72.5	73.2	63.0	50.8	70.6	91.8	76.7	33,529	46,966	57,216	47,714
Direct employees	27.7	19.3	20.6	18.3	27.2	18.0	23.4	20.5	14,239	9,004	10,708	9,277

Management competencies, which are organizational management abilities that managers need to improve, include the Successor Pioneer Program, key talent cultivation project, elite talent management competency training project, management trainee rising star program, managerial competencies of entry-level managers, women's empowerment, and team consensus camp. Management training data are divided by management competencies as follows:

### 2023 Management Training Data by Level<sup>Note1</sup>

Item	Female			Male			Total	
	Managerial role category	Entry-level manager	Mid-level manager	Senior manager	Entry-level manager	Mid-level manager	Senior manager	
Number of managers (persons) <sup>Note2</sup>	95	28	3	7	161	66	360	
Man-hours of training (hours)	716	1,278	101	53	7,350	2,220	11,718	
Average training hours per person (hours)	8	46	34	8	46	34	33	
Training expense (NT\$)	159,358	562,724	79,751	11,742	3,235,663	1,754,520	5,803,758	
Average training expense per person (NT\$)	1,677	20,097	26,584	1,677	20,097	26,584	16,122	

Note:

1: Employee training hours do not include training under one-to-one mentorship

2: Managerial role refers to a position in the management level, including entry-level managers (team leader, shift leader), mid-level managers (department manager and section manager), senior managers (plant manager, directors, and above)

To effectively align the Company's strategic goals with training plans, evaluation of training and development results uses KPI defined (L1-L4) by the Kirkpatrick model of Donald Kirkpatrick, and L5 return on investment is set based on the Company's strategic goals. Learning effectiveness is measured after courses and achieves completeness and predictability of training results evaluation.



Executive Team Consensus Camp - Speed Track, Peak Team

	L1 (Reaction Evaluation)	L2 (Learning Evaluation)	L3 (Behavioral Evaluation)	L4 (Results Evaluation)	L5 (Return on Investment)
Item	Post-course satisfaction Closing report	Test/rehearsal Written report Operational certification	Results of Customer Satisfaction Survey	Employee promotion rate Employee substitution rate Retention rate of key talents Results presentation, awards, etc. Productivity, sales value (volume) Improvement proposal	Human capital rate of return
KPI-2023 Goals	Post-course satisfaction score $\geq 4.5$	Course pass rate $\geq 94\%$ Total annual plan accomplishment rate $\geq 100\%$	Customer satisfaction score $\geq 91$ Project achieving rate $\geq 91\%$	Employee promotion rate $\geq 16\%$ Employee substitution rate $\geq 65\%$ Retention rate of key talent $\geq 98\%$ TCSA Talent Development Leader Award No. of improvement proposals $\geq 120$	Human capital rate of return $\geq 12.5$ (According to company goal of the year)
2023 Achievements	Post-course satisfaction score: 4.65	Course pass rate 94.3% Total annual plan accomplishment rate: 122.7%	Customer satisfaction score: 94.6 Project achieving rate 71.5%	Employee promotion rate 15.58% Employee substitution rate 65.8% Key talent retention rate 98% Received the TCSA Talent Development Leader Award No. of improvement proposals: 202	Human capital rate of return: 4.8
KPI-2024 Goals	Post-course satisfaction score $\geq 4.5$	Course pass rate $\geq 94\%$ Total annual plan accomplishment rate $\geq 100\%$	Customer satisfaction score $\geq 91$ Project achieving rate $\geq 91\%$	Employee promotion rate $\geq 16\%$ Employee substitution rate $\geq 65\%$ Retention rate of key talent $\geq 98\%$ TTQS (Talent Quality-management System) Talent Development Quality Award No. of improvement proposals $\geq 120$	Human capital rate of return $\geq 10$ (According to company goal of the year)

Note 1 : Human capital rate of return =  $(\text{Operating revenue} - (\text{Operating expenses} - \text{Labor costs})) / \text{Labor costs}$

Note 2 : Training expenses as a percentage of revenue =  $(\text{annual training expenses} / \text{annual operating income}) * 100\%$

Note 3 : Key talent – Talent in key positions that are necessary for executing the Company's business strategies and hard to replace.

Note 4 : Turnover rate of new employees – Turnover rate of new employees within three months after hiring

Level	Item	2020	2021	2022	2023	2023 Goals	points (10-point scale)
Level 5 Return on investment (ROI)	Human capital rate of return <sup>1</sup>	12.8	16.7	10	4.8	$\geq 10$	3.8
	Training expenses as a percentage of revenue <sup>2</sup> (%)	0.017%	0.012%	0.017%	0.073%	-	-
	Employee promotion rate (%)	16.81	16.64	15.58	14.73	$\geq 16$	9.2
	Promotion rate of employees with <3 years of service (%)	4.11	5.59	5.16	2.51	-	-
	Promotion rate of employees with $\geq 3$ years service (%)	12.7	11.05	10.43	12.22	-	-
	Voluntary turnover rate (%)	5.01	7.26	8.80	4.58	$\leq 6$	10
	Turnover rate of key talents <sup>3</sup> (%)	0	0	0.5	2	$\leq 2$	10
	Turnover rate of new employees <sup>4</sup> (%)	7.47	9.4	14.99	7.77	$\leq 12$	10
	Employee substitution rate (%)	72.1	84.5	85.9	65.8	$\geq 65$	10
	Patent count (cases)	438	465	812	953	-	-
Level 4 Results assessment (Result)	Improvement proposals (cases)	228	214	224	202	$\geq 120$	10
	Customer satisfaction (score)	93.7	93.8	94.7	94.6	$\geq 91$	10
	Competency training completion rate (%)	100	100	100	100	100	10
Level 2 Learning assessment (Learning)	Course pass rate (%)	93.4	94.7	94.5	94.3	$\geq 94$	10
Level 1 Response assessment (Reaction)	Course satisfaction (5-point scale)	4.64	4.59	4.61	4.65	$\geq 4.5$	10

## • Important Talent Development Programs

We continued to implement the comprehensive talent cultivation and development plan [Co-learning Gathering] to cultivate comprehensive professional technical talent. In 2023, we integrated the talent cultivation action plan [We Together, We Learn, We Grow] into Wet+, and linked the Company's business strategy planning with technology projects and training and development projects. Key training and development projects and their results in the past four years are as follows:

### 2023 Co-learning Gathering Talent Cultivation Project

#### Project

- Core competency required by employees
- The ability to influence organizational management that supervisors need to improve
- Professional skills that employees need to perform their duties
- Provide employees with diverse individual development programs



Employee participation rate 82%  
(As a percentage of all employees)

#### Training topic

Strengthen the Company's all-round talent cultivation, link the Company's strategic goals for talent development to proprietary technology, formulate an overall training plan for effective cultivation, technological development, and promotion of self-learning, improve employees' professional competencies, further develop proprietary technologies, improve the quality of talent, and enhance the Company's competitiveness.

#### Assessment of training outcome and operational yields (NT\$)

##### L1 Post-course satisfaction

Employee response Average post-course satisfaction score: 4.65

##### L2 Course pass rate

Employee learning Training course pass rate: 94.3%

##### L3 Skill improvement

Employee behavior SOJT completion rate 100%

##### L4 Performance

###### Specific benefits

- Number of patents proposed: 953
- 50 productivity improvement proposals (6 approved, 1 productivity improvement proposal)
- 202 improvement proposals, with annual benefits of NT\$756.7 million
- Additional value increases annual product output value by approximately NT\$2,580 million

#### Case study : Productivity improvement

(1)For wafer film grinding in the semiconductor wafer manufacturing produces, after system improvement problem analysis, the system automatically calculates and controls thickness to improve production constraints, and thereby improve production efficiency and yield. Improvement proposals were also made for process and equipment risks, production capacity, and quality risks and EHS risks. The actual annual benefit reached NT\$756.7 million.

(2)Increase the profit margin of products, manage and execute each agile project with planned goals, set quarterly goals and incentive plans, reach a consensus at strategy meetings, and use product development efficiency and higher number of customer verifications to increase sales of products with added value and thus increase revenue.

##### L5 Return on investment

Financial value NT\$3,336.7 million(ROI:153%)

Employee participation rate 26%  
(As a percentage of all employees)



### 2023 Smart equipment independent development project

#### Project

- Smart manufacturing application example
- Key technologies and application of smart manufacturing
- Artificial intelligence practices on-the-job course
- Hybrid project management



#### Training topic

Complete self-made production equipment to reduce the Company's procurement expenses and costs, fully utilize the capabilities of AI, improve employees' application abilities in their position, and improve the Company's operating performance.

#### Assessment of training outcome and operational yields (NT\$)

##### L1 Post-course satisfaction

Employee response Post-course satisfaction score: 4.82

##### L2 Course pass rate

Employee learning Training course pass rate: 97%

##### L3 Skill improvement

###### Employee behavior

- Submit trade secrets and patent applications for the project
- Submit a paper on innovative machine design and proprietary technology

##### L4 Performance

###### Specific benefits

- The total benefit from self-made equipment is NT\$68.1 million
- Overall savings from replacing machines is estimated at approximately NT\$83.6 million
- Using self-made machines for calculation, labor cost can be reduced by 13,200 man-hours, which can save NT\$3.7 million

#### Case study : Advantages of using self-made machines for communication:

(1)Reduces labor safety risks, reduce project costs, and is not restricted by the installation location. Makes problem analysis easy and has strong resistance to light interference, reducing the ineffective waste of personnel. This will save 13,200 man-hours on overall maintenance and reduce labor cost by NT\$3.7 million.  
(2)Innovative use: Use computer imaging to replace the hardware detection mechanism, and reduce the number of parts in machine design to significantly reduce costs and comply with specifications. Analyze operating procedures of the fab to eliminate ineffective waste, establish standards, and achieve smart processes. The agile project management approach is used to accelerate machine, system, and AI model development.

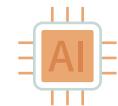
##### L5 Return on investment

Financial value NT\$155.4 million(ROI:151%)

## 2022 DRAM Smart Manufacturing Leadership Project

### Project

- Align smart technology with smart manufacturing development trends
- Key technologies and application issues of smart manufacturing
- Artificial intelligence practices on-the-job course
- Industry-academia collaboration in AI modeling



Employee participation rate 90%  
(As a percentage of all employees)

### Training topic

Optimize product production behavior on site, improve the production efficiency of machinery, and further increase daily output of machinery to achieve smart production. Further achieve fully automated monitoring, analysis, and decision-making in production to increase the productivity of machinery and improve the Company's business performance.

### Assessment of training outcome and operational yields (NT\$)

#### L1 Post-course satisfaction

Employee response Post-course satisfaction score: 4.48

#### L2 Course pass rate

Employee learning Training course pass rate: 85.6%

#### L3 Skill improvement

Employee behavior Productivity proposals : 56

#### L4 Performance

Improved efficiency

- Accumulated amount from improving the efficiency of machinery transfer reached NT\$1.16 million
- Manpower saved from automatic dispatching reached NT\$2.9 million/year
- Cost reduced by independently developing software reached NT\$103.2 million
- Output volume Contributed to the sales of 121.8M special products

Case study : Increasing production efficiency through automation:

- To improve operating procedures for delivery, the AI system simplified the many reports and forms that personnel needed to reference when deciding the combination of machinery and chambers required for delivery, and uses OPI for delivery. The automatic dispatching reduced the manpower needed by approximately 4.9 people/day. The increase in productivity saves 4.9 people per day, which is equal to saving NT\$242,000 per month with annual benefits reaching NT\$2.9 million.
- The optimization theory is applied to monitoring and analysis data to simulate analysis and decision-making by personnel, including important indicators and factors for evaluation, in order to continue optimizing the production strategy. Precision dispatching decisions made by the system increase the productivity of machinery.

#### L5 Return on investment

Financial value NT\$94.08 million(ROI:1032%)

## 2022 Advanced Process Proprietary Technology Development Project

### Project

- Emerging transistors and memories
- New transistor process and advanced development technologies
- Advanced Process Key Yield Improvement Plan
- New structures and new processes of contact resistance



Employee participation rate 54%  
(As a percentage of all employees)

### Training topic

In response to the R&D project on smaller components for new processes in response to the development of DRAM generations, the project goal is to improve outstanding characteristics of components, meet design-end requirements, and lower the cost of product mass production. A key technology in the Company's development of new generation processes, and an important milestone in the Company's proprietary technologies and sustainable operation.

### Assessment of training outcome and operational yields (NT\$)

#### L1 Post-course satisfaction

Employee response Post-course satisfaction score: 4.72

#### L2 Course pass rate

Employee learning Training course pass rate: 87.3%

#### L3 Project achieving rate

Employee behavior Project achieving rate 100%

#### L4 Productivity

Improved efficiency A total of 12 product R&D/validation tasks were completed; 109 productivity proposals and 228 improvement proposals were raised.

Development yield Successfully independently developed technology with record 65% YA

Result publication Process product development items completed 28 items (182 items in total)

Case study : Next generation process component development

- Independently develop changes in parameters, such as the thickness and material of the dielectric layer, smaller channel length, distance between gate and contact, contact area and lower the resistance of contact, R&D of smaller components to maintain the excellent performance of components.
- Incorporate new processes and new overlay technologies, transition to optical measurement methods from image measurement methods in the past to reduce electrical and physical failure and increase measurement precision.

#### L4 Performance

Financial value is expected to increase by NT\$405 million when production begins

## 2021 Complete organizational management talent training plans

### Project

- Strengthens the Company's core value and creates momentum for innovation
- Eliminates selfish departmentalism and effectively manages conflicts
- Encourages active participation by the team to continue making breakthroughs and pursuing excellence
- Strengthen team work and enhance the competitiveness of team members

Employee participation rate 86%  
(As a percentage of all employees)



### Training topic

The comprehensive improvement of management competencies includes management competency, teamwork, strategic expertise, and diverse new knowledge. It strengthens the vision and goals of managers when leading the organization, so that they will influence others through their actions and inspire the team to achieve better business performance for the Company.

### Assessment of training outcome and operational yields (NT\$)

#### L1 Post-course satisfaction

Employee response Training course satisfaction score: 4.7

#### L2 Course pass rate

Employee learning Manager training course pass rate: 97.4%

#### L3 Project achieving rate Management ability evaluation

##### Employee behavior

- Project achieving rate 96.5%
- 360 evaluation approval rating: 4.5 points (5-point scale)

##### Case study:

(1)Completed the assessment of 30 competencies and behavior of 151 key talents, and established six key competencies, including accountability, excellent innovation, bold implementation, collaboration, communication and coordination, and talent development. We analyzed the gap in competencies and planned training courses to improve personal management abilities. (2)Leaders and managers led all employees of the Company in setting management goals, which are examined on a quarterly basis. Improvement proposals were made for operations of various units in the Company. A total of 207 improvement proposals were made in 2021 and provided NTD8.83 million in actual annual benefits.

#### L4 Performance Retention rate Productivity proposal Improvement proposal

##### Result publication:

- Employee retention rate: 95.5%
- Key talent retention rate 100%
- 38 productivity improvement proposals raised
- No. of improvement proposals: 214

#### L5 Return on investment

Financial value NT\$8.83 million(ROI:180%)

## 2021 MCP technology development and sales

### Project

- Market demand analysis and development
- Customer technology exchanges and services
- Engineering technical support ability
- Product production management

Employee participation rate 37%  
(As a percentage of all employees)



### Training topic

Goal: Nanya becomes 1st in the world in terms of MCP market share Engage in cross-industry collaboration to complete the first MCP of Nanya, and incorporate it in the multi-chip analysis process, as well as testing tool and program development to directly increase the Company's revenue.

### Assessment of training outcome and operational yields (NT\$)

#### L1 Post-course satisfaction

Employee response Training course satisfaction score: 4.4

#### L2 Course pass rate

Employee learning Training course pass rate: 100%

#### L3 Project items achieved

- Employee behavior
- Completed 13 experiments on the characteristics of multi-chip memory
  - Stress test time for multi-chip memory decreased 82.2%
  - Resolved 37 abnormalities on the client end
  - Added 9 products to the portfolio

##### Case study :

(1)After market survey and customer requirements analysis, multi-chip memory was determined to have development potential and is mainly applied to IoT related network communications modules. The project developed the Company's first multi-chip memory, and will need to develop 9 multi-chip memory products. As of 2021, the product was verified by 105 customers around the world, and was adopted by 31 customers, contributing NT\$2.8 billion to revenue (2)Established the Company's multi-chip memory analysis process, and developed testing tools and procedures, saving NT\$38.8 million in machinery testing expenses (3)Established multi-chip memory debug analysis equipment, optimized RMA analysis methods and engineering technical abilities, and implemented product production management models

#### L4 Performance

##### Performance and results:

- Multi-chip products contributed NT\$2.8 billion to revenue
- Multi-chip product shipment of 30.7M was the second highest in the world
- The EVA of multi-chip products increased 10% (NT\$280 million)
- Saved NT\$38.8 million in machinery testing expenses

#### L5 Return on investment

Financial value NT\$31.19 million(ROI:790%)

## 2020 Development and Sales of Application-specific DRAM Products

### Project

1. Open-class specialized technical training program
2. Organization and plan management project execution training
3. Systematization of AI in production technologies
4. Marketing and sales of non-standard advanced product servers, low-power automotive-grade and industrial-grade products



### Training topic

Sending all kinds of application-specific products to customers ahead of time for engineering verification enabled timely securing of a place in relevant non-standard DRAM markets. This not only increased the Company's profit but also stabilized revenue.

### Assessment of training outcome and operational yields (NT\$)

#### L1 Post-course satisfaction

Employee response Post-course satisfaction score: 4.66

#### L3 Skill improvement

Employee behavior Project achieving rate 90.5%

#### L4 Technical projects

Employees' results Technical projects: Basic theoretical studies, including 22 machine learning algorithms, 11 deep learning algorithms, and 7 project research topics were completed.

#### L4 Productivity

Improved efficiency A total of 12 product R&D/validation tasks were completed; 109 productivity proposals and 228 improvement proposals were raised.

Improved efficiency 1 : 38 AI projects were completed as enhancements for smart manufacturing production technologies:

21 applied deep learning models, 10 applied machine learning models, and 7 applied mathematical rules 2 : Benefits:(1)Labor costs: NT\$14 million (2)Contribution to revenue: NT\$176 million (3)Potential benefit of productivity: NT\$50 million

Improved efficiency A total of 239 product R&D/validation enhancement/advanced procedure adoption/productivity improvement tasks were completed, and 51 improvement proposals were raised. Output volume >950M

Case study : Improve product yields and analytical efficiency

1. We efficiently lowered the manpower of yield engineering personnel and improved productivity. A total of 24 pieces of production products were implemented, and could reduce the manpower by 2.7 persons per day, equivalent to saving NT\$116,000 per month. The annual benefit totaled NT\$1,393 million.

2. The yields increased around an average of 2% during the period of implementation, accounting for 20% of the annual benefit. Based on the calculation formula of wafer sales benefit, the benefit reached NT\$134.34 million.

#### L5 Return on investment

Financial value NT\$20.45 million(ROI:783%)

Financial value NT\$2.4 million(ROI:56%)

**Employee participation rate 37%**  
(As a percentage of all employees)

## Diverse development and learning paths

Nanya provides employees with diverse learning paths, promotes lifelong learning, and assists employees with career development, planning complete and diverse learning channels to expand their scope of learning.

### E-learning audio visual center

Establish a digital audiovisual center to provide employees with a digital learning environment. Provide employees with more flexible independent learning channels and environment, and expand the learning paths and channels for employees to preview/review

### Language learning subsidy

Provide the "Language Learning Subsidy Program," provide internal English training courses, and cooperate with external language training institutions. Establish the "TOEIC Exam Simulation System" for practice, organize internal TOEIC exam simulations, and set target TOEIC scores.

### On-the-job degree programs

Continue to encourage employee individual development, established the on-job training policy to provide subsidies and incentives to encourage employee participation in on-the-job training courses, in order to help individuals obtain new degrees.

### Participation in external training courses

Encourage employees to participate in external training courses, seminars, and workshops aligned with their personal development. Obtain various work-related certificates to enhance employees' product development and innovation capabilities, and continue to increase the value of products.

Year	2020	2021	2022	2023
Total hours of online courses (hours)	28,806	67,951	73,713	65,421
Language learning subsidy (NT\$)	462,372	213,606	264,068	192,660
Accumulated number of people enrolled in on-the-job degree programs (persons)	714	726	735	743
No. of participants in external training	186	109	137	120

## • Maximizing employee performance

The purpose of Nanya's performance management system is to maximize employees' potentials. In addition to providing good learning environment and implementing sound performance management systems, the Company also emphasizes productive interaction between line managers and their subordinates. Apart from annual performance evaluation, line managers are also required to engage subordinates in quarterly performance reviews. Through interaction and communication, employees are given the care and assistance they need to improve and accomplish individual as well as organizational goals.

The review process begins with the line manager breaking down organizational goals and setting individual work objectives for subordinates face-to-face, and is followed by feedbacks on the execution of work objectives and performance review at the end of the period. Between 2015 and 2022, 100% of employees that were subjected to management by objective were evaluated and included in the performance ranking. Performance management tools used by the Company included: Annual performance evaluation for all employees, quarterly general staff performance evaluation, 180- and 360-degree performance evaluations, and sustainable development evaluation for senior managers.

The 180-degree performance evaluation has included even more subjects, and used different talent development tools to provide employees at all job levels with the most suitable opinions for improving work performance. The coverage remained at 28% in 2023. The 180-degree performance evaluation takes into consideration the frequency of communication and coordination between section managers and each unit, and direct supervisors choose peers that directly make contact with each other in operations; the number of people in indirect units is 4-6 and direct units is 2-4. The 360-degree evaluation is intended for plant and division managers and above, and involves feedbacks from subordinates on the subject's managerial skills. The items assessed by each assessment tool are shown in the table below. Employees who exhibit good performance are rewarded; for those who exhibit poor performance, the system actively reminds their line managers to direct attention and provide assistance until there is significant improvement in performance. This treatment is not differentiated by gender in any way.

Note: Team leaders, shift leaders, chief engineers, project managers, and executive engineers were included in the 180-degree evaluation in 2021.

Assessment Criteria				
Properties	Multi-dimensional performance appraisal	Management by objectives	Agile conversations	Team-based performance appraisal
Subjects	Plant and division managers and above Department managers/project managers/executive engineer Section manager/project manager/project lead engineer Team leader/Shift leader	Assistant vice presidents (inclusive) and above	Department managers/project managers Section manager/Project manager/Team leader/ Shift supervisor/Foreman/Engineer/Administrator Administrative/Technical/Business Assistant	Direct employees
Assessment frequency	Annually	Annually	Quarterly	Monthly
Evaluation method	180 degrees To provide a relatively objective basis for performance evaluation, the frequency of communication and coordination with each unit is taken into consideration for section managers and above (inclusive), and 180-degree performance evaluation is conducted. The direct supervisor of related personnel selects 4-6 peers or managers that come in contact with each other in operations for the evaluation. 360 degrees Feedback from subordinates on the subject's managerial skills is referenced.	Supervisors first conduct a self-assessment, explain the indicators and their own views on major sustainability issues. The president will then conduct an initial performance evaluation on subordinates, and then submit it to the chairman for a second evaluation. In addition, quarterly cadre meetings and semi-annual offsite meetings are held to jointly set strategic goals and achieve two-way communication.	Using an employee-centered approach, employees first conduct a self-evaluation and explain their work and their own opinions. Afterwards, direct supervisors will evaluate the work performance of subordinates, and then provide employees with encouragement, suggestions for improvement, and help. A platform for two-way communication between supervisors and employees is provided, so that supervisors and subordinates can understand each other's thoughts and the direction for work adjustments in a timely manner.	The supervisor will evaluate each individual based on teamwork, cooperation, and learning ability.

## Youth Empowerment

- Expanding Memory Talent

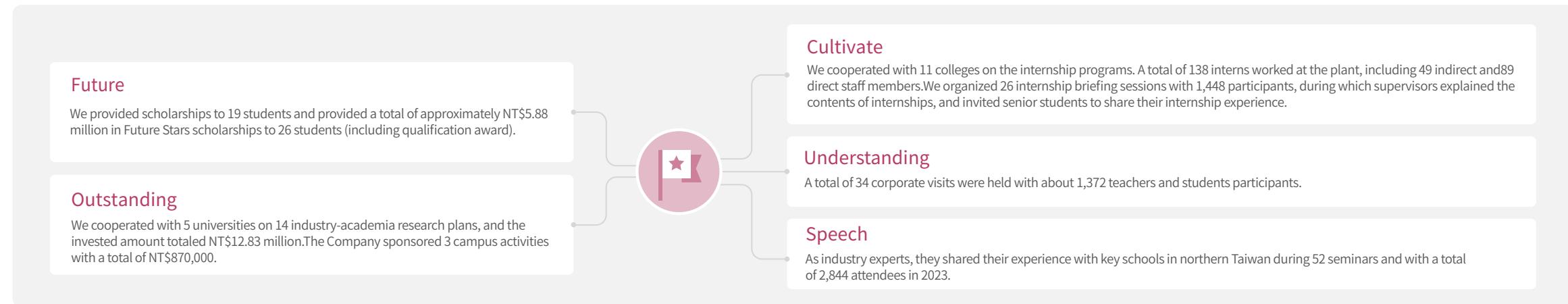
### Social issues we would like to resolve

With the power of academic research, we assist college students on campus to reduce the gap between the campus and workplace so that they may more quickly adapt to the workplace.

At the same time, we integrate the resources of industry and academia to jointly enhance the capabilities of Taiwan's technology industry.



## Major results in 2023



## Our footprints



**Cultivate**

- We cooperated with 11 colleges on the internship programs in 2023, and established a complete internship system to effectively enhance the employability of students; a total of 138 interns were recruited.
- We successfully retained 10 interns to continue working at their internship units as a full-time employees in 2023. Moreover, we matched 4 interns to other suitable departments based on their professional competence. Therefore, students could extend their internship experience, link it up with employment opportunities, show their professional competence, meet the professional needs of industry academia, and give them the correct values and improve their abilities in the workplace.

**Understanding**

- We invited teachers and students of colleges in northern Taiwan to visit our company and better understand Nanya, which will help them determine their future career path. Several of the visits were coordinated with the internship program and some students even found intern openings to utilize what they learned in school. The quality of visits to our company have improved and greatly benefited students who participated.
- We sponsored the Electronics Camp organized by the NTU System-on-Chip (SOC) Center and NTUEE Camp activities, which cultivates students for semiconductor research and development. Through group activities and an on-site plant visit, students gained an in-depth understanding of development trends in the semiconductor industry. Recruited students with superior engineering backgrounds across Taiwan.
- To inspire female students' interest in the field of semiconductors; A guided tour is planned for female high school students to guide students to understand the development context of the semiconductor industry. Outstanding female senior managers from Nanya also share their experiences at school and career journeys to encourage more young women to enter the semiconductor industry.



NTUEE Camp

**Speech**

- Seminars with industry experts are held in 9 colleges and offer practical skills in the workplace, jointly developing an industry course that meets workplace requirements. The seminars place equal emphasis on theory and practice, and the easy-to-understand lectures gave students new perspectives on semiconductors.
- Continue to work with Ming Chi University of Technology/Chang Gung University in organizing seminars on practices in the semiconductor industry, arrange for experienced semiconductor supervisors to serve as instructors and offer courses, link students' workplace abilities to discussions on practices, strengthen students' competitiveness in the workplace, and eliminate the gap between education and employment.
- The Industry Vanguard Project uses the education resources of schools and training of professional courses to help students obtain professional skills required by the industry, jointly leading students to enter the semiconductor industry and contribute what they have learned.



National Central University Memory Design Course

## 4.4 Safe Workplace

### Employee Care

- W.A.K.E - A Friendly Workplace with an Energized Workforce

In addition to providing salaries that are competitive for the industry, Nanya also promotes the Employee Assistance Program. It is combined with WAKE Up actions—a full range of employee benefit measures based on the themes of "wellness", "assistance", "kindness", "exercise". We hope to achieve the goal of creating a group of joyful technology talents through building a happy workplace.



Nanya's Happy Corporate Video



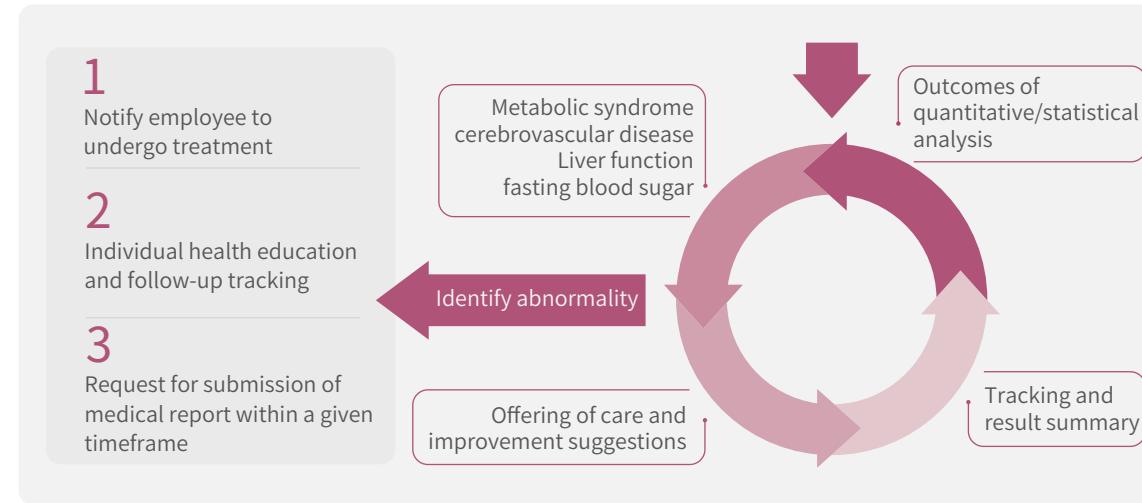
#### Wellness

The Company works with a medical team at Chang Gung Hospital to provide more frequent employee health examinations than required by law, such as: employees under the age of 30 receive a health check-up every five years, those over 30 and under 45 years old receive a health check-up every three years, those over 45 and under 65 years old receive a health check-up every two years, and those over 65 years old receive a health check-up every year. The health checkup also includes cancer screenings for α-Fetoprotein, carcinoembryonic antigen and oral cancer and waistline measurement. A health center is set up in fabs with nurses compliant with regulations, and doctors are also stationed in fabs. Employees who exhibit abnormal health conditions (such as liver function, blood sugar, metabolic syndrome, cerebrovascular disease etc) are identified based on the health check-up results, and the nurses and doctors provide them with healthcare information, suggestions and follow-up.



	Abnormal blood pressure	Abnormal liver function	Abnormal blood sugar level	Metabolic syndrome	Low risk	Moderate risk	High risk	Total employees checked for the year
2020	8.13%	6.42%	1.57%	17.10%	89.45%	8.06%	2.49%	1,526
2021	8.16%	8.09%	1.68%	15.33%	83.45%	13.50%	3.05%	1,311
2022	7.69%	5.07%	1.61%	16.23%	84.78%	14.29%	0.93%	1,184
2023	10.52%	5.48%	0.90%	16.90%	83.10%	15.85%	1.05%	1,334
Total								5,355

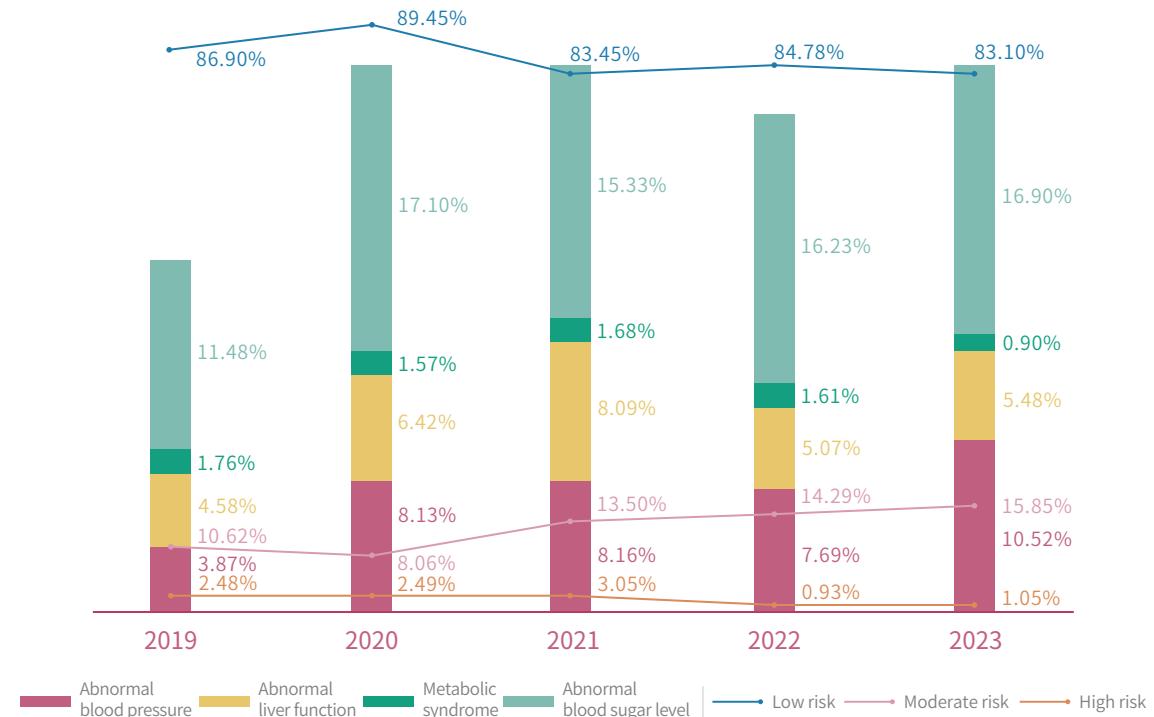
## Electronic tracking and management process



The health center provides employees with maternal health protection, injury and illness treatment, preventive healthcare, weight management, and smoking cessation consultation. As a member of the Formosa Plastics Group, the Company is supported by the medical resources of Chang Gung Memorial Hospitals, including medical center-grade treatment and healthcare services. Employees of the Company and dependents are subsidized when seeking treatment at Chang Gung Memorial Hospitals, and are entitled to discounts on health checkups and various deductibles not covered by National Health Insurance Scheme. Medical subsidies amounted to NT\$9,672,101 in 2023.

The Company started holding charitable weight loss competitions in 2019. Employees are encouraged to sign up individually or as a team of 5 people. For every 1,000 grams of weight lost by employees, the Company donates NT\$1,000 to charitable organizations. The competitions not only help employees with weight control, but also serve as a measure to donate funds to those in need. In 2023, a total of 508 employees participated, and their weight loss totaled 1,214.5 kg; there was a total of 2,179 participants over the past five years and weight loss totaled 5,420.7 kg.

## Employee medical check-up data over the years



### Note:

- Risk levels are determined by using health check data (age, cholesterol, high-density cholesterol, blood pressure, diabetes, smoking history) to estimate the risk of developing ischemic heart disease within ten years.
- A total of 1,334 people will undergo health check-ups in 2023, with a total cost of NT\$2,303,148.



## Assistance

To provide employees with a friendly and convenient work environment, the Company planned meals, accommodations, shuttle buses, and parking lots. The Company also has an Employee Welfare Committee available to arrange diverse benefits and activities for employees. The Employee Welfare Committee comprises 9 members, 1 of the members is appointed by the Company, 6 members are appointed by the labor union, and the remaining 2 members are elected by employees from different departments. The 10th Employee Welfare Committee was elected in 2023. Expenses on employee welfare was approximately NT\$27 million in 2023, and was mainly spent on festive gift certificates, birthday vouchers, children's scholarship, group insurance, entertainment, club activities, and childbirth and hospitalization subsidies. In 2023, a total of 5,176 people participated in various activities organized by the Employee Welfare Committee.

Furthermore, to meeting the commuting needs of employees during the fab expansion period, the Company built three parking lots for cars and one parking lot for scooters nearby, and planned shuttle buses to and from the parking lots in order to meet the needs of employees that work different shifts. The shuttle buses are frequent with average waiting time of less than 10 minutes, reducing the wait time and allowing employees to commute to work without any worries. The shuttle buses on average transport 1,500 people and above a day.

## Main Employee Benefit Measures



Staff canteens are set up to serve meals to employees.



Expenses for special dishes available for festive holidays and during Chinese New Year



Facilities such as convenience stores and coffee/fruit bars are set up to satisfy employee needs.



Offer single dormitories to single employees at favorable prices.



Shuttle bus services connected to car/motorcycle parking lots are made available to make commuting more convenient for employees.



After the pandemic subsided in 2023, Family Day was held in Leofoo Village and employees and their families participated enthusiastically.



Charging stations began use on 2023/11/14, with a total of 8 sets of slow charging stations, and 3 charging interface payment methods for employees to choose from according to their own needs.



The parking tower of Nanlin Technology Park was opened on 2023/04/10 with a total of 901 parking spaces for cars and 644 parking spaces for motorcycles.



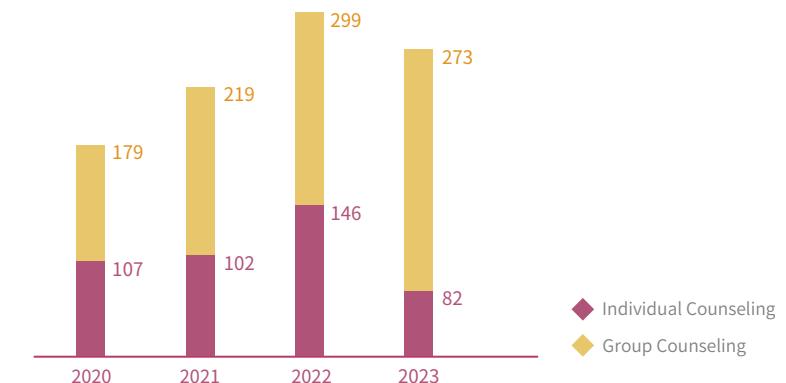
Plan shuttle buses to and from the parking lot to reduce inconvenience to employees during the expansion period



## Kindness

In order to help new recruits adapt to the new workplace as quickly as possible, a counselor is made available to offer regular assistance, counseling, and guidance services to new employees who have joined the Company for less than two years, those who have taken the initiative to ask for help, referrals from supervisors, and employees who have taken long sick leaves. The goal is to reduce employees' feeling of insecurity caused by being in a new environment, and help them integrate into the Company as quickly as possible. Furthermore, we brought in the professional counseling institution "Teacher Chang Foundation" in 2019 to accompany employees in using scientific methods to determine the underlying cause when they find themselves in a dilemma, so that they will face the difficulty and further search for a solution. Employees may use the services 6 times a month for an hour each time free of charge. The professional counseling institution "Teacher Chang Foundation" combined with dedicated counselors in the Company use systematic methods to prevent and help resolve employees' problems, stabilizing employees' work quality as well as physical and mental well-being. We learned from the opinions and feedback of employees that services of the Teacher Chang Foundation have been very helpful to employees in solving various problems faced by their families, childcare, and education.

## Consultation services for new employees to adapt to new workplaces



## Mental Health and Stress Relief Seminars

<b>3</b>	Mental Health Seminar were held
<b>146</b>	people participated
Satisfaction : <b>4.56</b>	

## Results of Teacher Chang Foundation's Counseling Service

Usage reached <b>97.2%</b>	Satisfaction with counseling: <b>4.89</b> (5-point scale)
Used <b>70</b> times. (Used 70 times) (A total of 72 events a year)	Solving problems: <b>8.7</b> (10-point scale)

### • Friendly environment for childbirth and raising children

For the convenience of female employees, the Company offers priority parking lots for pregnant employees and has nursery rooms in place to support gender equality in the workplace. The Health Center also conducts maternal health hazard evaluations for pregnant and breastfeeding women.

Nanya complies with the Occupational Safety and Health Act, and as an employer, it undertakes hazard evaluation, control and classification measures for work activities that are hazardous to maternal health. For female workers who are pregnant or have given birth less than a year ago, the Company adopts health protection measures and adjusts work details as recommended by physicians, and keeps relevant details on record. The Company disseminates health-related information and organizes women's health seminars on a regular basis. There are professional nurses stationed at plant sites to offer counsel on infant care for pregnant women. Nursery rooms fully equipped with lockers, refrigerators and water heaters have been deployed at all plant sites for the peace and comfort of all breastfeeding employees.

Nanya also has an unpaid parental leave system. Employees may apply for parental leave at their own will. This contributes to the stability of families and society by enabling employees to maintain a balance between work and family without worrying about child care issues. In 2023, a total of 317 employees (87 female and 230 male) were entitled to take unpaid parental leave, and a total of 29 people (16 female and 13 male) had actually applied. Furthermore, Nanya has signed contracts with numerous kindergartens to provide employee discounts on registration fees, monthly fees, transportation expenses, and free extended hours, lifting the burden of childcare on employees.

The Company established the Regulations for Childbirth Incentives to lift the burden on employees and encourage them to have children. Starting in July 2022, the Company provides a subsidy of NT\$20,000 for each newborn, and employees are also eligible to apply for a monthly allowance of NT\$2,000 until their child reaches the age of 6 years old. A total of NT\$14,280,000 was provided in subsidies to 625 employees in 2023.

Item	2021			2022			2023		
	Female	Male	Total shares	Female	Male	Total shares	Female	Male	Total shares
No. of employees entitled to unpaid parental leave	101	244	345	91	236	327	87	230	317
No. of employees applied for unpaid parental leave	19	5	24	23	9	32	16	13	29
No. of people due for reinstatement in the current year (A)	10	5	15	12	5	17	8	6	14
No. of people applied for reinstatement in the current year: (B)	7	3	10	9	5	14	7	3	10
No. of employees still on the job 12 months after reinstatement	5	2	7	5	3	8	9	5	14
Reinstatement rate % (B/A)	70.00%	60.00%	66.67%	75.00%	100.00%	82.35%	87.50%	50.00%	71.43%
Retention rate %	83.33%	100.00%	87.50%	71.43%	100.00%	80.00%	100.00%	100.00%	100.00%

#### Note:

1."No. of people due for reinstatement in the current year": does not include employees who applied to extend their unpaid leave during the year.

2."No. of people applied for reinstatement in the current year": includes employees who applied for reinstatement in the current year before the end of their leave.

3."Retention rate" refers to the percentage of employees reinstated from unpaid parental leave who continued to work for one year and above.



## Exercise

The Company organizes sport and entertainment activities from time to time to advocate work-life balance. By encouraging the creation of sport clubs and exercise space, we aim to promote sport habit and employees' physical as well as mental health.

### Complete gym/fitness center

**60,559** participants

Number of visits to the sports and recreation center in 2023

The multi-purpose sports and recreation center includes air track, basketball court, badminton court, pool table, table tennis, aerobics room, massage chair, and fitness equipment.

### Encouragement of sport activities

Nanya organizes a variety of events to promote sports for the mental-physical balance of employees. Besides encouraging sports clubs, such as jogging club, basketball club, table tennis club, badminton club, and softball club, we organized a series of "Sports Festival" activities in 2019. Departments and clubs submitted creative proposals to utilize sports venues and facilities for sports promotion, creative thinking, and creating a more lively atmosphere in the Company. In 2023, we invited our supplier Applied Materials (AMAT) to jointly organize an energy conservation and carbon reduction swimming competition, promoting fitness concepts together with public welfare; a total of 134 people participated in the event. In addition, we jointly supported the 2023 FIBA Basketball World Cup Preparation Games together with New Taipei City Government, making friends with the world through sports and supporting the development of basketball in Taiwan.



In 2023, we invited our supplier Applied Materials (AMAT) to jointly organize an energy conservation and carbon reduction swimming competition.

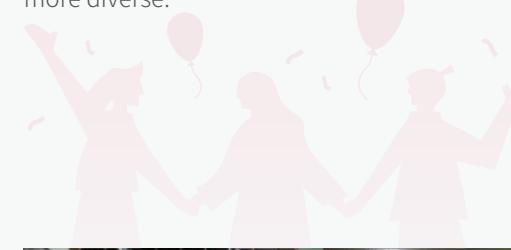


We jointly supported the 2023 FIBA Basketball World Cup Preparation Games together with New Taipei City Government.

### Diverse club activities

The Company has a total of 24 clubs with diverse themes, including parenting, jogging, basketball, table tennis, badminton, slow pitch, hiking, and board games. More than 1,980 employees participated in the above club activities in 2023. The Company added 1 club (popular music club) in 2023 as club activities continue to grow.

In addition to active sports clubs, there are also static board game clubs, and a popular music club was added in 2023, making clubs even more diverse.



## Occupational Health and Safety

All operating locations of Nanya have obtained ISO 45001 Management System certification and are committed to providing employees with a safe, healthy and high-quality workplace, while maintaining the safety of contractors. Nanya established the EHS Management Manual to provide a safe, healthy, and high-quality work environment to all workers at the Company, so that all workers of the Company have the ability to recognize hazards and prevent occupational accidents when engaging business activities, in hopes of achieving zero occupational injuries and zero occupational disease.

### Risk Assessment and Hazard Control

#### Step.1



##### Identification of hazards

Verify which hazards exist in the workplace, which adverse effects may accompany these hazards, and whether employees are exposed or may be impacted. The basis for determination includes workplace inspection records, safety data sheet, accident and disaster records, standard operating procedures, equipment manuals, and repair records, and then risk assessment is conducted on this basis.

#### Step.2



##### Assessment of hazards

Workers who are exposed or may be exposed to physical, chemical, human factors, biological and other hazards of each operation, as well as operations that are particularly hazardous to health: ionizing radiation, noise, arsenic, indium, mercury, and n-hexane (a total of 298 people received special health examinations this year, and 0 people were under level 4 management) to verify whether their exposure levels comply with regulations, and understand whether the control equipment or management measures meet the requirements.

#### Step.3



##### Control of hazards

Hazards are controlled from the paths and workers that are exposed to hazards. Safety procedures were established and a total of 19,119 hours of safety and health training was provided to 1,818 participants in 2023 (in which 988 participants received 16,644 hours of training for certifications required by law and supervisors of special hazard operations). Furthermore, 56 emergency response drills were organized to strengthen the on-site training and response ability of personnel, including medium and high risks such as chemical leakage, rescue of injured personnel, and evacuation during an earthquake or fire accident. In addition to training, the Safety and Health Division conducted monthly on-site SWAT (Safety Walk and Talk) at the workplace of various teams for 36 themes. The 40 suggestions for improving operational behavior safety were put forward for personnel to act accordingly to the contents of regulations. Improvements to the operational environment focus on safety and health improvements for medium and high risks in clean rooms. The medium and high-risk items that are identified are prioritized for improvement after assessing their feasibility. A total of 27 medium and high-risk improvement action plans were proposed in 2023 to continue to reduce potential risks.

### Description of Nanya's Medium and High Occupational Safety and Health Risks and Improvement Plan in 2023

Type of risk or hazard	Physical	Chemical	Human factors biological	Other hazards
Operations that are particularly hazardous to health	Ionizing radiation, noise	arsenic, indium, mercury, n-Hexane	-	-
Medium and high risk and improvement method	Description of general operating environment risks and improvement plan	Stair anti-slip and fall risk prevention improvement, safety cable installation and fall risk prevention, addition of convex mirror to prevent and improve collision risk, new service wagon purchase, and fall risk prevention improvements	Liquid (cooling water and chemicals) leakage risk prevention, chemical sampling pipeline splash risk prevention improvement	-
	Clean room risk description and improvement plan	Improvement of insufficient lighting risk in the working environment, improvement to prevent clamping risk of lifting vehicle, and improvement to prevent the risk of electric shock in the charging device of hydraulic lift	Prevention of liquid (cooling water and chemicals) leakage risk	-

## • Consultation and communication between safety and health organizations and workers

Nanya places great importance on occupational safety and health. Occupational safety and health committee meetings are held every month at a regularity higher than what is required by the law. Each meeting is directed by the executive vice president, while the process is participated by senior managers, department heads, and committee members. Labor representatives make up 41.7% of the committee members. They jointly review the achievement statuses of various safety and health management goals, accident investigations, and the performance of safety and health projects. To strengthen communication on health and safety issues, in addition to existing channels of the Company (e.g. opinion box on the homepage), each department has appointed dedicated personnel to collect inquiries from employees, matters requiring communication, and proposals through department meetings, SWAT, and the Safety &Environment Event Tracking System (SETS). The personnel directly contact, receive information from, respond to, and consult the Safety and Health Division, establishing smooth channels for safety and health management and communication. The safety and health department scheduled 38 internal audits in 2023, and issued a total of 24 CARs, including incomplete forms. The deficiencies were corrected within the prescribed time limit, and internal audits allowed for two-way communication.

## • Incident investigation procedures

When an incident is verified by central control after investigation (occupational accident, false alarm, incident that affects physical and mental health), the Safety and Health Division and the department that the accident occurred in will form an Incident Investigation Team to conduct a preliminary investigation and take corrective action. The Safety and Health Division strictly reviews corrective action taken for incident investigation. The department that the accident occurred in must conduct root cause analysis (RCA), including direct and indirect causes, and propose improvement and prevention measures to prevent the incident from occurring again before it may close the case. There was a total of 23 false alarms in 2023. The main improvement to false alarms this year was liquid leak alarm (11 cases, accounted for 78.3%), such as the prevention of valve leakage, and corresponding improvement and prevention measures were proposed.

Consultation and communication between the Occupational Safety and Health Committee and workers	Important Issues that the Occupational Safety and Health Committee Adopted Resolutions on in 2023
Occupational safety and health management affairs and safety and health performance	Compile an inventory of operations in slope areas and review the completeness of related operations
Safety and health self-inspections and audits	Comprehensive review of all gas source pipelines, valve status and personnel operating risks
Safety and health education and training plan and implementation	Ensure the validity of the certificates of operation supervisors and first aid personnel
Measures that must be taken for operating environment monitoring results	Complete trend analysis and classified management of exposure evaluation data
Occupational hazard and incident investigation reports	In response to incidents of employees injured from falling, departments gave safety reminders while walking around
Health management and health promotion affairs	Compile an inventory of high-temperature operations and management requirements in advance
Regulatory changes and response measures	Continue to carry out monthly regulatory identification to verify developments in occupational safety-related regulations

## Incident investigation procedures



## • Occupational injury management

In 2023, a total of 3 occupational accidents occurred to employees in the fab, all of which were physical injuries (falls, collisions). The frequency of employee disabling injuries (number of disabling injuries/million working hours) was 0.41, and the disabling injury severity rate (number of work days lost/million working hours) was 18. Zero disabling injuries has not yet been achieved in the fab. In order to achieve the goal of zero disabling injuries in the fab, after investigating, analyzing and reviewing the root cause of the incident, Nanya is committed to continuous improvement in two aspects:

1. For "unsafe behaviors", the Company supervises employees' unsafe behaviors through job safety analysis of high risk operations, strengthened safety and health training, and engaged in SWAT to raise employees' safety awareness and reducing potential operational hazards, such as job safety analysis for preventing collision when pushing heavy objects on slopes.

2. For "unsafe environment", the Company improves unsafe environments through inherently safer (IS) designs of machinery and equipment, ensuring perfect mechanical safety protection design, regular pipeline and machine maintenance and inspection, and preventive exposure monitoring of the hygiene environment. We implement on-site independent management, supervisors manage high-risk operations by walking around and implement the audit scoring mechanism, in order to achieve 5S improvement of on-site environment cleanliness and maintain the safety and hygiene of the working environment, such as setting up fall hazard prevention facilities on stairs, walkways, and in the environment.

### Contractor total work hours and occupational injury statistics

Year	2020	2021	2022	2023
Total work hours (hours)	404,054	339,387	562,977	409,371
Number of occupational injuries	0	1	0	1
No. of lost work days	0	7	0	8

## Statistical Data on Total Work Hours of Employees, Occupational Injuries, and Occupational Illness

Year	2020	2021	2022	2023	2024Target
Total work hours (hours)	6,778,840	6,872,456	7,073,064	7,174,192	-
Number of recordable occupational injuries (no. of people)	1	0	0	3	-
Rate of recordable occupational injuries (frequency of disabling injuries)	0.14	0	0	0.41	0.18
No. of serious occupational injuries (no. of people)	0	0	0	0	-
Rate of serious occupational injuries	0	0	0	0	-
Disabling injury severity rate	6	0	0	18	6.2
Frequency-severity indicator	0.03	0	0	0.09	-
No. of occupational illnesses certified by physician	0	0	0	0	0
Ratio of occupational illnesses certified by physician	0	0	0	0	-
Absentee rate	0.33%	0.31%	0.22%	0.32%	0.55%
Internal and external independent inspection rate	98.7%	99.3%	94.1%	95.2%	93.9%
Number of proposals engaging all employees for safety and health	644	980	1,050	1,215	1,440

Note 1: In 2023, no deaths caused by occupational injuries occurred in the Company. The rate of serious occupational injuries (excluding number of deaths and those who lost more than six months of work days) was calculated with every million work hours as a unit.

Note 2: Frequency of disabling injuries (FR) and disabling injury severity rate (SR) are based on occupational hazard data reported by the Company, and do not include contractors, traffic accidents to and from work, or minor injuries (that can be treated via first-aid on site).

Note 3: The calculation of absenteeism rate includes sick leave, personal leave, official leave, and a new target was set for 2024.

Note 4: Independent inspection rate = (Number of deficiencies independently improved by departments/Number of deficiencies proposed by the Safety and Health Division)\*100%

## • Contractor Safety Management

Contractor safety has always been an important safety and health management item of Nanya. We have also treated the personnel of contractors as our own employees, and show respect and gratitude to contractors for using their professional abilities, equipment, and technologies to assist Nanya in completing various projects. Besides monitoring quality and progress, we prioritize providing an excellent environment and management for projects to be smoothly and safely carried out. We provide guidance to contractors to conduct job safety analysis and engage in safe behavior, in order to achieve zero disasters and zero accidents.

Nanya has formulated complete contract management specifications in accordance with internal regulations of the Formosa Plastics Group as the basis for requirements on contractors. Every contractor that the Company partners with is required to sign a work contract and a work safety notice that outline the work environment, hazards, and relevant safety and health rules. Employees are encouraged to monitor contractors for unsafe conducts, and may report abnormal findings to team leaders, the Central Control Room, or work safety personnel for immediate tracking and improvement. All personnel of contractors must take the contractor pre-entry safety and health training course before entering our factory. The purpose of the course is to inform them of work environment hazards, regulations that require compliance, and to raise their safety awareness.

### Measures to Strengthen Contractors' Construction Safety

Selection of quality contractors	✓ Select contractors with quality technologies and safety management.
Contractor work safety review	✓ Review contractors' work safety (such as qualification of occupational safety and health personnel).
Pre-entry safety and health education and training	✓ Conduct regular classroom trainings every month.
Pre-construction safety notice:	✓ Fulfill the duty to notify of work environment hazards.
Pre-construction job safety analysis	✓ Conduct step-by-step analysis of hazards and preventive measures to achieve construction safety.
Construction permit application and restrictions for high-risk operations	✓ Application for permission is required for all construction; high-risk operations, including hot work and operations in confined spaces and high places, are regulated.
Daily toolbox meetings	✓ Daily toolbox safety meetings are required to notify of safety issues and keep records.
Contractor inspections before, during, and after constructions	✓ Require daily independent inspections on construction sites and operations (using the 5S method, for example).

### Pre-entry Safety and Health Training for Contractors and Training Completion Rate

<b>2020</b>	Coverage rate <b>100%</b>	Number of trainees 3,024
		Total man-hours of training 142,128
<b>2021</b>	Coverage rate <b>100%</b>	Number of trainees 1,753
		Total man-hours of training 50,837
<b>2022</b>	Coverage rate <b>100%</b>	Number of trainees 2,829
		Total man-hours of training 169,740
<b>2023</b>	Coverage rate <b>100%</b>	Number of trainees 2,292
		Total man-hours of training 112,308

# 5 Green

## A Practitioner of Green Technology

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Nanya Technology Corporation implements the strategy of "creating shared value." We continue to review of the environmental impacts that may occur during our operations, and focus on issues such as nature, climate, energy, resources, pollution emissions, and recycling. We provide consumers with more efficient and lower carbon products through product design from the source to advanced technology development, adopting standards that are better than regulations and follow international sustainability frameworks, so as to avoid or reduce the risk of impacts. We also established sustainability performance indicators to check and ensure that we fulfill the responsibility of cleaner production.

Better than the SBT annual reduction target  
Scope 1 & 2 reduction of 8.4%  
Scope 3 reduction of 20.4%

Target value: Reduce Scope 1+2 GHG emissions in 2023 by 7.5% compared to 2020, and Scope 3 GHG emissions in 2023 by 7.9% compared to 2020.  
Actual value: In 2023, Scope 1+2 GHG emissions was reduced by 8.4%, and Scope 3 GHG emissions was reduced by 20.4%.

Renewable energy target increased seven fold

68,565 MWh

Nanya aims to use 25% renewable energy in 2030, a seven-fold increase compared to the 3.2% in 2023, and better than the three-fold goal set in the Global Renewables and Energy Efficiency Pledge of COP 28.

Cumulative energy saved with energy conservation measures from 2017 to 2023



# Strategy and Performance of Material Topics

Issue / Strategy	2023 Goals	Performance and Goal Achievement	2024 Goals
<b>Greenhouse Gas Management</b>  SBTs Reduce Scope 1+2 GHG emissions in 2030 by 25% compared to 2020, and Scope 3 GHG emissions in 2030 by 27% compared to 2020. <b>Energy conservation and carbon emissions reduction</b> Set short, medium, and long-term goals and actively implement related management measures. <b>Low-carbon manufacturing</b> Commit to improvement in production technologies and reduce greenhouse gas emissions in the production process.	<p>Scope 1+2 GHG emissions in 2023 was reduced by 7.5% compared to 2020</p> <p>Scope 3 GHG emissions per unit product in 2023 was reduced by 8.1 % compared to 2020</p> <p>Reduction rate of PFCs emissions during process reaches a minimum of 93%</p> <p>Number of days production was suspended due to climate change disasters maintained at 0 days</p>	<p>Decreased 8.4 %</p> <p>Decreased 20.4%</p> <p>Reduction rate reach 93%</p> <p>Maintained at 0 days</p>	<p>Scope 1+2 GHG emissions in 2024 was reduced by 10.0% compared to 2020</p> <p>Scope 3 GHG emissions per unit product in 2024 was reduced by 10.8% compared to 2020</p> <p>Reduction rate of Fluorinated Greenhouse Gases (F-gases) emissions from processes reaches a minimum of 93%</p> <p>Number of days production was suspended due to climate change disasters maintained at 0 days</p>
<b>Energy Management</b>  Implementation of energy conservation measures Implement ISO 50001 Energy Management System for systematic management and improve the efficiency of energy usage. <b>Innovative applications</b> Use external exchanges or training to obtain the latest energy conservation technology or energy-saving methodology.	<p>Cumulative energy saved with energy conservation measures from 2017 to 2023 reached 67,500 MWh (<math>2.43 \times 10^8</math> MJ).</p> <p>Annual renewable energy use reached 25,000 MWh (<math>9 \times 10^7</math> MJ)</p>	<p>68,565 MWh (<math>2.47 \times 10^8</math> MJ)</p> <p>Note1 24,490 MWh (<math>8.8 \times 10^7</math> MJ)</p>	<p>Cumulative energy saved with energy conservation measures from 2017 to 2024 reached 72,500 MWh (<math>2.61 \times 10^8</math> MJ)</p> <p>Annual renewable energy use reached 25,000 MWh (<math>9 \times 10^7</math> MJ)</p>
<b>Water Management</b>  Response to risks Establish backup water sources and water storage tanks and use emergency response organization between company plants to coordinate water usage. <b>Wastewater recycling and reuse</b> Establish wastewater collection processing and adopt different multiple recovery and reuse to improve the water recycling rate. <b>Water usage reduction</b> Conserve water through daily management.	<p>Accumulated water consumption per unit production capacity decreased 38.5% compared to 2017</p> <p>Production losses caused by restricted water supply: 0 wafer (slice)</p> <p>-</p>	<p>Note2 37.5%</p> <p>0 wafer (slice)</p> <p>-</p>	<p>Accumulated water consumption per unit production capacity decreased 38.5% compared to 2017</p> <p>Production losses caused by restricted water supply: 0 wafer (slice)</p> <p>The average percentage of main indicators of water pollution is more than 50% better than the regulatory standards (new this year)</p>
<b>Waste and Pollution Prevention</b>  Circular economy Increase waste recycling and reuse rate to use resources effectively. <b>Source reduction</b> Continue to promote waste reduction and increase waste recycling rate.	<p>0 cases in violation of environmental laws and regulations</p> <p>Rate of auditing and coaching waste disposal contractors on-site &gt; 90%</p>	<p>0 cases</p> <p>98%</p>	<p>0 cases in violation of environmental laws and regulations</p> <p>Rate of auditing and coaching waste disposal contractors on-site &gt; 98%</p>

◆ Exceed   ◇ Achieved   ◆ Partially Achieved

Note 1:The power generation of the outsourced solar photovoltaic project site was lower than expected during the winter, and renewable energy use fell short of the target by 2%.  
Note 2:Product production capacity in 2023 was approximately 8% lower compared to 2022, resulting in water consumption per unit capacity not reaching the target.

Note 3:The average annual process water recycling rate was deleted because it reached the original target ahead of schedule.  
Note 4:Product production capacity in 2023 was approximately 8% lower compared to 2022, resulting in the reduction of VOC emissions per die not reaching the target.

# 5.1 Nature and Climate Management

Nanya's production location is in Nanlin Science Park in Taishan District. Nanya has published a TCFD Report according to the Task Force on Climate-related Financial Disclosures Recommendation for 2 consecutive years since 2022. Many scientific studies have pointed out that the Earth's ecosystem has been changed due to human actions, such as climate change and loss of biodiversity caused by global warming. Therefore, we began to face the value chain's nature-related dependencies and the scope of risk impacts. Nanya became an early adopter of the TNFD in 2023, and actively established complete LEAP mechanisms to assess the nature and climate-related dependencies and risks of its own business locations, upstream supply chain, and downstream customers, and formulated corresponding strategies and actions, in hopes of reducing the impact of risks.

Nanya identifies material nature and climate-related issues through interviews with executives and employees responsible for relevant issues, and controls them by improving the corporate governance structure. Nanya implements nature and climate management through two-way interaction between the board of directors and management. This chapter focuses on "Climate Change Issues". For complete nature and climate-related contents, please refer to the first "["Nature and Climate-related Financial-related Disclosures Report"](#) released in 2024.

## Adaptation

We developed strategies and actions in response to nature and climate-related issues on the aspects of governance, strategy, risk management, and metrics and targets according to the disclosure recommendations, in hopes of reducing the impact of dependencies and risks. Actions in 2023 are described below:

**Governance**

- ◆ In terms of governance level, nature and climate is listed as an issue for the board of directors. The Sustainable Development Committee is a functional committee established to implement measures and manage nature and climate-related issues.
- ◆ Management periodically participates in quarterly sustainable development and risk management meetings to examine the Company's implementation results and decide on work items. The Sustainability and Risk Management Division under the President's Office is the dedicated unit for cross-departmental horizontal integration and management.
- ◆ Enhance the climate governance ability of the board of directors and management, and raise the awareness of all employees of climate change.

**2023 Operation status**

- ◆ A total of 5 board meetings and 2 Sustainable Development Committee meetings were convened in 2023, and topics included sustainability reports, purchase of renewable energy, TCFD reports, greenhouse gases, biodiversity, and sustainability evaluation performance.
- ◆ A total of 8 sustainable development quarterly meetings and risk management quarterly meetings were held in 2023. The topics include responses to nature and climate-related issues, such as evaluating the purchase of an additional 25 million kWh of renewable energy, introducing TNFD methodology, formulating a biodiversity policy, and GHG inventory and tracking. The Risk Management Steering Center assesses material risks related to nature and climate each year; 168 risks were managed and evaluated in 2023.
- ◆ Directors received a total of 82 hours of continuing education in 2023. Courses included economics, corporate governance, risk management, sustainable development, climate change, carbon credit trading and carbon management, and compliance. ESG issues are incorporated into the Company's manager training, and new employees are required to receive training in ESG and climate change.



Strategy

**◆ Resilient adaptation**

1. Biosensitivity analysis of business locations
2. Identify the dependence and impact of operations on nature and climate
3. Review nature and climate management by the value chain

**◆ Transition for mitigation**

The impact on nature and climate is effectively reduced through the R&D of low-carbon products, green technology production, sustainable supply chain management, and development in harmony with nature.

**◆ Stakeholder engagement**

1. Collect and compile opinions of external stakeholders through different platforms.
2. Organize nature and climate-related activities and communicate Nanya's sustainability concepts to relevant stakeholders.

**2023 Operation status****◆ Resilient adaptation**

1. We analyze whether Nanya's business locations (within two kilometers) touch biosensitive areas through the geographical information system and government open data.
2. Collect nature and climate-related issues of concern to stakeholders, and discuss short-, medium-, and long-term risks and opportunities during cross-departmental workshops. A total of 14 highly dependent factors and 9 major impact factors were identified.
3. Simulate the impact of nature and climate risk scenarios on the Company's operations, strategies, and financial planning, (1) Transition scenario: NDC, pathway to net zero (APS, NZE); (2) Physical scenario: AR5 RCP2.6, 4.5, 6.0, and 8.5.
4. A total of 50 questionnaires were distributed to key suppliers. The analysis results showed that 2 dependencies involved high risk and high exposure, and 5 factors were issues of high concern to suppliers.

**◆ Transition for mitigation**

1. Considering the risks and opportunities in different climate change and physical scenarios, as well as the operational characteristics of Nanya, we formulated the strategies of developing green products, implementing cleaner production, strengthening adaptation ability, and working with sustainability partners.
2. Nanya periodically engages in ecological monitoring and ecological restoration, and strives to avoid damage to key local areas as it continues to expand its operations. In the future, Nanya will continue to engage in ecological restoration for environmental compensation.

**◆ Stakeholder engagement**

1. Nanya actively participates in industry associations, co-organizes nature and climate-related initiatives, and shares its practical experience.
2. We cooperate with local organizations to jointly organize community environmental education, environmental welfare, and cultural preservation activities build closer relationships with local communities. Starting in 2023, we actively discuss possible environmental compensation methods, and will protect and restore natural habitats near the fab, jointly creating a better community environment.



## Risk Management

- ◆ According to the Company's operational risk management procedures, we assessed the significance of related risks and opportunities brought by different scenarios of nature and climate change, and formulated relevant response measures, which were included in Enterprise Risk Management (ERM) and periodically confirmed by senior managers. Formulated a complete emergency response plan for nature and climate-related risks
- ◆ The scopes 1/2/3 of greenhouse gas inventory and verification are conducted annually to confirm sources of greenhouse gases for key project management.
- ◆ Compile product life cycle inventory and improve hot spots.
- ◆ **Emission risks**  
**Scope 1:**The development of new technologies for control equipment is not verified, which may result in a decrease in the removal rate of fluorine-containing gases in the process. As a result, air pollution control and emission standard controls in the semiconductor manufacturing industry have increased VOCs processing costs.  
**Scope 2:**The increase in electricity demand will increase the proportion of renewable energy use and increase carbon fees, resulting in an increase in operating costs.  
**Scope 3:**The main source of emissions is from products and services purchased upstream in the value chain, which will incur supplier management costs.



## Metrics and Targets

- ◆ **Mitigation goals:**1. Compile and verify Scope 1/2/3 GHG emissions every year.2. Set greenhouse gas management goals and energy and resource recycling and reuse goals.3. SBT reduction target: Reduce Scope 1+2 GHG emissions in 2030 by 25% compared to 2020, and Scope 3 GHG emissions in 2030 by 27% compared to 2020.
- ◆ **Adaptation goals:**1. Strengthen the Company's drought resistance and increase the water recycling rate.2. Carry out green factory certification.3. Participate in the international Carbon Disclosure Project (CDP) and water safety project, disclose related information, and communicate with stakeholders.

## 2023 Operation status

- ◆ The major risks identified are mainly transition risks, such as changes in the national power structure, customer demand for low-carbon products, and the impact of fulfilling SBT commitments. The three medium-term financial impacts on the Company are estimated to account for approximately 3-4% of annual revenue.
- ◆ The main opportunities identified are product technology and new market development: Due to the trend of net zero emissions, smart clean energy technologies will drive growth in demand on DRAM. According to the scenario analysis by the IEA, the clean energy technology market will triple in size by 2030, and the Company will seize this opportunity to continue investing in innovative R&D (reached 25.4% of revenue in 2023).
- ◆ For water resource risk, short-term water stress was assessed using WRI Aqueduct Tool as medium to low risk (10-20%). Long-term stress to 2050 is also low to medium risk (10-20%), meaning that it is a non-water stress area. According to the climate change water resource hazard map of the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), there is no risk of water shortage in scenario RCP 8.5 in the middle of the century (Y2036-Y2065). Water conservation charge will be levied in 2023. Nanya has worked hard in recent years to implement water conservation and water recycling measures and achieved the government's lowest levy rate. The annual increase in water charges is only about 3%, which has a low impact on operating costs.
- ◆ Verification of GHG emissions in 2023 will be completed in May 2024. Completed the inventory of the carbon footprint of all products and implemented management plans to improve the three hot spots of carbon footprint in the 2023 inventory.

## Mitigation indicators

1. Completed the inventory and verification of Scope 1/2/3 GHG emissions in 2023.
2. The Company's GHG emissions in 2023 was 430 thousand tons, and emissions per unit product was 430 kg/thousand die, down 29% compared to 2017.
3. Completed 35 raw material consumption improvement proposals in 2023.
4. A total of NT\$14.67 million was invested and 36 energy conservation plans were completed in 2023, saving an estimated 5,337 MWh, reducing carbon emissions by 2,642 tons CO<sub>2</sub>e, and saving NT\$16 million in electricity fees.
5. For the renewable energy strategy, 24.49 million kWh of renewable energy was used in 2023, accounting for 3.2% of total electricity consumption. The purchase of an additional 25 million kWh of renewable energy or offshore wind power will be evaluated in 2024, and is expected to reduce carbon emissions by 12,400 tons.
6. Implementation status of SBTs in 2023: Category 1+2 reduced by 8.4%; Scope 3 reduced by 20.4%.

## Adaptation indicators

1. The total volume of water recycled and reused in 2023 was 5,832 thousand cubic meters.
2. Passed AWS (International Water Resources Management Standard) verification in 2023.
3. The green factory certificate of Fab 3A was renewed in 2023.
4. Rated in the CDP's A List for climate change and water security in 2023.

## Mitigation

The main sources of greenhouse gas emissions from semiconductor fabrication plants are electricity and perfluorocarbons (PFCs). Among them, electricity is essential for operation and production, enabling all machinery and equipment at plants to normally operate. PFCs are perfluorocarbons and other compounds of the same kind used in production process, categorized into the greenhouse gases with high global warming potential.

- **Greenhouse Gas Inventory**

The Company referenced ISO 14064-1 and requirements set forth by the Ministry of Environment, Executive Yuan in the Climate Change Response Act, Greenhouse Gas Inventory Registration and Management Regulations, Greenhouse Gas Emission Verification Guidelines<sup>Note1</sup>, and WBCSD/WRI Greenhouse Gas Protocol, and sets the boundaries of the organization at 100% control of operations. At present, verification of Scope 1, Scope 2, and Scope 3 emissions is carried out by a third party verification institution according to international standards.

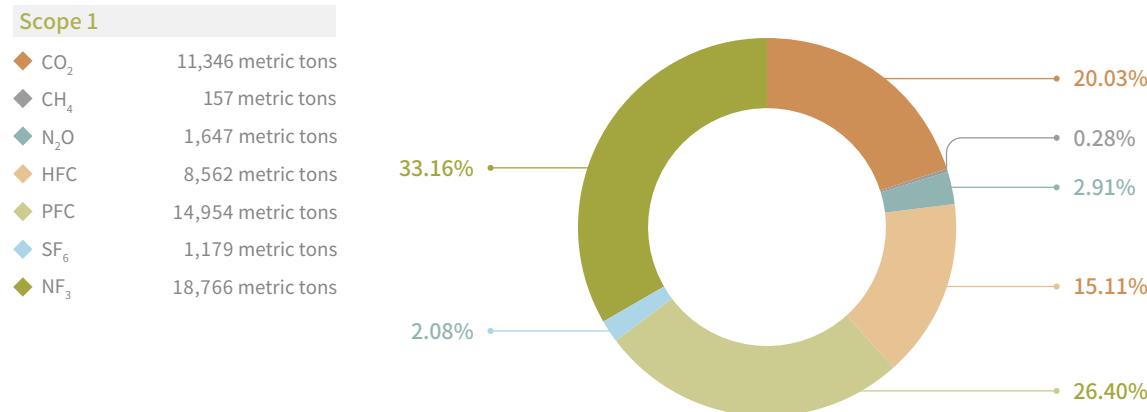
The scope of inventory of Nanya covers all production locations in Taiwan. The main sources of GHG emissions were purchased electricity and steam (accounting for about 86.83%) and process emissions (accounting for about 9.09%). GHG emissions in 2023 totaled 430,324 metric tons CO<sub>2</sub>e. Scope 1 emissions totaled 56,654 metric tons CO<sub>2</sub>e, and there was no GHG emissions from biomass fuel; Scope 2 emissions totaled 373,670 metric tons CO<sub>2</sub>e. The data above does not include emissions of subsidiaries. Subsidiaries have compiling their inventory in 2022, and the inventory will be formally disclosed after verification in 2024.

GHG emission factors were based on the GHG emission factory management table declared on the national registration platform of Taiwan's Ministry of Environment, the IPCC 2006, emission factors released by Taiwan's Energy Administration, Ministry of Economic Affairs, and emission factors made public by the company-owned steam plant of Nan Ya Plastics Corporation's utility plant. The GWP value is cited from the IPCC AR5. Compared with the base year of 2017, the greenhouse gas emissions in 2023 increased by approximately 14%, and the number of chips produced decreased by approximately 5%. In terms of emissions per unit wafer, emission intensity in 2023<sup>Note2</sup> is 0.9 kg CO<sub>2</sub>e/wafer area (cm<sup>2</sup>), which is slightly higher than the emission intensity in 2021. However, judging from the emission intensity per unit wafer, GHG emissions per unit capacity in 2023 (430 kg CO<sub>2</sub>e/thousand die) decreased by 29% compared with the baseline year of 2017.

Percentage accounted for by Scope 1 and Scope 2 emissions in 2023

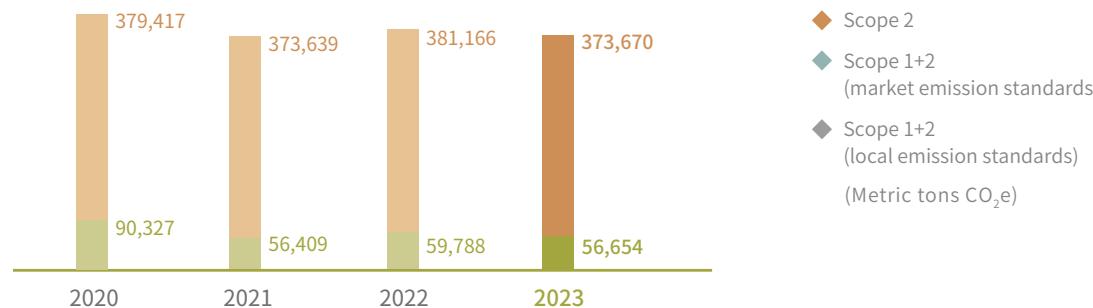


Percentage accounted for by Scope 1 GHG emissions in 2023



Note 1: The Company referenced 2024 version of Greenhouse Gas Emission Verification Guidelines.  
Note 2: Emission intensity: the amount of greenhouse gas emitted from per unit wafer area output.

## Scope 1+2 emissions



- ◆ Scope 1
  - ◆ Scope 2
  - ◆ Scope 1+2 (market emission standards)
  - ◆ Scope 1+2 (local emission standards)
- (Metric tons CO<sub>2</sub>e)

469,744 430,048 440,954 430,324 ————— market emission standards

469,744 431,353 444,965 442,354 ————— local emission standards

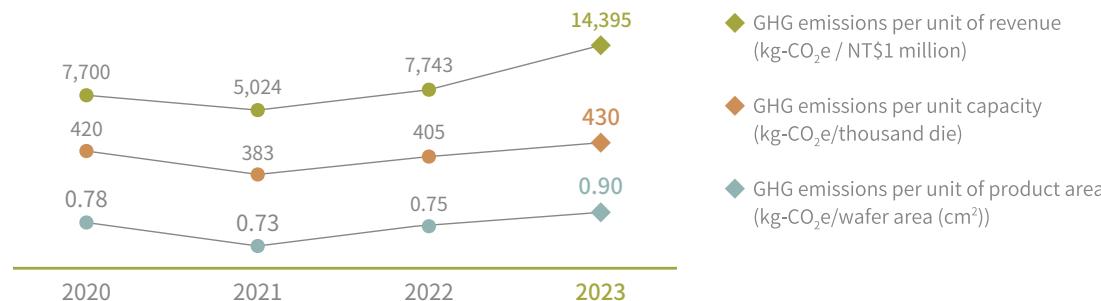
Note 1: PFCs emissions totaled 9 types of process gases, including carbon tetrafluoride (CF<sub>4</sub>), perfluoropropane (C<sub>2</sub>F<sub>6</sub>), hexafluorobutadiene (C<sub>4</sub>F<sub>8</sub>), tetrafluorocyclobutane (C<sub>4</sub>F<sub>8</sub>), trifluoromethane (CHF<sub>3</sub>), difluoromethane (CH<sub>2</sub>F<sub>2</sub>), monofluoromethane (CH<sub>3</sub>F), sulphur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>).

Note 2: Other direct emissions included CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O of process gas, HFCs, and SF<sub>6</sub> of non-process gas, such as fire extinguishing equipment, refrigerators, freezers, and high-voltage power panels.

Note 3: Indirect energy emissions include electricity and steam use, in which the carbon emission factor of electricity is 0.494 kg CO<sub>2</sub>e/kWh announced by The Energy Administration, MOEA on April 26, 2024.

Note 4: Starting in 2021, we installed N<sub>2</sub>O reduction equipment in the film process, so Scope 1 emissions decreased.

## Table heading: GHG emission intensity<sup>Note 1</sup>



- ◆ GHG emissions per unit of revenue (kg-CO<sub>2</sub>e / NT\$1 million)
- ◆ GHG emissions per unit capacity (kg-CO<sub>2</sub>e/thousand die)
- ◆ GHG emissions per unit of product area (kg-CO<sub>2</sub>e/wafer area (cm<sup>2</sup>))

Note 1: GHG emissions in this table includes Scope 1 and Scope 2.

Note 2: The calculation of production capacity was the output of Good Electronic Chip (GEC), and the output of various products was converted into around 4Gb product particle numbers, using per thousand die (k-pcs) as the calculation unit.

To improve the integrity of greenhouse gas (GHG) inventory in our value chain, we have conducted scope 3 inventory in accordance with the Greenhouse Gas Protocol, and have met the ISO 14064-1 standards. The emissions of 7 items in Scope 3 GHG emissions passed verification in 2023. Among all emission categories, the use of sold products generated the most GHG emissions, followed by purchased goods and services, and third is emissions generated by the processing of sold products.

## Scope 3 Emissions

Scope 3	Source of calculation	Scope 3 (ton-CO <sub>2</sub> e)
★ Purchased goods and services	Carbon emissions from the main material purchased and auxiliary materials in the process	100,956
★ Fuel- and energy-related activities	Carbon emissions from the ton-km for transporting fuel used in the factory and energy transported to the factory	82,395
★ Upstream transportation and distribution	Carbon emissions from the ton-km for transporting main materials and auxiliary materials purchased from suppliers to the fab and packaging plant	1,946
Downstream transportation and distribution	Carbon emissions from the ton-km for transporting products from the plant to customers	2,375
Emissions from processing sold products	Carbon emissions according to capacity allocated in the packaging and testing section	107,112
★ Employee commuting	Carbon emissions from company cars and commuting	2,068
★ Business travel	Carbon emissions from employees traveling overseas on business trips	50
★ Waste generated by operations	Carbon emissions from waste generated in the production process, including waste transport and disposal.	1,206
★ Use of sold products	Carbon emissions from electricity consumption of products used by customers	487,767
Assets and equipment	Investments in equipment and property	31,003
<b>Total</b>		<b>816,878</b>

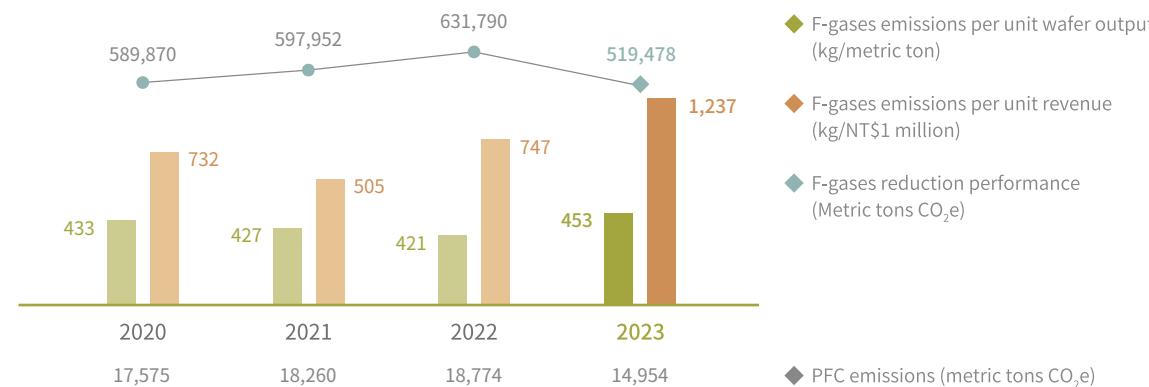
Note 1: ★The items in Scope 3 GHG emissions passed verification in 2023.

Note2: Source of main emission factors in Scope 3: The SimaPro9.4.0.2 database is reference for products and services purchased; the carbon footprint platform is referenced for fuel and energy related activities, upstream and downstream transportation and distribution, employee commuting, waste generated by operations, and use of sold products; the ICAO carbon emissions calculator is referenced for business trips; GHG emissions is distributed based on investment percentage in investee companies for investments.

## • Greenhouse Gas Reduction

We have actively promoted voluntary reductions and participated in the annual voluntary reduction promotion plan of industrial greenhouse gases implemented by the Industrial Development Administration, MOEA. As Fluorinated Greenhouse Gases (F-gases) have high global warming potential<sup>Note 1</sup>, Nanya has implemented GHG reduction plans starting in 2006. When planning to build fabrication plants, we have purchased Local Scrubber with high reduction rate. Currently, the PFCs Local Scrubber<sup>Note 2</sup> used in the thin film and etching processes is Burn Type, destroying PFCs through the high temperature generated by combustion. To reduce PFCs emissions, we established PFCs reduction acceptance standards for local scrubber, in which CF<sub>4</sub> treatment efficiency must reach 90% and above, the reduction rate of C<sub>3</sub>F<sub>8</sub>, C<sub>4</sub>F<sub>6</sub>, C<sub>4</sub>F<sub>8</sub>, CHF<sub>3</sub>, CH<sub>2</sub>F<sub>2</sub>, and SF<sub>6</sub> must reach 95% and above, and the reduction rate of NF<sub>3</sub> must reach 99% and above. After the local scrubber is installed, FTIR<sup>Note 3</sup> is used to test PFC reduction rate, in order to meet future reduction trends.

### PFC emission trends



Through purchasing Local Scrubber with high PFC reduction rate when planning to build fabrication plants, and promoting programs on reducing the use of PFC in process, we aimed to reach a reduction rate of at least 90%. From 2020 to 2023, the reduction rates of PFC gases used in process all reached a minimum of 93%, reducing a total of 2,339,090 metric tons CO<sub>2</sub>e emissions in these four years, equivalent to 6,052 times carbon absorption of Daan Forest Park for one year. (Note: According to the Ministry of Economic Affairs Energy Administration's website: Using CO<sub>2</sub> absorption of Daan Forest Park at 386.5 tons per year for calculation)

Note 1: Global Warming Potential (GWP) is the warming intensity of the gases relative to carbon dioxide (set the CO<sub>2</sub>'s GWP = 1); The high global warming potential referred in this article are the gases with a GWP value higher than 675. (Based on the GWP values of the IPCC Fourth Assessment Report (FAR))

Note 2: Local Scrubber: local exhaust processor. Note 3: FTIR: Fourier-Transform Infrared Spectrometer

## • Carbon Disclosure Project

Upholding the principle of transparent disclosure, we have participated in the evaluation of the Carbon Disclosure Project (CDP), a non-profit organization, since 2009, disclosing related information regarding greenhouse gas emissions and reductions every year. We rated at the leadership level in climate change between 2018 and 2023. In addition to disclosures of information on carbon emissions in the CDP and this report, Nanya also actively discloses information on GHG emissions and reduction in the GHG report system of the Responsible Business Alliance (RBA), or provides information on carbon emissions of products to help customers establish the basis for calculating product footprint.

## • Internal carbon pricing

In response to climate change and the global trend of net-zero carbon emissions, Taiwan's government announced in 2022 that it will achieve the goal of net-zero emissions by 2050, and thus implemented the "Climate Change Response Act" in 2023, which is the legal basis for imposing carbon fees on emission sources. To become aligned with international trends and Taiwan's regulations, the Company implemented an internal carbon pricing mechanism in 2022, the carbon emission cost of the Company's internal carbon pricing is calculated at NT\$100 per metric ton of carbon emissions. We include carbon costs in the internal management income statement as the basis for implementing carbon risk management, in hopes of raising awareness of carbon reduction among all employees to achieve energy conservation and carbon reduction.

The Company's carbon emissions in 2023 was 430,324 metric tons, and the carbon emission cost according to internal carbon pricing was NT\$43,032,412.

# 5.2 Energy and Resource Management

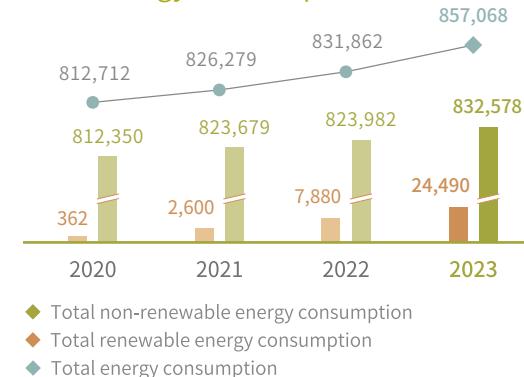
## Energy Management

### • Energy Structure

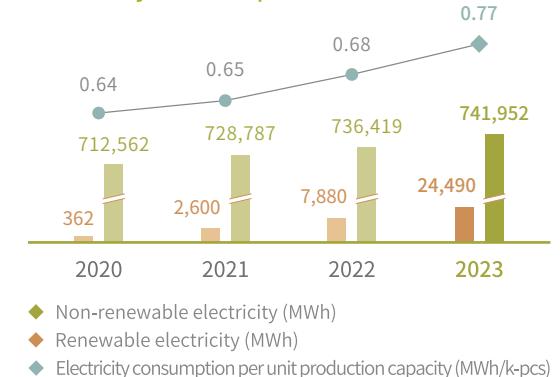
Service life and environmental impacts of fossil energy have been the most important issues so efficient management is urgent. Purchased electricity, steam, and natural gas are the main energy sources that Nanya uses; the Company does not use internal energy. Externally, other indirect energy consumption that generates greenhouse gas emissions includes raw materials transportation, production of raw materials suppliers, waste transportation/disposal, employee travel, and employee commuting. Nanya mainly used purchased electricity (accounted for 89.4% of the Company's energy consumption), natural gas (accounted for 6.4% of the Company's energy consumption), and steam (accounted for 4.2% of the Company's energy consumption) in 2023. The Company also used diesel, but it accounted for less than 0.02%, so it was not included in statistics of energy consumption indicators. The Company began purchasing renewable energy in 2020, and purchased renewable energy (electricity) in 2023 accounted for 2.9% of the Company's energy consumption. Nanya's production capacity<sup>Note 5</sup> in 2023 decreased 8% compared to 2022. The continued adoption of advanced processes led to an increase in energy consumption. Hence, Nanya's total energy consumption (electricity + natural gas + steam) reached 857,068 MWh ( $3.09 \times 10^9$  MJ) in 2023, an increase of 3% compared to 2022, in which electricity consumption (including renewable and non-renewable) was 766,442 MWh ( $2.76 \times 10^9$  MJ<sup>Note 2</sup>), natural gas consumption was 54,711 MWh<sup>Note 3</sup> ( $1.97 \times 10^8$  MJ, 5,228,039 m<sup>3</sup>), and steam consumption was 35,915 MWh<sup>Note 4</sup> ( $1.293 \times 10^8$  MJ, 47,482 metric tons). In terms of energy use intensity, the total energy consumption per unit capacity in 2023 was 0.86 MWh/k-pcs, an increase of 12.1% compared to 2022.

Regarding energy consumption management, Nanya has formulated the "Energy Review Management Procedure" to effectively manage the Company's energy use and consumption. Nanya uses the procedure to evaluate the status of various energy use and consumption, and identify its major energy uses, which are controlled with improvement goals set to achieve energy saving benefits. First, an energy use review list is prepared to compile statistics of equipment units and energy consumption, define major energy-consuming equipment, establish energy baseline data, and formulate appropriate performance indicators to achieve specific goals of energy conservation. Furthermore, energy reviews are conducted during regular monthly meetings, and priorities are set after considering improvement cost, energy saving potential, service life, regulatory requirements, and difficulty of improvement. Energy-saving plans are implemented based on the planning results. Implementation results reports and future goal planning are reviewed and approved at the annual senior management review meeting.

Total energy consumption



Electricity consumption from 2020 to 2023



2020 to 2023 natural gas consumed

	2020	2021	2022	2023
Natural gas consumption (Cubic meter)	4,494,478	4,682,857	4,780,740	5,228,039
Natural gas consumption (MWh)	46,743	48,702	50,030	54,711
Natural gas consumption per unit production capacity (cubic meters/k-pcs)	4.0	4.2	4.4	5.2

2020 to 2023 natural gas consumed

	2020	2021	2022	2023
Steam consumption (metric ton)	70,129	61,066	49,620	47,482
Steam consumption (MWh)	53,045	46,190	37,532	35,915
Steam consumption per unit capacity (Metric tons/k-pcs)	0.063	0.054	0.046	0.047

Note 1 : Electricity CO<sub>2</sub>e emission is based on the electricity carbon emission factor = 0.495 kgCO<sub>2</sub>e/kWh, published in 2022 by the Energy Administration, Ministry of Economic Affairs

Note 2 : Based on the Energy Product Unit Heating Value Table updated in 2020 by the Energy Administration for unit conversion, 1 kWh = 860 kcal = 3.6 megajoules; 1 MWh = 3,600 megajoules.

Note 3 : 1 cubic meter of natural gas = 10.465 kWh (Based on the Energy Product Unit Heating Value Table updated in 2020 by the Energy Administration, Ministry of Economic Affairs for unit conversion, 1 kWh of electricity = 860 kcal; 1 cubic meter of natural gas = 9,000 kcal)

Note 4 : Steam used in plants is steam with a saturation temperature of 132.88°C . According to the table of saturated steam, 1 metric ton of steam = 650,500 kcal/metric ton = 756.4 kWh (1 kWh = 860 kcal).

Note 5 : The calculation of production capacity was the output of Good Electronic Chip (GEC), and the output of various products was converted into around 4Gb product particle numbers, using per thousand die (k-pcs) as the calculation unit.

Note 6 : The calculation of energy consumption reduction is mainly based on the actual measured energy consumption of the equipment before and after the improvement. If it cannot be measured, it is calculated as the difference in rated power of the equipment before and after improvement x number of operating hours.

## • Renewable Energy Use and Planning

Nanya carries out planning and implementation of renewable energy use in the following three phases.



### 1 Self-development evaluation and trial implementation

Nanya purchased 362 T-RECs through the renewable energy trading platform in 2020, and also began evaluating available spaces in existing fabs. We installed 27.36 kW of solar panels on the rooftop of our new building, which was completed and began use in 2022. The solar panels generated 30 MWh of electricity in 2023 (sold to Taiwan Power Company). New fabs in the future will also fully utilize land resources and evaluate the installation of green energy facilities.



### 2 External cooperation

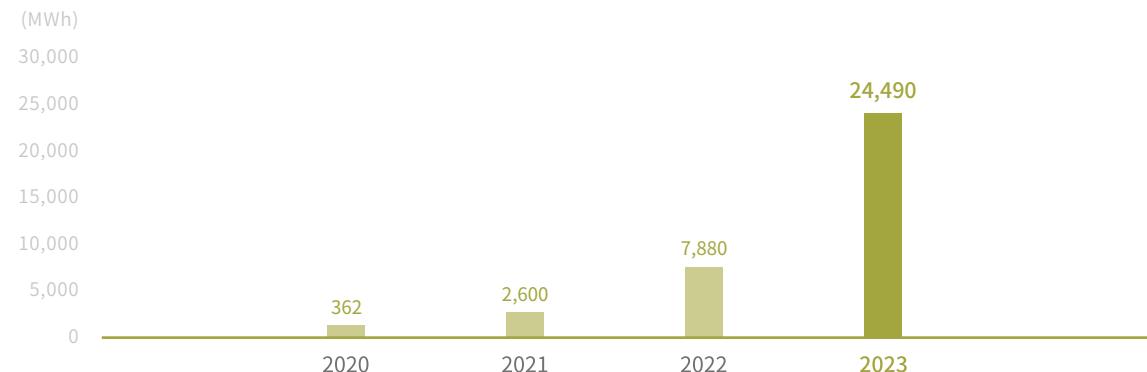
Nanya cooperates with renewable energy based electricity generation and selling companies to obtain more electricity, and is expanding the use of renewable energy based on regulatory requirements. Nanya used 24,490MWh ( $8.8 \times 10^7$  MJ) of solar power in 2023, accounting for 3.2% of the Company's electricity consumption. Nanya plans to sign solar power contracts for another annual 25,000 MWh ( $9 \times 10^7$  MJ) in 2024.



### 3 Becoming aligned with international standards by achieving net zero emissions

For the percentage of renewable energy to reach 25% by 2030 to achieve the SBT or RE100, Nanya will target the supply contracts of large renewable energy plants to eventually use 100% renewable energy.

## Renewable energy use in Y2020-Y2023



## • Enhancing energy usage efficiency

In order to mitigate the environmental impacts of greenhouse effect when building fabrication plants, energy conservation is the base for the plans, such as adopting a dual-temperature chilled water system and waste heat recovery and utilization in freezers. Over the past years, we have constantly implemented various energy-saving technologies, using diverse thinking methods, such as automating equipment control, improving equipment efficiency, reclaiming energy for reuse, and improving production management, to reduce energy consumption. Meanwhile, we prioritize energy conservation equipment during the design of equipment installation and procurement. Nanya introduced the ISO 50001 Energy Management System in 2018 and completed verification. To strengthen the concept of energy conservation among employees, it has trained dedicated energy management personnel in each unit to facilitate energy management and the implementation of energy conservation in each department. Currently, there are 119 qualified energy management personnel, and 228 employees completed training over the years.

Nanya completed the investment of NT\$21.8 million to establish an energy management system platform in 2020, and utilized the energy consumption real-time monitoring platform for statistical analysis of system equipment and smart energy conservation management. The platform helps manage and improve energy consumption of organizations and machinery groups, and promotes best practices of energy management and reinforces good management behavior. We introduced an energy baseline in the energy management system platform in 2023 to continue optimizing system functions. This will also benefit real-time analysis of equipment energy consumption and strengthen management functions, and is expected to be completed in June 2024. Furthermore, by participating in the "Energy and Water Conservation Service Team" organized within the Company, water and energy conservation experts and experts from affiliated enterprises are assigned to visit each factory area (including the Company to provide on-site guidance and audit water and energy conservation. The area covers the Formosa Plastics Group's factories in northern, central and southern Taiwan. We hope that audits and guidance from experts will effectively improve the water and energy conservation results of each factory area.

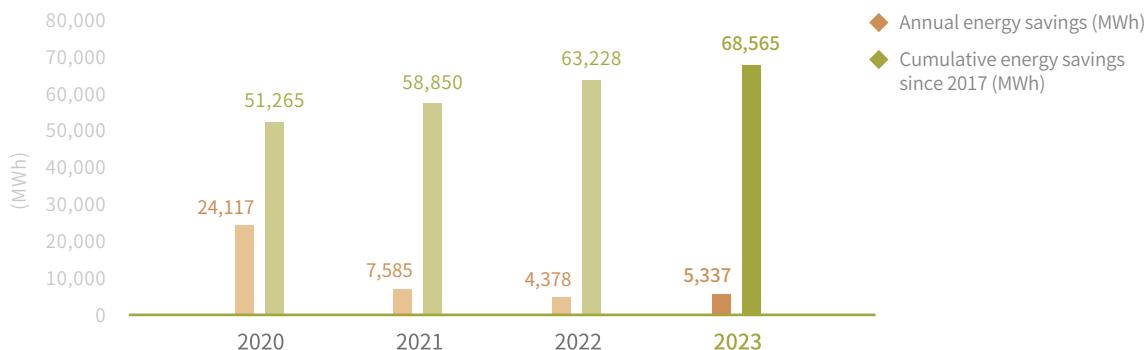
Energy conservation goals set by Nanya for 2025: The cumulative energy saving from 2017 to 2025 is 75,000 MWh/year. In 2023, a total of NT\$14.67 million was invested to complete 36 energy conservation management plans, with a total energy saving benefit of 5,337 MWh/year<sup>Note 6</sup> ( $1.92 \times 10^7$  MJ/year). We implemented 29 energy conservation plans (26 new plans, 3 ongoing plans) in 2024, and expect to save 6,804 MWh/year ( $2.45 \times 10^7$  MJ/year).

- Energy conservation plans

2023	
<b>Energy conservation plans completed</b>	
<ul style="list-style-type: none"> <li>◆ Process equipment management energy saving x 18 items</li> <li>◆ Non-process equipment management energy saving x 2 items</li> <li>◆ Process equipment improvements x 5 items</li> <li>◆ Lighting improvement and management energy saving x 5 items</li> <li>◆ Chiller energy saving x 1 item</li> <li>◆ Air conditioning energy saving x 2 items</li> <li>◆ Cooling tower energy saving x 1 item</li> <li>◆ Wastewater treatment equipment energy saving x 2 items</li> </ul>	
<b>Energy saving benefits</b>	<b>Carbon reduction volume</b>
5,337 MWh/year (1.92x10 <sup>7</sup> MJ/year)	2,642 (Metric tons CO <sub>2</sub> e)

2024	
<b>Energy conservation plans</b>	
<ul style="list-style-type: none"> <li>◆ Process equipment management energy saving x 19 items</li> <li>◆ Vacuum equipment energy saving x 1 item</li> <li>◆ CDA equipment energy saving x 1 item</li> <li>◆ Lighting improvement and management energy saving x 3 items</li> <li>◆ Air conditioning energy saving x 2 items</li> <li>◆ Testing equipment energy saving x 1 item</li> <li>◆ Air pollution treatment equipment energy saving x 1 item</li> <li>◆ Wastewater treatment equipment energy saving x 1 item</li> </ul>	
<b>Energy saving benefits</b>	<b>Carbon reduction volume</b>
6,804 MWh/year (2.45x10 <sup>7</sup> MJ/year)	3,368 (Metric tons CO <sub>2</sub> e)

### Energy saving results over the years



- Energy consumption real-time monitoring platform



- Highlight energy saving projects

### Optimization of the heat dissipation device of HIM machine saved 1,188 kWh per machine

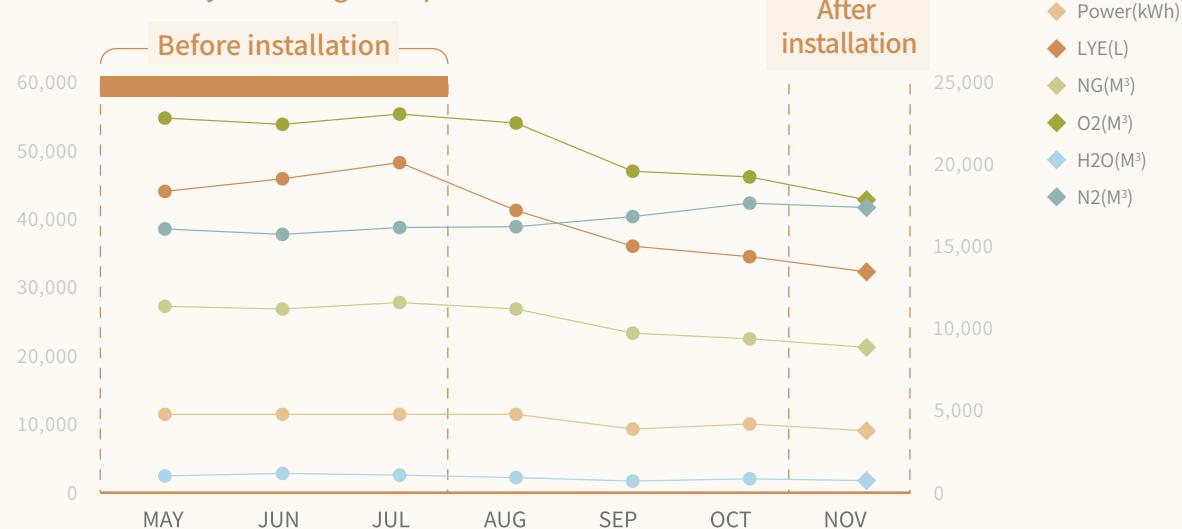
The factory-side exhaust system on the upper end of machinery and equipment is integrated for heat dissipation. During exhaust, negative pressure is used to extract air around the clock. The machine's 3 cooling fans (55W each) can be turned off, so each machine can save about 1,188 kWh/month, as the number of machines continues to increase with fab expansion, it will reduce electricity consumption considerably. We continue to review high-energy-consuming equipment in fabs and improve unnecessary electricity consumption, transitioning towards lower carbon emissions.



### Introduction of the automatic energy-saving function of the exhaust gas treatment device saves 920,000 kWh per year

Most of the process waste gas generated by semiconductor production machines uses a local scrubber to reduce NF<sub>3</sub>/PFCs/N<sub>2</sub>O and other GHG emissions to reduce the impact on the environment. Most of the local scrubbers used by Nanya uses combustion to treat the GHG emissions from production. However, the process waste gas treatment equipment cannot be changed with machine utilization rate, which not only wastes liquid fuel, but also increases operating costs. Therefore, the automatic energy-saving function of the waste gas treatment device is introduced on the production machine. The ignition timing of the combustion-type waste gas treatment device is controlled by changes in process gas pressure, so that the status of the reaction chamber of the main equipment and the waste gas treatment device operate synchronously. When the process machine's reaction chamber status is low utilization or maintenance, the waste gas treatment device will automatically turn on the idle mode function to reduce the energy consumption of the combustion-type waste gas treatment equipment, thereby achieving the purpose of energy saving and reducing costs. After the automatic energy saving function is installed, an average annual energy saving of 923,146 kWh can be achieved.

#### Idle mode utility fluid usage comparison



## Water Resource Management

Due to the effect of global climate change, rainfall has become polarized in Taiwan, resulting in floods and water shortages occurring at the same time. As an important member of the semiconductor industry, Nanya has monitored the risk of water shortage caused by global climate change, and understands the effect of climate change and water resources on operations. Nanya continues to implement water conservation measures and strives to recycle and reuse water to reduce its impact on the environment and the risk of water shortage. Nanya adopted the Alliance for Water Stewardship Standard (AWS) in 2023, and actively implements the five major results of AWS, continuing to systematically implement sustainable water resources management.

Nanya's efforts in water resource management has gained the recognition of the CDP, which is an international environmental evaluation indicator. Nanya was ranked at the leadership level "A" in Water Security in 2022-2023. Nanya was recognized for its efforts in climate change and water resource management for global sustainability with the "Water Resource Management Leadership Award" in the 15th TCSA in 2022 and 16th TCSA in 2023. Nanya has formulated and disclosed its water resources management policy. Nanya complies with the AWS in actively implementing the sustainability goals of water resources management. Nanya's water resources management policy is as follows :

**A** Continue to optimize the management of water resources in plants through personnel education and training, organizational planning, water conservation, and the establishment of response systems.

**B** Disclose quantifiable water operation indicators, with the main goal of continuously improving water efficiency.

**C** With the goal of improving the water quality of effluent, we continue to improve the water treatment system to reduce the impact of operations on the watershed.

**D** Maintain the health of important water-related areas through environmental education and continuous monitoring.

**E** Establish good environmental sanitation and drinking water quality systems in the factory area to reduce the occurrence of infectious diseases.

### Water Resource Management Actions

Nanya's water resources management focuses on the following directions. All strategies and requirements cover all operations, R&D, and production locations. Water use, water conservation, and water risk assessment are reported and reviewed by the board of directors every year.



Actively manage indicators, conserve water in operations, and fully utilize water resources.



Implement wastewater classification treatment and multiple recycling measures to maximize the efficiency of water resources.



Assess the risks and opportunities under climate change, and mitigate the impact of water shortage.



Comply with laws and regulations, continue to strengthen water treatment facilities, and reduce the risk of environmental pollution.

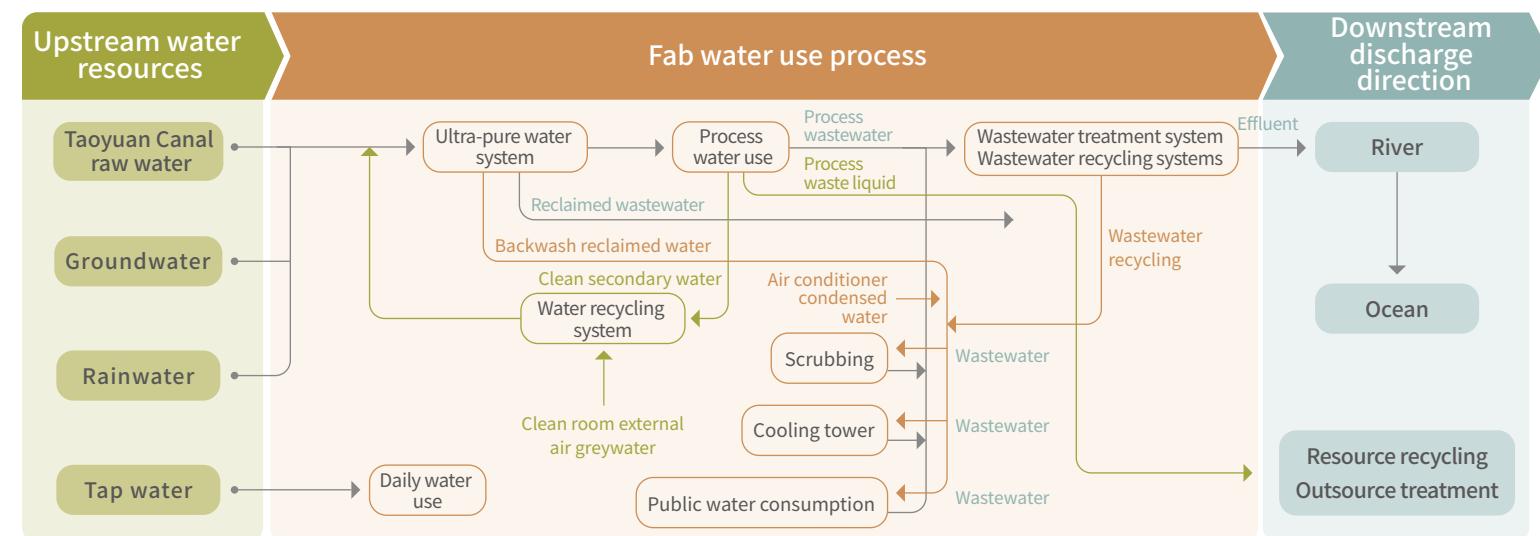


Communicate with stakeholders so that they will take water resources seriously and implement water conservation.

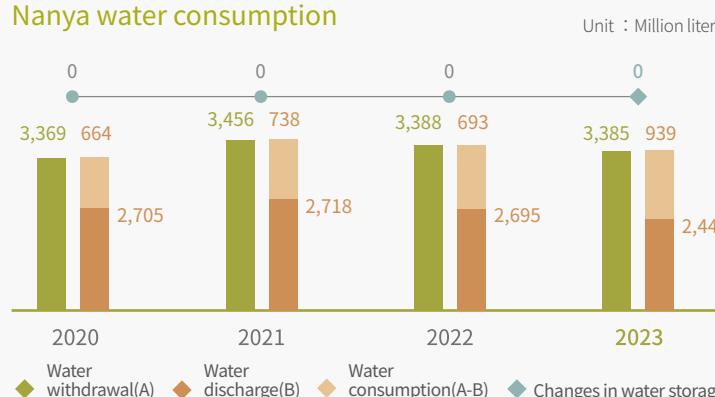
## • Water Resources Structure

Nanya's total water withdrawal was 3,385 million liters in 2023, in which Taoyuan Canal is the main source of water, accounting for approximately 96.4% (3,265 million liters), followed by well water at approximately 2.8% (94 million liters), and tap water at approximately 0.8% (26 million liters). Rainwater was recycled and reused every year in the past, but was temporarily suspended in 2023 due to equipment changes of new fab expansion. The total water withdrawal in 2023 was 0.1% lower compared to 2022. Nanya's production capacity in 2023 was 8% lower compared to 2022. In terms of water use intensity, the water consumption per unit capacity in 2023 was 3.38 thousand liters/k-pcs, an increase of 8.7% compared to 2022. Ultra-pure water consumption was 3,398 million liters in 2023, down 5% compared to 2022. In terms of water use intensity, ultra-pure water consumption per unit capacity was 3.4 thousand liters/k-pcs, an increase of 3.3% compared to 2022.

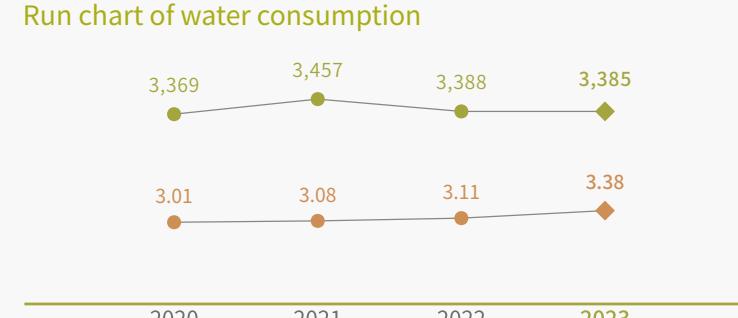
### Nanya's Water Consumption Structure



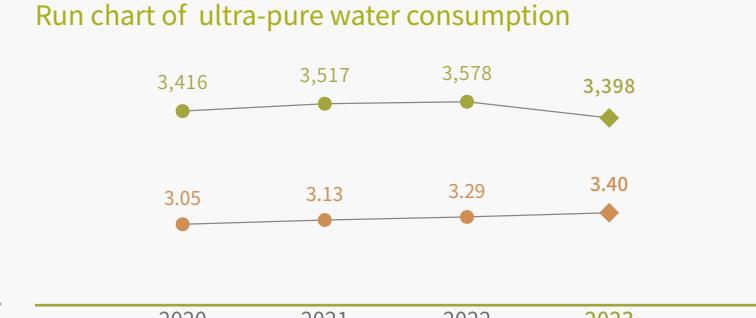
#### Nanya water consumption



#### Run chart of water consumption



#### Run chart of ultra-pure water consumption



◆ Water consumption per unit production capacity (1,000 L/k-pcs)

◆ Water consumption (Million liters)

◆ Ultra-pure water consumption per unit production capacity (1,000 L/k-pcs)  
◆ Ultra-pure water consumption (Million liters)

## • Water Resource Risk Management

Water risk factors	Assessment method	Assessment results and reactions
 <b>Water-related dependencies and shocks</b>	<ul style="list-style-type: none"> <li>Water Risk Assessment Tool (WRI Aqueduct Tool).</li> <li>Referring to the economic environment accounting system, including supply services, adjustment and support services, cultural services, etc., dependencies and impacts are identified through cross-departmental workshops.</li> </ul>	<ul style="list-style-type: none"> <li>Simulation analysis of the risk level of water source. The water source is Taoyuan Canal from Shimen Reservoir. The water supply accounts for 96.4%. The water pressure assessment result is "low". The short-term water pressure assessment result is medium-low risk (10-20%). ; The long-term 2050 is also a medium-low risk (10-20%), that is, a non-water-stressed area.</li> <li>Water resources are an ecosystem service that Nanya relies on. At the same time, semiconductors' extensive use of water resources will also cause additional impacts, including not only water grabs from neighboring communities or companies, but also ecosystem damage caused by excessive water use.</li> <li>Nanya will discharge wastewater during its operations. Although the wastewater complies with regulatory standards, if the total discharge exceeds the environmental load capacity of the area, it will still lead to the loss of biodiversity.</li> </ul>
 <b>Future water availability</b>	<ul style="list-style-type: none"> <li>Climate change water resource hazard map information from the Taiwan Climate Change Estimation Information and Adaptation Knowledge Platform Project (TCCIP), under the RCP 8.5 mid-century (Y2036~Y2065) scenario.</li> </ul>	<ul style="list-style-type: none"> <li>The average annual rainfall in northern Taiwan increased by 12%, but the spring rainfall decreased by 5%. Nanya's backup water source volume is greater than the decrease in rainfall. It is estimated that the Shimen Reservoir will still be able to meet production requirements due to reduced rainfall in the spring and reduced water supply in the future. demand, no risk of water shortage.</li> <li>The water supply of Shimen Reservoir is about 800 million liters per day, and Nanya's daily water consumption is about 10 million liters. Therefore, the impact of Nanya's operations on regional water use is 1.25%.</li> </ul>
 <b>Future water quality</b>	<ul style="list-style-type: none"> <li>Introducing Alliance for Water Stewardship Standard, AWS</li> </ul>	<ul style="list-style-type: none"> <li>All wastewater is collected and discharged to appropriate sewage facilities for treatment. The wastewater is divided into 28 types of pipelines in the diversion and distribution section. In order to ensure that the discharged water quality meets the standards, it has been synchronously connected with the Environmental Protection Bureau to monitor the discharged water quality, and will be commissioned every quarter. Regular external sampling, analysis and testing are carried out to strengthen wastewater quality control.</li> <li>When the Shimen Reservoir discharged water during the typhoon period, the water supply was affected by high turbidity due to sediment alluvial. Since the layered water intake project of the Shimen Reservoir has been completed in 2021, the high turbidity of the raw water has been greatly alleviated, and the plant has been A rapid settling tank can be set up to treat raw water with high turbidity (&lt;10,000NTU), and the risk of future water quality affected by high turbidity on water supply will be assessed with low risk.</li> </ul>
 <b>Local stakeholders</b>	<ul style="list-style-type: none"> <li>The water supply capacity of Shimen Reservoir owned by Nanya Technology Water Source is approximately 800 million liters per day, and the company's daily water consumption is approximately 10 million liters. Therefore, the impact of Nanya Technology's operations on regional water use is 1.25%.</li> </ul>	<ul style="list-style-type: none"> <li>Nanya's production water mainly comes from Taoyuan Canal. It has signed a water supply contract with the management unit of Taoyuan Canal. The water supply volume has been agreed to ensure the stability of the water supply. It has also been agreed that the contracted water volume can be exceeded to facilitate emergency replenishment in the event of water shortage and increase water flexibility.</li> <li>Nanya has united with nearby Formosa Plastics Group factories to establish a water shortage emergency response organization. Through this emergency response organization, emergency water supply support can be allocated to each other. There has never been any production loss due to water shortage.</li> <li>Communicate with local residents and the public, and disclose information related to Nanya water management to eliminate public doubts about Nanya water management.</li> </ul>
 <b>Water related regulations</b>	<ul style="list-style-type: none"> <li>Regulations on Water Conservation Charge</li> </ul>	<ul style="list-style-type: none"> <li>The water recovery rate in 2023 has been certified by a third-party impartial unit to reach 95.8%, which is higher than the industry benchmark value announced by the government (50%~85%) and reaches the minimum rate collection calculation standard announced by the government. It is estimated that the annual water fee increase will only be about 3 %, with low impact on operating costs.</li> </ul>



## • Water Resource Risk Management

Our main water source comes from the Shihmen Reservoir, and is channeled and processed through the Taoyuan Canal before being supplied as production water. The gravity flow is used to independently channel water without affecting the ecology of water resources and any other purposes of usage. In addition, rainwater harvesting can supply production water and tap water for household use. Nanya currently only has one production area located in New Taipei City, Taiwan. Taiwan's rainfall is extremely unevenly distributed between regions and seasons, which often results in regional and seasonal droughts. We used the WRI Aqueduct Tool assessing water risk to simulate and analyze the risk of water sources. For the Taoyuan Canal of Shihmen Reservoir, which supplies 96.4% of water, the water stress assessment result was "low", meaning that it has medium to low risk (10-20%) in the short-term. Long-term stress to 2050 is also low to medium risk (10-20%), meaning that it is a non-water stress area. In addition, according to the climate change water resource hazard map of the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), in scenario RCP 8.5 in the middle of the century (Y2036-Y2065), the average annual rainfall in northern Taiwan increased by 12%, but rainfall in spring decreased by 5%. The Company's backup water supply volume is greater than the decrease in rainfall. Despite the lower rainfall during spring and lower water supply from Shihmen Reservoir, the water supply will still be able to meet production needs without the risk of water shortage.

In addition, when Shihmen Reservoir discharges water during a typhoon, silt washed into the reservoir causes high water turbidity is high and affects the water supply. Since the Shihmen Reservoir layered water withdrawal project was completed in 2021, the high turbidity of raw water has been greatly improved, and the fab has a fast settling tank that can treat raw water with high turbidity (<10,000NTU). Hence, we determined that high turbidity has low risk of affecting water supply in the future. The government began to collect water conservation charge in accordance with the "Regulations on Water Conservation Charge" in 2023. Nanya has dedicated its efforts to water recycling, and Nanya's water recycling rate has been certified by an impartial third party to reach 95.8%<sup>Note 2</sup>, which is better than the industry standard announced by the government (50%-85%), and qualifies for the minimum charge rate announced by the government. Therefore, the increase in water fee each year is expected to be only about 3%, and only has low impact on operating costs.

Note 2: The recycling rate for water conservation charge is calculated based on the formula set by the Industrial Development Administration of the Ministry of Economic Affairs.

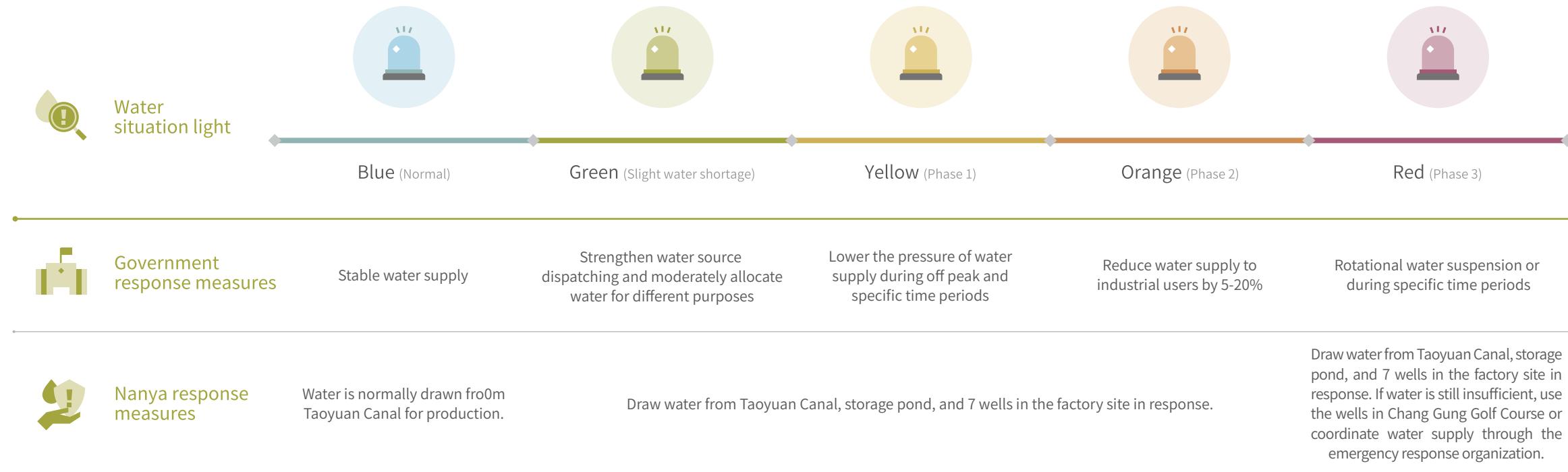
Nanya's water source Shihmen Reservoir supplies approximately 800 million liters/day. The Company's daily water consumption is approximately 10 million liters. Hence, the effect of Nanya's operations on regional water use is 1.25%. Water used by the Company for production is mainly supplied by Taoyuan Canal, and the Company has signed a water supply contract with the management unit of Taoyuan Canal: Irrigation Agency, mainly agreeing on the water volume supplied to ensure the stability of the water supply. The contract also stipulates that the Company may withdraw water exceeding the agreed volume as a temporary water source for emergency replenishment, increasing the flexibility of water use. Nanya participates in the semiconductor industry association, periodically attends meetings of the "water resource diversified management and cooperation platform" of the Water Resources Agency, understands the water supply situation, and engages in exchanges, communication, and cooperation in water resource related policies. Other locations include the design house in Hsinchu, Taiwan, overseas design houses, and sales offices (including San Jose, Houston, and Burlington in the US, Dusseldorf in Germany, Shenzhen in China, and Tokyo in Japan). Since the locations are all offices and do not engage in any production, there is no effect on operational risks. We established a standard process and procedures and examined water resource related risks through the environment management framework and company operational risk management framework, implementing related improvement measures and formulating emergency response plans, which are periodically examined in quarterly meetings of the Sustainability Promotion Center and Risk Management Steering Center.

To reduce the risk of short-term water shortages inherent in the geographical location, we have continuously promoted water-saving measures, and committed ourselves to water recycling to strengthen our adaptability. The amount of water needed by production is huge so water shortage will cause production interruptions, affecting the output and delivery. To mitigate immediate impacts caused by short-term water shortages, a cistern with a capacity of 43 million liters and two detention basins each with a capacity of 4.06 million liters have been built in the plant to effectively harvest rainwater during the rainy season. Moreover, Nanya and the adjacent factories of the Formosa Plastics Group have cooperated to set up an emergency response organization for water shortages. When water shortages occur, the members of the emergency response organization can urgently deploy water resources to support each other. Therefore, no production losses have occurred owing to water shortages.

## • Development of multiple water sources to reduce production risks

In coordination with the expansion of the new Fab 5A, we have applied to the water company to supply tap water for processes, with a daily water supply of 11 million liters. We plan to install 8 more groundwater wells outside the factory area, with a daily water supply of 7.2 million liters. The tap water source of the Taishan plant is included and equipment and pipelines were renovated, with a daily water supply of 2 million liters. We will continue to pay attention to the government's reclaimed water development plan. Since the government currently does not have an appropriate reclaimed water utilization plan for the location of the factory area, we will continue to pay attention to the government's plans, and introduce it at an appropriate time.

### Nanya drought response mechanism



## • Water Conservation

In addition to the design of water-saving processes, the Nanya's water management chiefly emphasizes water reduction and recycling. To manage Nanya's water efficiency, the Company's long-term (2025) water resources management goal is to reduce the cumulative water consumption per unit capacity in 2025 by 39% compared with 2017. We hope to improve water efficiency and recycled water volume through the improvement of production processes and equipment, thereby reducing water consumption. The implementation of water conservation covers all operations, R&D, and production locations. Currently, the main directions of implementation are as follows:

**A** Implement water-saving results through work guidelines.

**B** Reach the reduction effects through methods of conservation such as reduction and recycling.

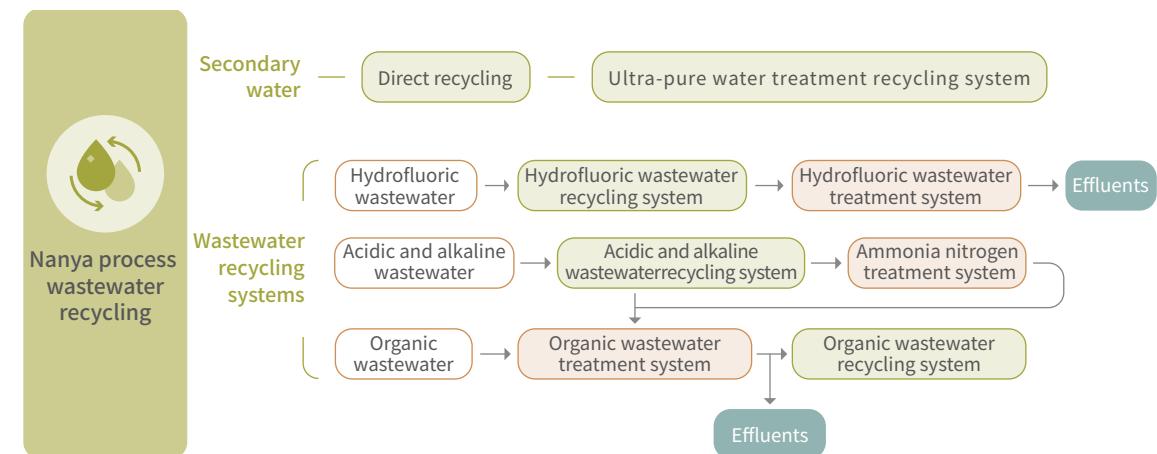
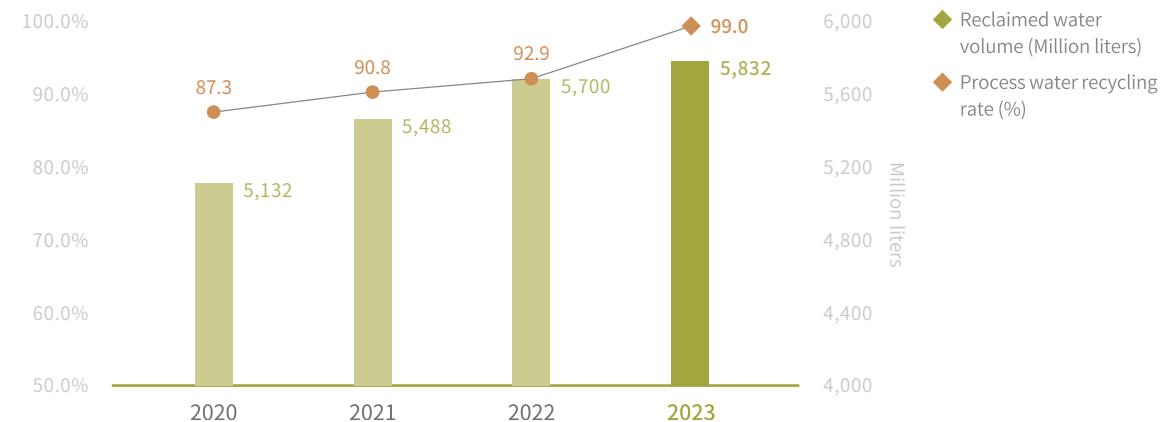
**C** Promote water conservation through daily management practices.

**D** Build waste water classification treatment and adopt multiple recycling to maximize the use of water resources.

Nanya is actively implementing a number of water-saving measures, and has dedicated even greater effort to water recycling in recent years. The fab currently has acid-alkaline wastewater, hydrofluoric wastewater, and organic wastewater recovery systems. Along with the implementation of various water saving measures, the process water recycling rate has increased each year. The improvement and expansion of the hydrofluoric wastewater recovery system in FAB 3AN and construction of new hydrofluoric wastewater COD and total nitrogen treatment systems (including water recovery system) were completed in 2023, and is expected to further increase the amount of reclaimed water by 522 million liters per year. After years of continuous efforts, process water recycling rate reached 99% in 2023 , the wastewater recycling system, process recycling system, and pure water process wastewater recycling and reuse volume totaled 5,832 million liters in 2023, accounting for 172.3% of total water withdrawal.

Nanya's process water recycling rate is calculated using the formula specified by Hsinchu Science Park Bureau, the same as peers in the industry.

Process water recycling rate and volume



### 2023 Water conservation plans completed

water-saving  
benefits  
**531,425**  
thousand liters /  
year

- Completed 6 water conservation plans
- ◆ 2 construction and expansion of water recycling systems
  - ◆ 1 reduction in number of equipment operating
  - ◆ 3 improvements in equipment water-saving efficiency

Description	Water-saving benefits (Thousand liters/year)	As a percentage of annual Water conservation (%)
FAB 3AN hydrofluoric waste water recycling system equipment improvement and expansion	156,950	<b>29.53%</b>
Newly built hydrofluoric waste water COD and total nitrogen treatment system (includes water recycling system)	365,000	<b>68.68%</b>
Cooling tower sand filter reduces water consumption	8,632	<b>1.62%</b>
Burn Box sprinkler adjustment water saving improvement	205	<b>0.04%</b>
EBARA NST Tool Idle Mode DI parameter adjustment	101	<b>0.02%</b>
AMAT LK NST Tool Idle Mode DI parameter adjustment	537	<b>0.1%</b>

(thousand liters/year)

### 2024 Water conservation plans to be implemented

water-saving  
benefits  
**50,927**  
thousand liters /  
year

- Continue to implement 7 water conservation plans
- ◆ 4 equipment and operation parameter adjustment plans
  - ◆ 1 improvement to reduce domestic and cleaning water use
  - ◆ 2 plans to increase the use of reclaimed water to further increase the amount of recycled water

Description	Estimated water saving benefit (Thousand liters/year)
OWWR-II reclaimed water is used in the pure water system to increase the use of reclaimed water	45,000
Install water saving valve on sink faucets	2,628
Evaluate reduced use of equipment for water conservation x 2 plans	2,356
Equipment parameter adjustment for water conservation x 2 plans	466
Use reclaimed water for cleaning fab equipment to increase the use of reclaimed water x 1 plan	487

(thousand liters/year)

- Promoting AWS certification towards water resource sustainability management

In response to the severe challenge of climate change, Nanya adopted the world's only sustainable water management standard (Alliance for Water Stewardship Standard, AWS) in 2023 to implement water resource sustainability management. We continue to effectively and pragmatically manage every drop of water from the source to water use by processes and finally to discharge. We protect the ecological environment, cherish every drop of water, and continue to improve our water use efficiency. We will also continue to systematically implement water resource sustainability management based on the five major achievements of AWS,

### Five Spirits and Requirements of AWS

 Good water management system
 Sustainable water balance
 Excellent water quality
 Health of important water areas
 Safe drinking water and environmental sanitation

A good water management system ensures fair distribution of water resources, and allows different users and nature to share limited water resources.

The physical, chemical and biological indicators of natural water bodies can meet the needs of human use and the health needs of aquatic animals and plants.

The physical, chemical and biological indicators of natural water bodies can meet the needs of human use and the health needs of aquatic animals and plants.

Water-related areas with natural, social, or cultural value are effectively protected or restored to bring long-term value to people or the environment.

All people have access to safe water supply to meet basic dietary and personal hygiene needs

### Nanya's Sustainable Water Management Organization and Duties



### Nanya's Five Major Achievements in AWS Implementation

#### Properties



Good water management system

#### Measures and results

Nanya formulated the water resources management policies and standard processes and procedures for operations, in order to improve water management efficiency through systematic management. We reviewed water resources-related risks through the Company's risk management framework, implemented improvement measures, and formulated response plans to effectively manage risks. We are transparent and openly share water management-related information with stakeholders, and participate in environmental protection activities to improve the Company's image in society.



Sustainable water balance

Nanya actively implements various water conservation measures, implements work policies to achieve water conservation results, achieves reduction through reduction and recycling methods, promotes water conservation through daily management methods, establishes wastewater classification treatment, and also adopts four major policies to promote multiple recycling and reuse methods, thereby maximizing the use of water resources. In recent years, Nanya has focused more on the construction of recycling systems, and implemented various water conservation measures. The process water recycling rate reached 99% in 2023, the total amount of wastewater recycled reached 5,832 million liters, accounting for 172.3% of total water consumption.



Excellent water quality

All wastewater generated by Nanya is collected according to property classification and channeled into proper wastewater equipment for treatment. A total of 28 types of pipelines are distinguished in the wastewater distribution and piping section. To ensure that the quality of discharged wastewater is in line with regulations, we and the Environmental Protection Department have monitored the quality of effluents via synchronous connections. In addition, sampling, analysis, and detection are outsourced every quarter to improve wastewater quality management and control.



Health of important water areas

Nanya began working with a professional ecology company in 2008 to conduct biological resource surveys of animal and plant ecology in water and on land in surrounding areas of its fab. Ecological monitoring is periodically conducted and improvement measures are formulated for abnormalities, in order to lower the impact on biodiversity. Nanya maintains the ecological environment and strengthens environmental education through initiatives, such as removing Mikania micrantha from Wugu Wetland, beach cleaning, and sea cleaning.



Safe drinking water and environmental sanitation

Nanya formulated operating standards related to drinking water in the fab, conduct regular testing and maintenance, and provide a clean and sanitary environment, so that employees, manufacturers and visitors can enjoy healthy and safe drinking water and a comfortable and adequate sanitary environment. Nanya formed a Pandemic Response Task Force in response to the COVID-19 pandemic in recent years. The task force divides tasks and conducts drills to reduce all epidemic risks in the Company's operations.

## • Cooperation and Communication

Nanya continues to manage and evaluate internal water resources, and actively implements water conservation and water recycling and reuse. Nanya also communicates, exchanges, and cooperates with stakeholders through various methods, and communicates with government agencies through various opportunities to understand national water resource policies and developments. Nanya may further cooperate with the government to fulfill its corporate social responsibilities. Nanya shares its experience and provides guidance to suppliers to drive water conservation by the supply chain for the common good of society. Nanya communicates and discloses water management information to local residents and the general public, in order to eliminate any doubts the public may have about Nanya's water management. The Company provides employees with water management-related training to help employees understand the Company's water management-related policies, and facilitate the implementation of water conservation. In 2023, training was provided to all employees through the Company's training management system, with 3,511 people completing the training.



Government

- ◆ Participate in the semiconductor industry association, periodically attend "water resource diversification management and cooperation platform" meetings of the Water Resources Agency, and engage in exchanges, communication, and cooperation in water resource related policies.
- ◆ Attend meetings and coordinate and communicate with the Irrigation Agency and North Region Water Resources Office, and cooperate with the government's emergency response plan when there is a water shortage, in order to most effectively utilize water resources, mitigate the impact of water shortages in water supply areas, and achieve stable and balanced water supply.
- ◆ Participated in the road leveling project and pipeline coordination meeting of the Office of Road and Accessory Maintenance, Taoyuan City Government to understand whether the construction interface will affect the water supply situation through cross-unit meetings.
- ◆ In May 2023, we cooperated with the Irrigation Agency to implement the "Flow Monitoring Implementation Project," and installed an electronic flow meter with an RS-485 transmission interface at the water withdrawal point of Taoyuan Canal. It can link water use information, such as current flow and accumulated flow, to the Irrigation Agency's cloud network, so that the Irrigation Agency can accurately monitor water consumption in real time, and provide the reservoir management authority with accurate allocation of water supply, thereby avoiding waste of water resources.



Suppliers

- ◆ Suppliers are required to sign the Commitment to Corporate Social Responsibility. Water resources management and TCFD physical risk identification are planned in the supplier risk assessment questionnaire (SAQ). We cross referenced maps in scenario RCP8.5 of the IPCC AR5 published by the Climate Change Disaster Risk Adaptation Platform (DR.A) of the National Science and Technology Center for Disaster Reduction (hereinafter referred to as NCDR), and reviewed water resources risks of 31 suppliers of concern, ensuring that they have water resources management measures and emergency response plans for water shortages. We conduct on-site audits of high-risk and key suppliers, and provide guidance to make improvements for deficiencies. Therefore, we have assessed that the physical risks of climate change will have limited impact on Taiwanese suppliers, and will not disrupt production.
- ◆ We share, exchange, and provide guidance to suppliers for water management and conservation measures through supplier meetings, and encourage suppliers to conserve water and improve their water management measures. A total of 2 meetings were held in 2023, and a total of 39 suppliers participated in the meetings. We hope to jointly improve the water management-related actions of the overall supply chain through our experience.
- ◆ Nanya sets goals every year and works with the ESG team to conduct on-site audits and guidance visits to suppliers. In 2023, Nanya conducted on-site audits and made guidance visits to a total of 25 suppliers, in which 9 suppliers completed water conservation plans, with an annual water saving benefit of 1,744 million liters. In 2024, we plan to audit and provide guidance to 30 suppliers, with an estimated annual water saving benefit of 1,000 million liters.



Water resources management experience sharing and guidance during the 2023 Suppliers Meeting



Local residents

- ◆ Nanya formed an Environmental Quality Supervision Committee with the local community when it was first established, and commissions a third party to conduct surveys of surrounding ecology, hydrology, and air quality. Survey results are reported to the Environmental Quality Supervision Committee.
- ◆ Nanya learns about issues that community residents are concerned about through the Environmental Quality Supervision Committee, and includes the issues in its periodic evaluation of ISO 14001 Management Systems.
- ◆ To ensure that the water quality of effluent is normal and eliminate concerns residents may have about effluents from Nanya, we have established an effluent water quality real-time monitoring system that is linked to the Environmental Protection Bureau, jointly monitoring the water quality of effluents in real time.



Companies and the general public

- ◆ Nanya shares its water management experience through participation in various events, such as the green factory visit co-organized with the Industrial Development Bureau in 2021, during which we shared our water management and water conservation results with visiting government officials and companies.
- ◆ By participating in the "Energy and Water Conservation Service Team" organized within the Company, water and energy conservation experts and experts from affiliated enterprises are assigned to visit each factory area (including the Company) to provide on-site guidance and audit water and energy conservation. The area covers the Formosa Plastics Group's factories in northern, central and southern Taiwan. We hope that audits and guidance from experts will effectively improve the water and energy conservation results of each factory area.
- ◆ Nanya began operating a YouTube channel in 2019, and use Vlog, animations, video editing to present topics such as its corporate image, corporate sustainability, process and products, happy enterprise, and social participation, expanding the topics and immediacy of communication. The film "Environmental Sustainability – A Practitioner of Green Technology" shows the importance that Nanya attaches to water resources and its circulation and reuse. The film stood out from nearly 10,000 works from around the world and won the German iF Design award in 2021.
- ◆ Nanya began releasing an [AWS Sustainable Water Management Implementation Report](#) through its official website (Corporate Sustainability ESG) in 2023.

## Raw Materials Reduction and Reuse

- Raw Materials Reduction

Nanya regularly reviews the rationality and appropriateness of raw material use. Moreover, we reduced the use of raw materials by streamlining the manufacturing process. The responsible organization of the company set implementation goals for raw material reductions every year, and periodically reviewed the performance of reductions in the entire company's raw materials. Accumulative 35 entries in improvement proposals regarding the consumption of raw materials were completed in 2023, including formula development of new processes, reductions of process time, extensions to use cycle, and reductions of process consumption. In the 2023 improvement plan, triethanolamine is recycled and reused at the machine end, and the consumption of a single wafer was reduced from 2.4 liters to 0.13 liters. The greatest benefit is an annual reduction of 296 tons.

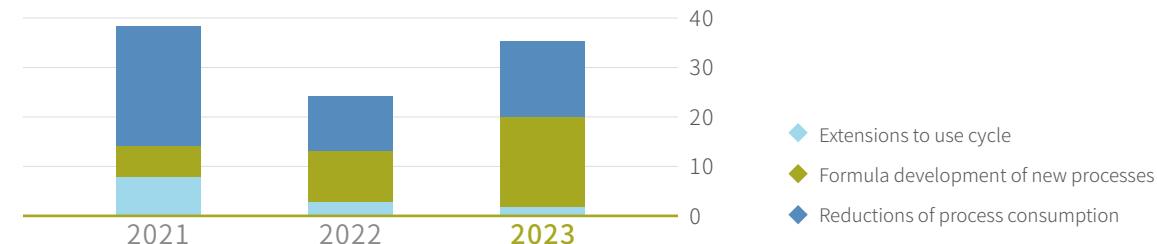
### Performance of raw material consumption improvement proposals in 2023

Properties	Number of cases	Proposals	Benefits (NTD/year)
Extensions to use cycle	2	2 items including the extension of the hydrofluoric acid tank acid replacement cycle, and extension of the gas cylinder replacement time	1,283,112
Formula development of new processes	18	Reduced the use of 18 items, including photoresist, chemicals, and grinding fluid, through process optimization and the development of high speed processes and formulas.	52,579,385
Reductions of process consumption	15	Reduced the use of 15 items, including photoresist, special gases, and chemicals, by improving production efficiency and optimizing equipment parameter settings	48,548,192

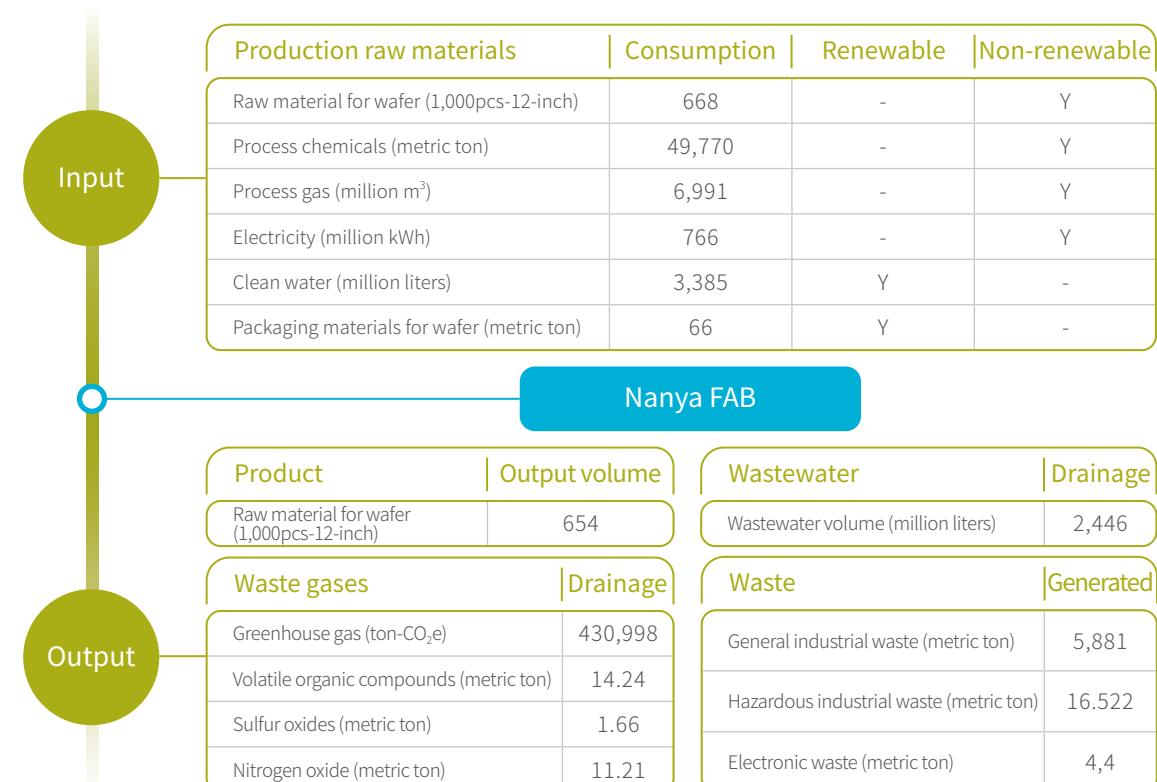


Plans and measures	Reduction (metric tons/year)
Waste sulfuric acid, hydrogen peroxide, hydrofluoric acid: Process optimization	360
Triethanolamine recycling and reuse	296
Waste grinding fluid: Process optimization	33
Waste photoresist reduction: Process optimization	2
Total reduction	691

### Improved performance of raw material consumption



### Use and output of raw materials



- Recycling and reuse - Recycling inside plant

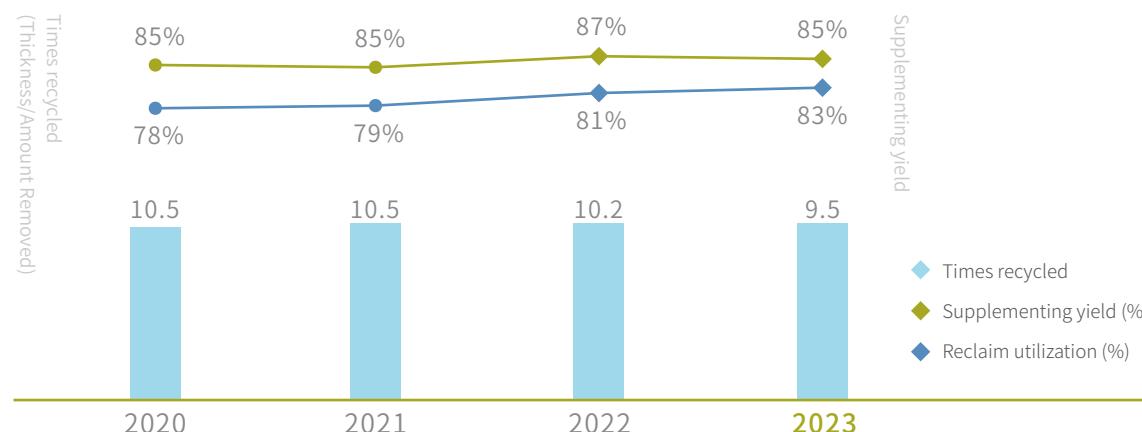
#### Ratio of using recycled materials as production materials

When using renewable raw materials in the production process, it is necessary to use monitor wafers to monitor process conditions. The used monitor wafers can be reproduced and used repeatedly; each monitor wafer can be repeatedly used 8-11 times (varies with the process used). Therefore, the cost of purchasing brand-new dummy wafers was saved while plenty of waste output was reduced.

Since 2017, we have used suppliers' supplementing yields as major indicators for the allocation percentage of orders of the next year. In addition to considering suppliers' quotations, wafers of high supplementing yields may enhance the quantities of supplementing wafers, and may further improve the percentage of wafer start capacity using reclaim wafer.

We periodically reviewed defective items with suppliers, and asked suppliers improve their process conditions and modify specifications. In 2020, suppliers adjusted process methods so the discard condition that etching numbers of wafers were incorrectly read after step rings were polished was improved. This increased the average supplementing yield from 80% to 85%, and recycling rate increased from 77% in 2019 to 79% in 2021 and further to 83% in 2023 due to the stability of supplementing yield.

#### Supplementing yield and utilization of reclaim wafers in 2021-2023



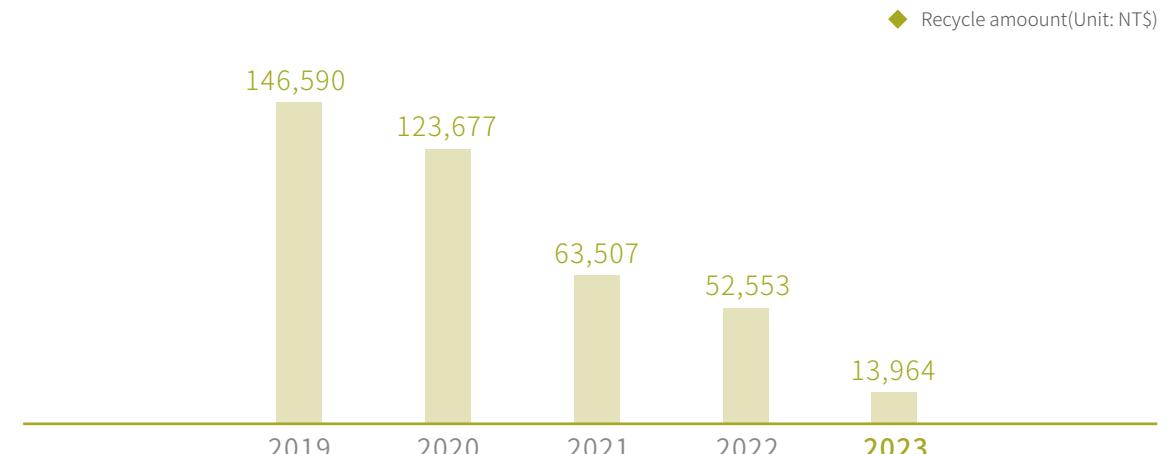
#### Product testing and reclamation of delivery packaging materials

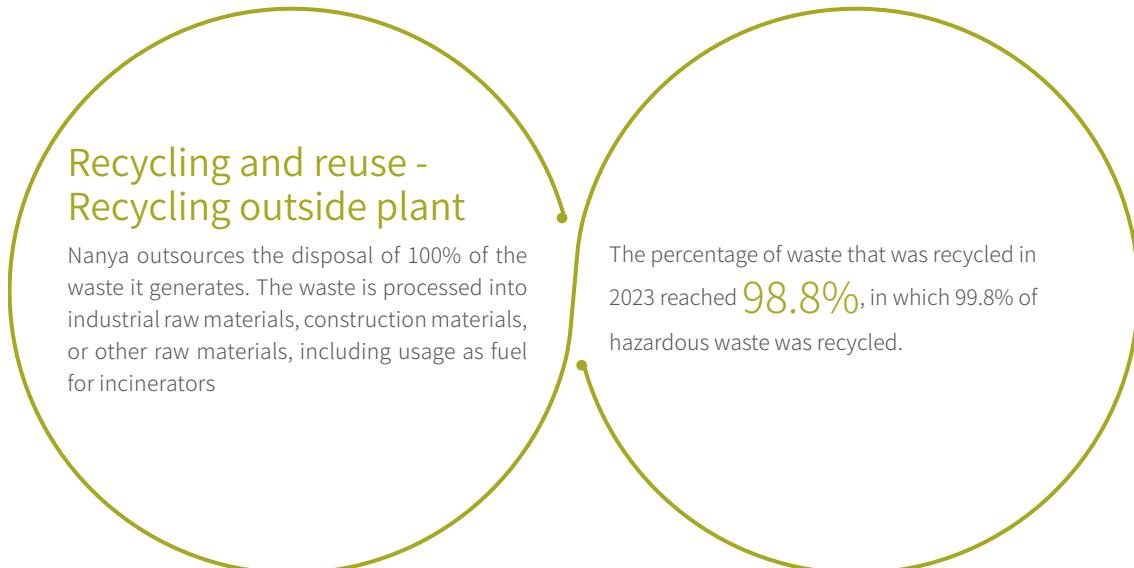
Packaging materials for product shipments to outsourced testing facilities or packaging facilities, such as cartons, outer cartons, cushioning materials, and wafer cassettes, were all reclaimed as many as possible to be reused within the company. Moreover, wafer cassettes used by raw material for wafer were also recycled and reused in product shipments, and the reuse rate of these cassettes were nearly 100%. The aforementioned practices reduced the consumption of product packaging materials and waste output to minimum levels. This approach could reduce the consumption of approximate 14,000 pieces of brand-new 12-inch wafer cassettes every year, equivalent to reducing the consumption of 66 tons of plastics.

#### Reduction in product packaging materials

In response to the action of recycling and reductions, the company's own warehouses of finished products started with recyclable packaging materials. Reusable packaging materials used in supplementing finished products were recycled to be used in product exchanges for customer complaints, product storage, and commissioned work to reduce the times of application and purchase, further achieving the action of recycling for reuse and reductions of packaging materials. In addition, the cost of packaging materials used could be reduced. Although the saved amount was small, it made a difference to overall environmental maintenance and resource recycling. The performance is as follows:

#### Reduction in product packaging materials resulting in cost savings.





### List of waste generated by Nanya that is recycled externally

1. After collecting low concentration waste isopropanol liquid in the factory, it is processed by the concentration system into high concentration waste isopropanol liquid, which is recycled and reused to make industrial grade isopropanol.
2. After collecting waste photoresist in the factory, it is recycled and reused to make industrial grade PGMEA and EBR.
3. After collecting waste sulfuric acid in the factory, it is recycled and reused to make industrial grade sulfuric acid.
4. After collecting waste phosphoric acid, the recycling company increases its purity to make industrial grade phosphoric acid.
5. After collecting waste ammonium sulfate, the recycling company uses it to make industrial grade ammonium sulfate.

### Summary of outsourced recycling and reuse of waste generated by Nanya

Year	2020	2021	2022	2023
Total amount of outsourced waste disposal (metric ton)	23,413	24,586	23,981	22,403
Waste recycling amount (metric ton)	22,234	23,321	22,089	22,123
Waste recycling percentage (%)	95	94.9	92.1	98.8
Outsourced general waste disposal amount (metric ton)	6,090	7,113	6,383	5,881
Amount of general waste recycling (metric ton)	5,347	6,452	4,951	5,626
Percentage of general waste recycling (%)	87.8	90.7	77.5 <sup>Note</sup>	95.7
Outsourced hazardous waste disposal amount (metric ton)	17,323	17,473	17,598	16,522
Hazardous waste recycling amount (metric ton)	16,886	16,870	17,137	16,497
Hazardous waste recycling percentage (%)	97.5	96.5	97.4	99.8

Note: The reason for the decrease in general waste recycling percentage was due to heat recovery from organic sludge, which was listed as recyclable waste in 2021, but it was incinerated and not recycled in 2022.

6. After collecting waste ammonium fluoride/hydrofluoric acid, the recycling company uses it to make sodium hexafluoroaluminate.
7. After collecting waste hydrofluoric acid, it goes through the chemical treatment system to generate calcium fluoride inorganic sludge, which can be recycled to make the raw material for industrial flux or cement.
8. After collecting waste liquid containing copper, it goes through electrolysis in treatment equipment to generate foil, which is recycled and reused to make copper wires.
9. After collecting organic wastewater, it goes through the biological treatment system and generates organic sludge, which can be made into raw materials for ready mix concrete and construction materials after thermal treatment.
10. After collecting waste SOD, the recycling company uses it to make lacquer thinner.
11. The inorganic sludge consisting of river sand generated from filtering water is provided to brick factories to make bricks for construction.

# 5.3 Environmental Pollution Prevention

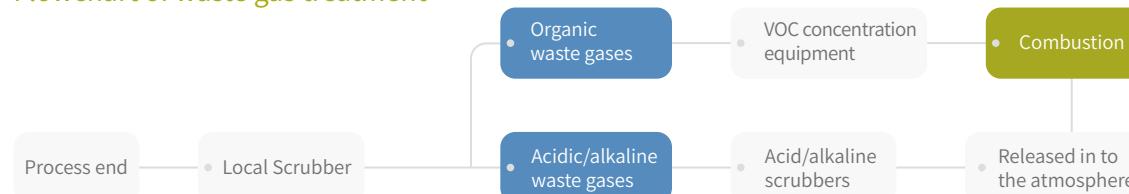
Based on the environmental protection and commitments of environmental impact assessment, the company regularly monitors environmental impact factors, such as air quality, noise and vibration, the quality of surface water and groundwater, traffic flow, and the ecosystem within the scope of development to truly appreciate its impacts on the environment. There has been no violation of environmental regulations since 2014. In addition, Nanya (Nanya) has checked with the competent authorities that Nanya's developing areas are not at an environmentally sensitive location or a location with specific purposes. In the Environment, Safety and Hygiene Policy, Nanya has made every effort to promote various measures to reduce waste and recycle resources to comply with relevant requirements of regulations as well as to respond to the commitments to environmental protection-related requirements signed by the company. Moreover, Nanya annually evaluates waste that can be reduced and recycled, and the types and amount of recovered waste water, drafts annual plans and goals, and includes the plans into the annual budget and work plan.

## Air Pollution Control

Since the fab was established, Nanya has put great emphasis on pollution control. Not only have we effectively reduced material consumption and lowered the concentration of waste gas emission, but also have used air pollution control equipment in compliance with statutory standards, including local scrubber, acid/alkaline scrubbers, the VOC (volatile organic compound) zeolite rotor concentration equipment, and post-combustion machinery. local scrubber stands for local waste gas treatment equipment). Detections over the years show that the company has met (exceeded) the pollutant emission standards stipulated in the government's environmental regulations. Furthermore, the Company does not have any ODS emissions. To continue to maintain the best performance of treatment equipment, every equipment is maintained and inspected periodically. The operators receive complete training and education are to maintain the system in good operation and ensure that the waste gases emitted do not endanger the environment.

Nanya's main air pollutants include acid and alkaline waste gas and organic waste gas, and raw materials do not use trichloroethylene, so there are no HAPs emissions. The waste gases are imported into appropriate treatment processes and equipment based on their properties. From the production line, the waste gases are imported into the local waste gas treatment system to have specific substances removed. Acidic or alkaline waste gases are then treated by the acid/alkaline scrubbers. After the treatment, the waste gases can be released into the atmosphere. Organic waste gas is absorbed and concentrated by the zeolite rotor, and then imported into the post-combustion equipment to be directly broken down. The combustion efficiency rate reaches 99%, which substantially exceeds statutory standards. Moreover, the reduction rate of overall volatile organic gas emissions is kept above 90%, meeting the statutory requirements. Organic air pollutants released per unit product (emission intensity) in 2023 was 14.2 g VOCs/kpcS 4Gb eq.

## Flowchart of waste gas treatment



### VOC emission trends

Year	2020	2021	2022	2023
VOC emission trends				
VOC emissions (metric ton)	15.58	15.68	17.31	14.24
Emission per unit wafer area (kg/wafer area m <sup>2</sup> )	0.26	0.27	0.29	0.30
VOC emissions per unit production capacity (g/thousand die)	14.2	14.0	15.9	14.2
VOC emissions per unit revenue (g/NT\$1 million)	260	183	304	476
Other air pollutant emission trends				
NOx (metric ton)	10.05	10.34	10.50	11.21
SOx (metric ton)	1.92	1.66	1.66	1.66

### Air pollution reduction

To reduce the emission of volatile organic compounds (VOCs), besides continuing to adjust the operating parameters of air pollution control equipment to optimize the treatment system each year, Nanya invested NT\$23 million in 2022 to update the 2 VOCs waste gas treatment systems of Fab 3A, and changed the material of the zeolite concentration rotor from ceramic to glass fiber to increase treatment capacity. After completion in 2023, a third party verified that equipment processing efficiency reached 98% and above, and VOCs emission was reduced by 70% compared to 2022.

Air pollutant	2022	2023
VOCs emission (metric tons) from emission pipe P131 of Fab 3A	8.06	2.36

In 2022, in order to reduce the emission of particulate pollutants in the entire fab, the particulate pollutants generated by process equipment of Fab 3A were collected and processed in the air pollution control equipment, and a dust removal tower was added to reduce the emissions through atomized water washing and collision interception. After completion in 2023, a third party verified that particulate pollutants was reduced by 77%.

Air pollutant	Before improvement	After improvement
Total suspended particulate matter from emission pipe P106 of Fab 3A (mg/m <sup>3</sup> )	79	18

### Strengthening VOCs monitoring

To effectively monitor VOCs emission, Nanya not only monitors VOCs emission pipelines, but also installs monitoring equipment in acidic/alkaline exhaust gas emission pipelines, in order to ensure that air pollution control equipment can maintain optimal operation.

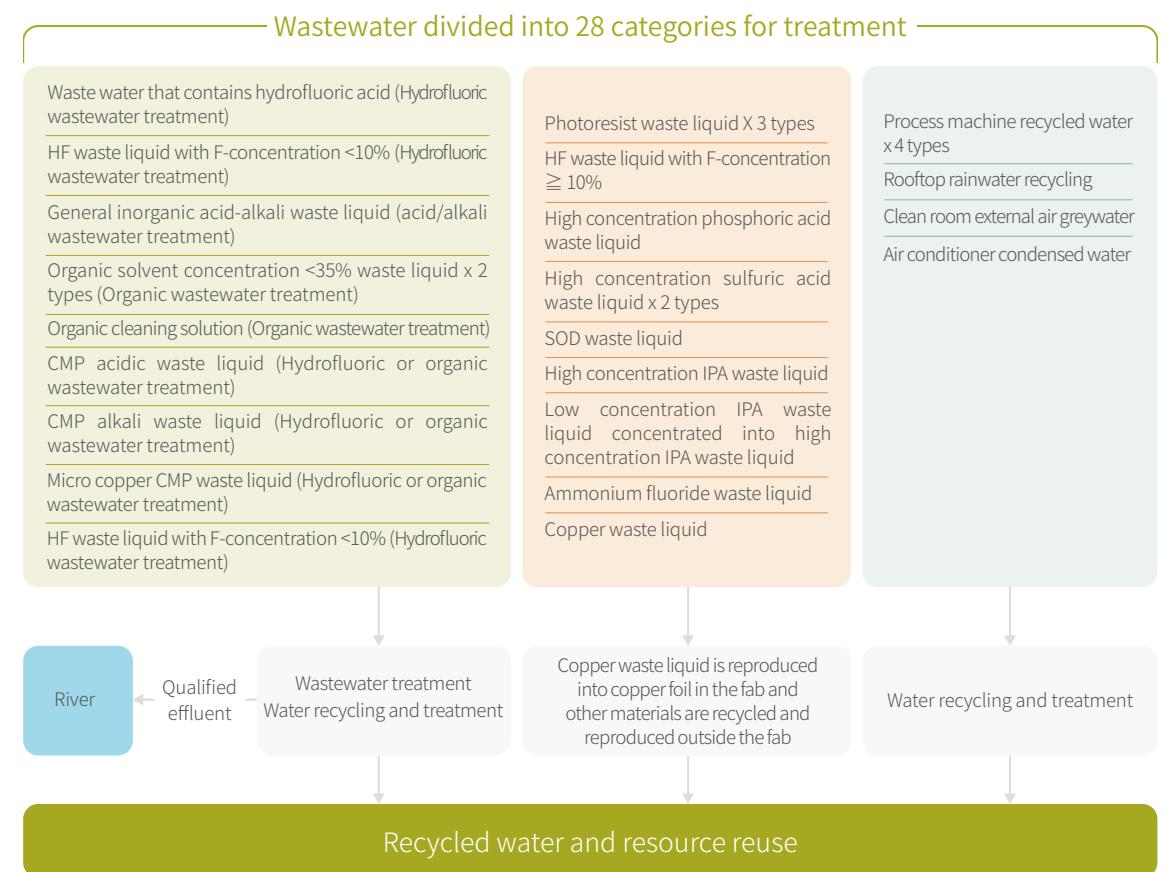
## Water Pollution Control

All wastewater generated by Nanya is collected according to property classification and channeled into proper wastewater equipment for treatment. Nanya commissions a third party to monitor and survey surrounding ecology, hydrology, and air quality. Survey results are reported to the Environmental Quality Supervision Committee. Nanya learns about issues that community residents are concerned about through the Environmental Quality Supervision Committee, and includes the issues in its periodic evaluation of ISO 14001 Management Systems. To ensure that the water quality of effluent is normal and eliminate concerns residents may have about effluents from Nanya, we have established an effluent water quality real-time monitoring system that is linked to the Environmental Protection Bureau, jointly monitoring the water quality of effluents in real time.

After water quality meets discharge standards, 100% of wastewater is discharged into Dake River after treatment and meets standards for Category D water bodies, which may be used for irrigation, Class 2 industrial water, and environmental conservation. The water eventually flows into Tamsui River and into the ocean. To avoid environmental pollution and ecological impacts owing to abnormal quality of wastewater, we have spared no effort to prevent and control water pollution, gradually upgrading and investing in wastewater treatment facilities. The in-plant wastewater treatment is carried out in 28 different pipelines. The wastewater is mainly classified into organic wastewater, general acidic and alkaline wastewater, hydrofluoric wastewater, high-concentration liquid waste, and secondary water that can be directly recycled, treated, and reused. In relation to wastewater treatment, wastewater is classified and treated according to different properties. Other than following statutory standards, we also reuse recyclable wastewater that is treated by the recovery system to reduce the discharge amount of wastewater. Furthermore, the plant area is reconstructed on the open space of existing plant so no massive excavation of the peripheral vegetation of the designated land has been made. Wastewater is properly treated before being discharged into the Dake River. Discharged water bodies and relevant habitat are not designated as national or international conservation areas. Investigation shows that the wastewater discharging areas do not involve in affecting the habitat of protected animals or destroying the habitat.

Total waste water discharge volume was 2,446 million liters in 2023, down 9.2% compared to 2022; wastewater discharge volume per unit capacity decreased 1.3%. Due to the phased tightening of controls on ammonia nitrogen concentration in effluent by the Ministry of Environment, a new requirement was added in 2013 that ammonia nitrogen concentration must be lower than 70mg/L; the requirement was tightened to 30mg/L in the second stage in 2015. In light of the rising awareness of regulations and environmental protection, Nanya has completed a number of improvement measures in response, including diversion control from the source of wastewater. Water discharged from machines using ammonium fluoride will be diverted and collected to prevent high-concentration ammonia nitrogen from directly entering the wastewater system. The existing final settling tank will be transformed into an aerobic nitrification tank equipped with a membrane bio-reactor (MBR) as the final treatment unit, which not only lowers the ammonia nitrogen concentration well below the regulatory standard, but also reduces the turbidity and improves the quality of effluent. The COD value of the effluent is also a focus of the competent authority. Therefore, Nanya added an IPA concentration system in 2018. Originally, the low-concentration IPA discharged from machinery would directly enter the wastewater system, resulting in excessive COD load. After adding the IPA concentration system, the low-concentration IPA wastewater is collected and concentrated using high-temperature negative pressure. High-concentration IPA is then cleared by a contractor, in order to reduce the COD concentration of raw water and effectively control the quality of effluent.

Future production capacity expansion plans will be accompanied by an increase in pollutants, and we will consider how to lower the concentration of pollutant emissions. In 2018, Nanya invested NT\$430 million to build a new hydrofluoric wastewater COD and total nitrogen treatment system. The system was completed and began operation in 2023, and stably maintains ammonia nitrogen emissions below 10 mg/L, COD emissions can be further reduced to below 30 mg/L, significantly reducing environmental load. After a number of improvements, in the ammonia nitrogen test results in 2023, the lowest was 0.19 mg/L, the highest was 0.53 mg/L, and the average was 0.4mg/L. In the COD test results, the lowest was 13.2mg/L, the highest was 24.6mg/L, and the average was 18.4mg/L, all far better than the regulatory standards.



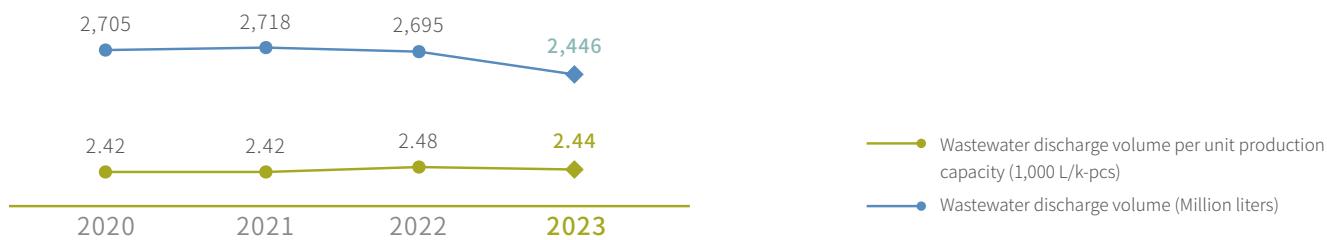
## Types and volume of wastewater discharged by Nanya

Total waste water discharge (Million liters)		2020	2021	2022	2023
Divided based on Destination <sup>Note1</sup>	Fresh surface water	2,705	2,718	2,695	2,446
	Groundwater, seawater, third party water <sup>2</sup> , third party water <sup>3</sup> supplied to other organizations <sup>Note2</sup>	0	0	0	0
Total water discharge	Freshwater (Total dissolved solids ≤ 1,000 mg/L)	2,705	2,718	2,695	2,446
	Other water (Total dissolved solids > 1,000 mg/L)	0	0	0	0
Divided based on wastewater treatment level	Not treated	0	0	0	0
	Treated inside factory to comply with effluent standards of the Ministry of Environment	2,705	2,718	2,695	2,446

Note 1: The destination of wastewater discharged by Nanya is Dake River (surface water), which is not located in an area with water stress.

Note 2: City government water supplier and sewage treatment plant, public and private utilities companies, and other organizations that participate in the provision, transportation, treatment, disposal, or use of water and sewage

## Run chart of wastewater discharge from 2020 to 2023



## Testing results of discharged wastewater quality in 2023

Testing items	Unit	Statutory standards	Testing results			Compliant or non-compliant with standards	
			Minimum	Mean	Maximum		
FAB 3A	pH	-	6-9	7.4	7.6	8	Compliant
	Chemical oxygen demand (COD)	mg/L	<100	13.2	18.4	24.6	Compliant
	Suspended solids (SS)	mg/L	<30	1.25	2.5	4.2	Compliant
	Fluoride ion	mg/L	<15	10.8	11.4	12.1	Compliant
	Ammonia nitrogen	mg/L	<30	0.19	0.4	0.53	Compliant

## Waste Management

### • Waste Generate Structure

Nanya's total waste volume in 2023 was 22,403 metric tons, in which 22,123 metric tons was reused, and the overall waste recycling rate reached 98.8%. All waste recycling and reuse is outsourced (no on-site reuse). In 2023, Nanya directly disposed 5,618 metric tons of waste, in which 5,342 metric tons was reused after treatment, accounting for 23.85% of the total waste volume. The amount of waste directly incinerated was 185 metric tons, accounting for 0.8% of the total waste. The amount of waste buried after solidification and directly buried was 91 metric tons, accounting for 0.4% of the total waste. The quantity of other disposals (including physical treatment, recycling, purification, and reuse) is 4 metric tons, accounting for 0.2% of the total waste.

Nanya's waste generated per unit wafer area in 2023 was 22.39 kg/kpcs 4Gb eq, an increase of 1.66% compared with 2022. Outsourced hazardous waste disposal was 16,522 metric tons, and hazardous waste generated per unit wafer area was 16.51 kg/kpcs 4Gb eq, an increase of 2.16% compared to 2022. The Company's main output is hazardous industrial waste (acidic waste liquid, including sulfuric acid, phosphoric acid, and hydrofluoric acid), 100% is processed by the contractor and recycled as other industrial raw materials. The company continues to implement measures such as waste reduction and increased recycling in a circular economy manner to reduce landfill waste.

The general industrial wastes and the hazardous industrial wastes of the Nanya are all managed by the Output Department with respect to storage, clearance, detections, and reduction promotions. Training is organized for operators each year to ensure that personnel are familiar with regulations and to verify their compliance. In addition, the Company periodically audits waste contractors to see whether the contractors follow the regulations of waste disposal to handle the waste clearance, in order to verify the lawfulness of the contractors, ensure that all wastes are properly treated or recycled, and prevent impacting the environment again. Nanya did not ship any hazardous waste to other countries in 2014-2023, and output of all hazardous industrial waste was outsourced to certified domestic waste disposal contractors; a total 48 certified domestic waste disposal contractors was commissioned in 2023.

## Waste Generated in 2023

	Generated	Diverted from Disposal	Directed to Disposal
<b>Hazardous waste(Unit: Ton)</b>			
Hazardous waste	14,285	13,477	808
Acidic waste liquid	2,211 <sup>Note 2</sup>	1	2,211
Waste solvent	11	0	11
Container	4	0	4
Electronic waste	11	0	11
Other	16,522	13,478	3,045
<b>General waste</b>			
Sludge	5,115	3,187	1,928
Packaging materials	176	5	171
Consumer waste generated by employees	241	0	241
Waste mixed metals	9	1	8
Waste mixed plastics	138	0	138
Other	203	116	87
<b>Total</b>	<b>22,403</b>	<b>16,786<sup>Note 2</sup></b>	<b>5,618</b>

Note 1: In coordination with the update to the GRI content index, we compiled more detailed statistics and recategorized waste, which resulted in different recycling percentages compared with previous years, but the total tons of waste was not changed.

Note 2: "The slight difference between the total output and the sum of the individual outputs is due to rounding."

## Waste Directed to Disposal in 2023

	In the plant	Out of plant	Total
<b>Hazardous waste(Unit: Ton)</b>			
Incineration (with energy recovery)	0	3,019	3,019
Incineration (without energy recovery)	0	11	11
Landfilling	0	10	10
Other disposal operations <sup>Note 1</sup>	0	5	5
<b>Subtotal</b>	<b>0</b>	<b>3,045<sup>Note 2</sup></b>	<b>3,045<sup>Note 2</sup></b>
<b>General waste</b>			
Incineration (with energy recovery)	0	2,318	2,318
Incineration (without energy recovery)	0	175	175
Landfilling	0	80	80
Other disposal operations <sup>Note 3</sup>	0	0	0
<b>Subtotal</b>	<b>0</b>	<b>2,573</b>	<b>2,573</b>
<b>Total</b>			
	<b>0</b>	<b>5618</b>	<b>5618</b>

Note 1: Other disposal methods for hazardous waste include physical treatment and chemical treatment.

Note 2: "The slight difference between the total output and the sum of the individual outputs is due to rounding."

Note 3: Other disposal methods for general waste refers to physical treatment (broken down and sorted).

## Waste Diverted from Disposal in 2023

	In the plant	Out of plant	Total
<b>Hazardous waste(Unit: Ton)</b>			
Preparation for reuse	0	0	0
Recycling	0	13,477	13,477
Other Recovery Operations	0	1	1
<b>Subtotal</b>	<b>0</b>	<b>13,478<sup>Note 1</sup></b>	<b>13,478<sup>Note 1</sup></b>
<b>General waste</b>			
Preparation for reuse	0	5	5
Recycling	0	0	0
Other Recovery Operations	0	3,303	3,303
<b>Subtotal</b>	<b>0</b>	<b>3,308</b>	<b>3,308</b>
<b>Total</b>			
	<b>0</b>	<b>16,786<sup>Note 1</sup></b>	<b>16,786<sup>Note 1</sup></b>

Note 1: "The slight difference between the total output and the sum of the individual outputs is due to rounding."



High-risk items are listed as the direction of management plans each year by assessing the significance of environmental impacts using ISO 14001 Environmental Management System. Items that can be carried out are listed in implementation plans for the current year after comprehensive assessment. Nanya reduces waste from the source and streamlined production processes to reduce the use of raw materials and further achieve waste reduction. Nanya completed 8 improvement proposals regarding the use of raw materials in 2023, including improvements to reduce process time, extend use cycle, and reduce process consumption. The most significant reduction benefit is that the amount of sulfuric acid and hydrogen peroxide used for the wet etching area was effectively reduced by reducing the acid cleaning time, reducing the amount of sulfuric acid used each month by 7,650 liters and hydrogen peroxide by 3,825 liters.

### Assessment results of waste impact

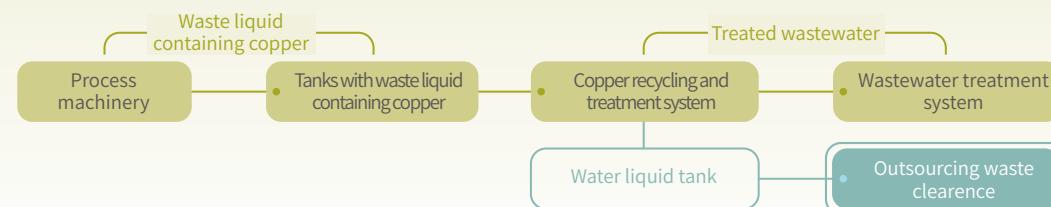
	Upstream	Nanya	Downstream
Impact sources	1. Used large numbers of small gas cylinders, resulting in more residual gases.	1. Sources of raw materials and related materials contained hazardous substances. 2. Used large numbers of acidic and alkaline chemicals. 3. Used monitor wafers in large quantities.	1. Products required many packaging materials. 2. Products contained hazardous substances.
Potential impact	<ul style="list-style-type: none"> <li>Waste of resources: Residual gas volume.</li> <li>Increased carbon emissions: The need for more frequent transportation increases carbon emissions inside and outside the fab.</li> </ul>	<ul style="list-style-type: none"> <li>Violations of international regulations and customer specifications will result in returns and liquidated damages. This might cause hazardous substances to flow along with the waste and cause soil or wastewater pollution.</li> <li>A large amount of waste is generated, there are limited sites and capacity for disposal, and the derived waste needs to be buried after treatment or recycling.</li> </ul>	<ul style="list-style-type: none"> <li>Solid waste pollution: Packaging waste such as EPE cushioning materials and paper boxes may cause solid waste pollution if not properly treated.</li> <li>Waste of resources: The large amount of packaging waste may cause a waste of resources, because some packaging materials can be recycled and reused. It will be a waste of resources if it is discarded as waste.</li> </ul>
Mitigation measures	Replaced small gas cylinders with large cylinders to reduce residual gases and numbers of cylinders.	<ul style="list-style-type: none"> <li>Through the establishment of Hazardous Substance Free (HSF) management system of materials, we ensured that the produced wafers, rear-end IC packaging, and DIMM module products would conform to the international regulations and related specifications of clients towards HSF management.</li> <li>a. Completed 24 raw material consumption improvement proposals.</li> <li>b. Recycled wastes in the plant, for example, copper sulfate waste liquid was directly converted to copper foil for recycling.</li> <li>c. Acidic wastes were outsourced for recycling, such as sulfuric acid and phosphoric acid.</li> <li>d. Dummy wafers were recycled for 8-11 times.</li> </ul>	<ul style="list-style-type: none"> <li>Clients were encouraged to recycle packaging materials for Nanya to reuse.</li> <li>Waste electronic equipment had to conform to the EU's environmental protection directives, including WEEE, RoHS, and EuP.</li> </ul>

## 01 Waste Reduction Technology

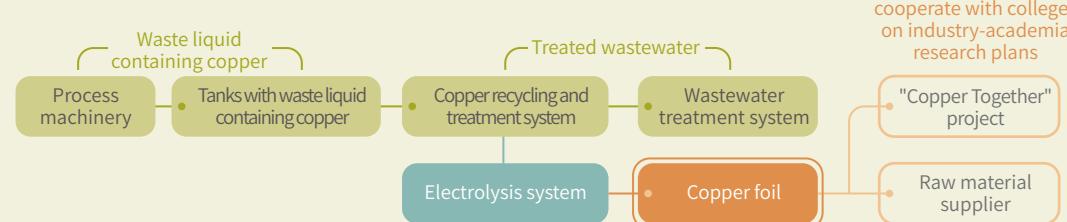
### Copper Waste Liquid Electrolysis Regeneration System

Nanya invested NT\$8.19 million to build a copper waste liquid electrolysis regeneration system, which uses resin adsorption and regeneration to produce high-concentration copper sulfate waste liquid, which is electrolyzed to produce copper foil for recycling. Nanya worked with Ming Chi University of Technology and Chuang Ching-Tai, a local artist of New Taipei City, through the "Copper Together" project, and remade waste copper foil into art works, which improved communication with stakeholders. Nanya also produced the waste copper foil into industrial-grade raw materials for reuse, achieving resource circulation. A total of 500 kg of copper foil was produced in 2023.

#### ◆ Original flowchart for treatment of waste liquid containing copper



#### ◆ Utilizing regeneration technology flowchart for treatment of waste liquid containing copper



[Nanya's Circular Economy - Copper-Containing Liquid Treatment and Recycling Video](#)

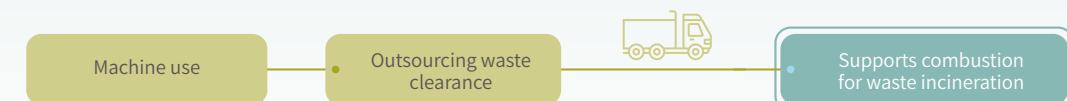
## 02 Resource Circulation

### Isopropanol Recycling System

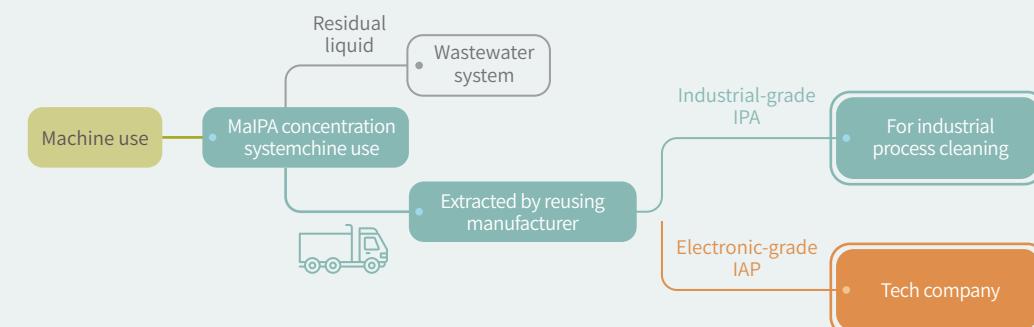
Nanya invested NT\$20 million in 2017 to introduce an isopropanol recycling system, which increases the concentration of isopropanol discharged from the process, effectively reducing the clearance amount (reducing 130 trips/month and saving NT\$21,000 thousand/month in waste clearance costs). Wastewater containing isopropanol that cannot be concentrated is used as the carbon source required for ammonia nitrogen wastewater treatment, replacing purchased methanol.

Nanya adheres to the spirit of corporate sustainability by actively minimizing waste generated and maximizing resource recycling. This project won the Silver Award in the Resource Circulation Division of the 2023 Outstanding Enterprises in Resource Circulation of the Ministry of Environment.

#### ◆ Original flowchart for treatment of waste liquid containing isopropanol



#### ◆ Optimized flowchart for treatment of waste liquid containing isopropanol



## Environmental Costs and Benefits

Nanya introduced the environmental accounting system in 2008 and the environment benefit accounting system in 2009, which was officially implemented in 2010. The introduction of the environmental accounting system made it possible to access information on the environmental expenditures, assess the benefits of the expenses, and provide the stakeholders with concrete and accurate environmental protection acts. Statistics are compiled for each category of environmental protection expenditures according to the rules established by the Ministry of Environment, and are used for internal management, so that the public will understand the environmental protection efforts of enterprises. According to the consolidated statistics, the environment capital expenditure in 2023 was NT\$124,328 thousand, and the environmental expense was approximately NT\$741,346 thousand, totaling NT\$865,674 thousand. Environmental expenditures accounted for 2.90% of our 2023 consolidated revenue of NT\$29.892 billion.

### Performance of promoting the ISO 14001 management solutions over the years (Thousand NTD)

Year	2020	2021	2022	2023
Energy (electricity) conservation program	52,397	18,166	11,680	16,278
Waste reduction program	234	3,759	0	0
Program of reducing consumption of process raw materials	6,865	4,973	8,233	4145
Substantive benefits of industrial waste recycling	9,564	5,118	13,195	13014
Electricity fees saved owing to low power consumption and advanced processes	888,574	969,353	1,081,896	1,568,178
Total benefits	957,634	1,001,369	1,117,026	1,601,615
Records of violating environmental protection regulations	0	0	0	0
Amount of fines for violation of environmental laws and regulations	0	0	0	0
Fines for violation of environmental laws and regulations not yet paid	0	0	0	0

### Environmental accounting expenses

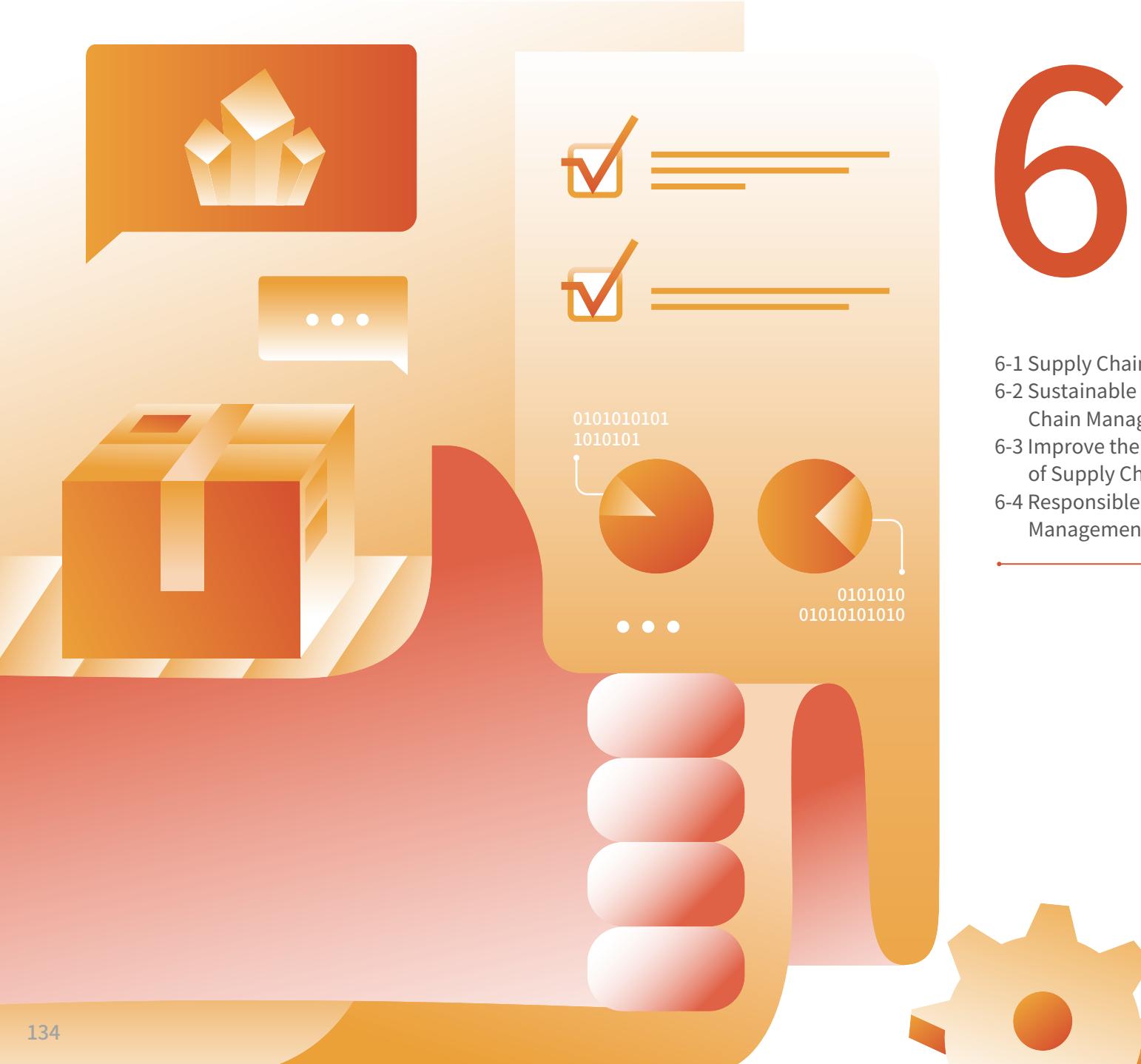
Year	2020	2021	2022	2023
Environmental capital expenditures	154,289	151,394	498,249	124,328
Environmental expenses	667,850	722,020	722,904	741,346
Total shares	822,139	873,414	1,221,153	865,674
Environmental expenses/Percentage of revenue (%)	1.35	1.43	2.14	2.90

### Environmental accounting expenditures in 2023(Thousands NTD)

Categories of costs	Description	Environmental expenses	Environmental capital expenditures
Operating costs	Air pollution control costs: costs of air pollution, water pollution, and other types of pollution control	590,016	124,328
	Global environmental protection expenses 1. expenses for climate change prevention 2. other expenses related to global environmental protection	27,715	0
	Resource and energy conservation and recycling expenses 1. enhance the efficiency of resources utilization 2. costs of waste reduction, recycling, and reprocessing 3. energy conservation expenses	108,812	0
Related costs from upstream and downstream of suppliers and customers	1. Green procurement 2. expenses incurred in providing products for the sake of environmental protection	126	0
Management costs	1. costs of personnel environmental training and education 2. expenses incurred in acquiring external verification 3. expenses incurred in measuring environmental impacts 4. Other	14,129	0
R&D costs	expenses incurred in researching and developing products because of environmental protection	0	0
Social activity costs	expenses incurred in improving the environment such as nature protection, afforestation, and landscaping the environment	301	0
Environmental taxation and fees	1. expenses incurred by air pollution examination and certificate expenses for pollution prevention and control	247	0
	Total shares	741,346	124,328
	Total	865,674	

## Internal management system audit records in the last four years





# 6 Responsible Procurement

## A Promoter of Shared Value

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Chain Management

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of Supply Chains

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Suppliers have always been Nanya Technology Corporation's most important business partners. We aim to enhance cooperation to create greater value and share the value and benefits of cooperation and create a sustainable future.

100%

SAQ completion rate of key raw material suppliers

97.05 million

The cumulative amount of refunds to migrant workers of contractors as of 2023 was NT\$97.05 million to 3,781 people.

203 contractors

203 RMI-approved smelters identified in supply chain survey



# Strategy and Performance of Material Topics

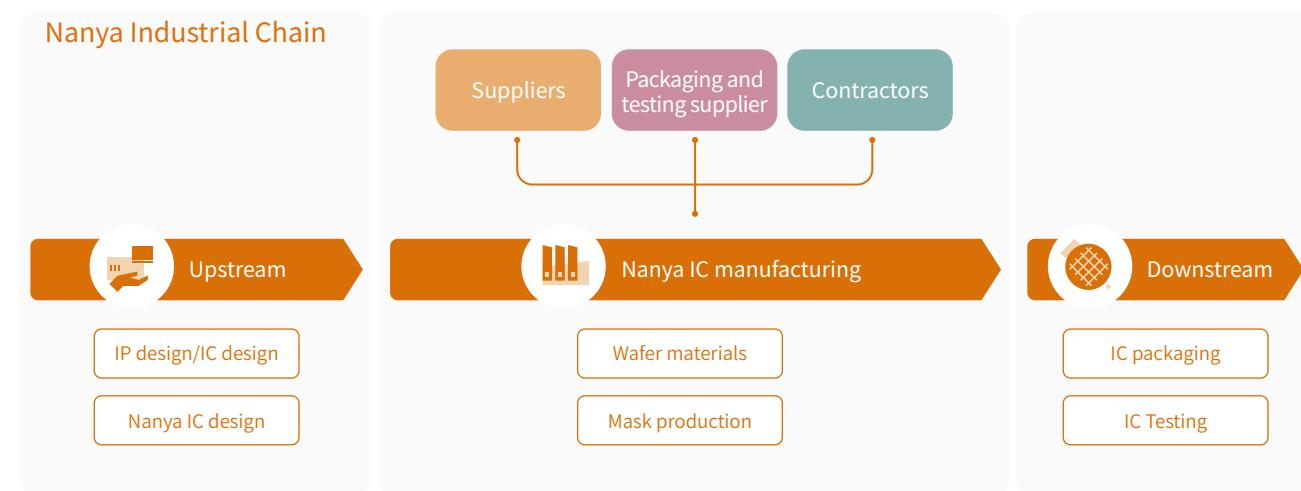
Strategy of Material Topics	2023 Goals	Performance and Goal Achievement	2024 Goals
<b>Sustainable Supply Chain Management</b>	Use 100% conflict-free minerals and responsibly procured minerals	◆ Achieved 100%	Use conflict-free minerals and responsibly procured minerals: 100%
Conflict-free minerals and responsible mineral procurement management No conflict minerals have been used in any of Nanya's products	Completion of SAQ by significant suppliers: 100%	◆ Achieved 100%	Completion of the self-evaluation questionnaire by significant suppliers: 100%
Supply chain risk management	100% completion rate of deficiency improvements by suppliers with high sustainability risk in audits	◆ Achieved 100%	Completion rate of deficiency improvements by suppliers with high sustainability risk in audits 100%
Implement regular "quality, delivery, service, cost, technology, and sustainable management" evaluations for suppliers	100% of suppliers signing Supplier Code of Conduct	◆ Achieved 100%	100% of suppliers signing Supplier Code of Conduct
	100% completion of audits and guidance for significant suppliers	◆ Achieved 100%	100% completion of audits and guidance for significant suppliers
	Implement at least 2 supplier sustainability guidance projects	◆ Achieved 2 projects	Implement at least 2 supplier sustainability guidance projects

◆ Exceed ◆ Achieved ◆ Partially Achieved

## 6.1 Supply Chain Overview

### Nanya Industrial Chain

IC industry (including DRAM) is categorized into upstream IC design, mask making/wafer material, midstream IC production, and downstream IC packaging and testing. Nanya is committed to the R&D, design, manufacturing, and sales of IC products, and is positioned in the upstream IC design and midstream IC production in the industrial supply chain. To improve the efficiency of customer service and effectively build closer relationships with customers in the upstream product design and testing and verification stages, the head office provides customers' technical solutions in various regions, including Taiwan, mainland China, Southeast Asia, Europe, America, Japan, and South Korea. In response to customer's requests, we irregularly exchange technologies with customers, provide technical support, and assist in solving the problems faced by the customer's engineering staff in design and testing. The Company continuously communicates with customers in the midstream production and sales stages and report weekly to the head office on the feedback of customers' future demand forecasts. The head office aggregates the demand forecasts around the globe and converts them into production plans, which are adjusting weekly to meet customers' needs and maximize the benefits. In the meantime, we cooperate with downstream contractors to form a complete industry chain.



## Form of Supply Chain

Nanya's suppliers can be divided into "suppliers" and "contractors" based on the manufacturing process; suppliers can be further divided into production materials suppliers and non-production materials suppliers. "Production materials" suppliers are the Company's main suppliers, and include raw materials suppliers and professional spare parts suppliers (suppliers of spare parts for production machinery in clean rooms and related packaging materials).

To effectively manage suppliers and allocate resources, Nanya considers the "location of the supplier," "product of the supplier," "operations of the supplier," and "sustainable development" to screen significant suppliers (including tier 1 raw materials suppliers, professional spare parts suppliers, and high risk suppliers).

Factors that are considered are briefly described below:

- **Region of the supplier:** Geopolitical risk and local regulations
- **Products of the supplier:** Raw material attributes and risks of components
- **Supplier operations:** Establishment of business continuity management system for the industry
- **Sustainability governance:** Evaluate environmental management, labor rights, and business ethics

### Distribution of suppliers (raw materials and professional spare parts suppliers)

Year	2020	›	2021	›	2022	›	2023
Asia	280		266		273		270
Americas	93		102		96		81
Europe	41		32		28		27
Oceania	31		31		18		13
Total	445		431		415		391

\* The distribution of suppliers calculation method is based on the number of actual shipping locations.

### Supplier category and Non-tier 1 significant suppliers

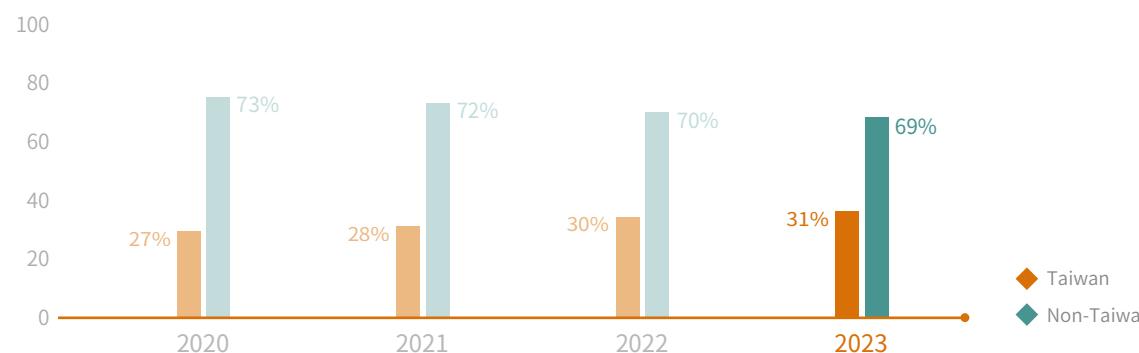
Raw materials	Year	2020	›	2021	›	2022	›	2023
	Number of tier 1 suppliers	82		80		80		79
	Number of tier 1 suppliers of concern	82		80		80		79
	Percentage accounted for by tier 1 suppliers of concern (%)	100%		100%		100%		100%
	Percentage of procurement amount accounted for by tier 1 suppliers of concern (%)	100%		100%		100%		100%
Professional spare parts	Number of tier 1 suppliers	222		215		202		194
	Number of tier 1 suppliers of concern	11		11		12		10
	Percentage accounted for by tier 1 suppliers of concern (%)	5%		5%		6%		5%
	Percentage of procurement amount accounted for by tier 1 suppliers of concern (%)	2%		9%		4%		6%
		Number of tier 1 suppliers	304		295		282	273
		Number of tier 1 significant suppliers	93		91		92	89
		Percentage of procurement amount accounted for by tier 1 significant suppliers (%)	68		72		71	77
		*Number of non-tier 1 significant suppliers	82		80		80	79

\*Non-tier 1 suppliers refers to tier 1 raw materials suppliers

## Local Procurement

Nanya prioritizes local procurement to improve service efficiency, shorten delivery time, and reduce the impact on the environment, and the percentage of local procurements has continued to rise in the past four years. However, as semiconductor equipment and technologies mostly involve foreign production or international collaboration, most of the materials used in the semiconductor industry are still produced in foreign countries. This has led to larger foreign procurement compared to domestic procurement. Nanya will continue to cooperate with local suppliers to expand procurement and employment opportunities in Taiwan, driving economic development and creating greater value in partnerships with suppliers.

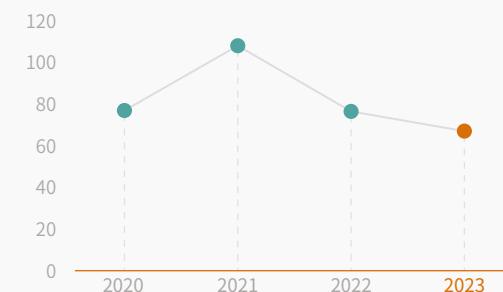
Local procurement amount or raw materials in 2020-2023



### Green procurement

In response to global environmental protection issues, Nanya continues to use energy-saving, low-pollution, reused, recyclable, green building materials, and other green and eco-friendly products and equipment, and exerts its influence to encourage supply chain manufacturers to follow and improve the performance of green procurement. The green procurement amount in 2023 was NT\$7,837,000. Nanya also continues to review the feasibility of replacing purchased items with eco-friendly products.

### Total green procurement amount (Million NTD)



## 6.2 Sustainable Supply Chain Management

Nanya firmly believes that the sustainable growth of its supply chain is closely related to its sustainable development, and is therefore actively involved in the management of related resources and cooperates with suppliers to drive the supply chain's sustainable growth and achieve shared value for mutual benefit.

### Sustainable Supply Chain Management Strategy

- Development strategies and management strategies

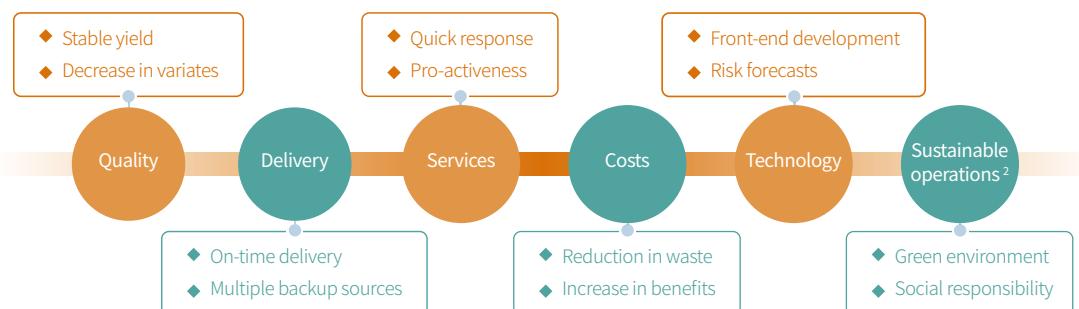
Nanya's sustainable supplier development strategies

- Sustainable supplier risk management**  
 Implement risk assessment through self-evaluation questionnaires for suppliers, and strengthen supplier risk management through audits and improvement tracking
- Supplier cooperation and exchanges**  
 Periodically organize supplier conferences and supplier evaluations on the basis of cooperation and mutual aid, and provide guidance for suppliers to increase social, economic, and environmental benefits, in order to achieve sustainable development of suppliers.
- Improve the sustainability of suppliers**  
 Nanya pays attention to environmental and social sustainability issues while pursuing economic benefits, and continues to work with suppliers in projects related to sustainability
- Responsible Mineral Procurement**  
 Nanya is committed to a responsible procurement management strategy for the ban on conflict minerals to satisfy current and future market, legal, and regulatory expectations.

## Sustainable Supplier Management Strategy

Nanya's selection criteria for direct material suppliers not only require passing third-party verification of ISO 9001 and ISO 14001, but also rigorous evaluation and review through an electronic supplier evaluation management system based on six aspects: quality, delivery, service, cost, technology, and sustainability. The score for sustainable management indicators (sustainable operations) accounts for 19% to ensure compliance with the Company's requirements for sustainable supplier management. After becoming the Company's supplier, the implementation of supplier sustainability management is verified through audits.

### Six Strategies for Supplier Management<sup>1</sup>



Note 1: The five most important supplier management strategies are: "quality, delivery, service, technology, and sustainable development"

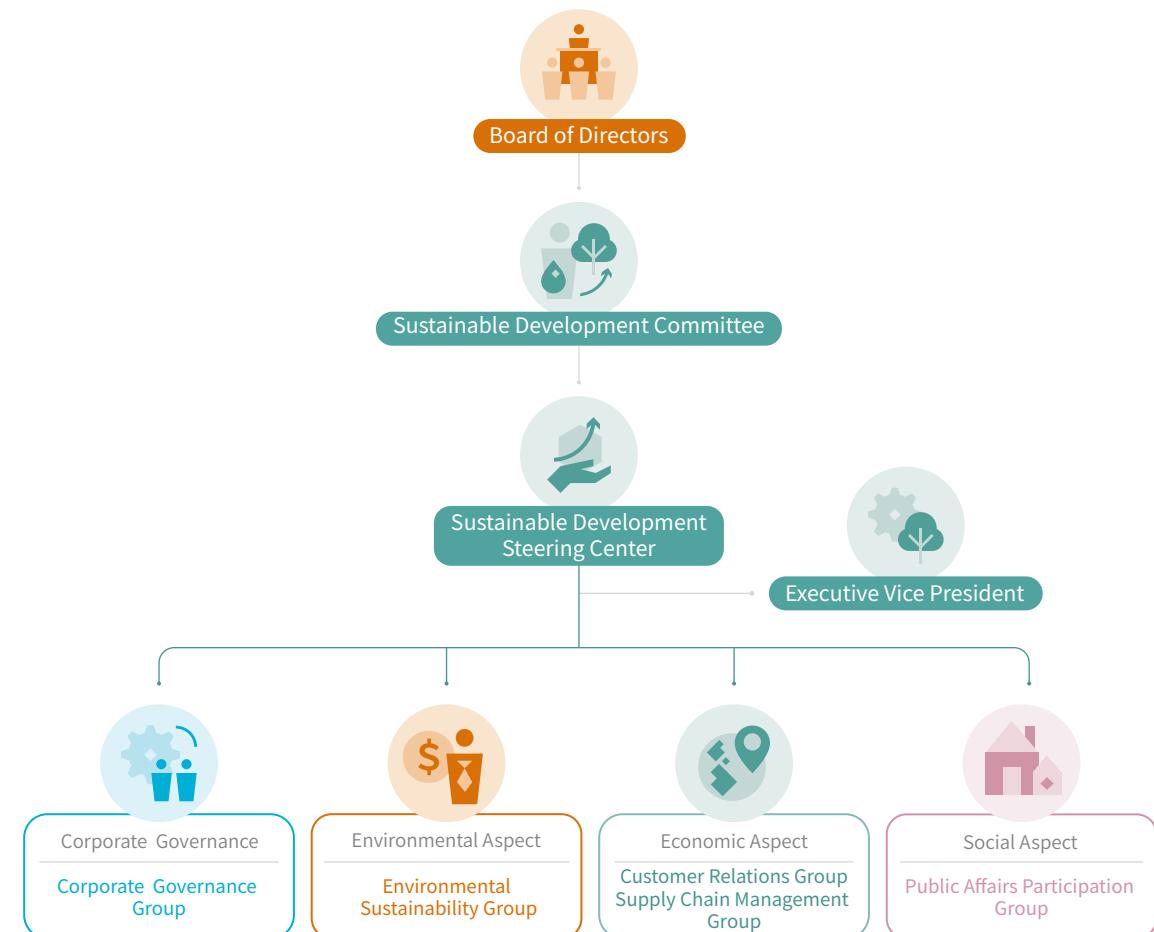
Note 2: Sustainable operations:
 

- Green environment evaluation items include the ISO 14001 certification, energy and resource conservation, reduction in greenhouse gas emissions, and waste recycling rate.
- Corporate social responsibility evaluation items include compliance with local labor laws and regulations.

### Supply Chain Management Organization

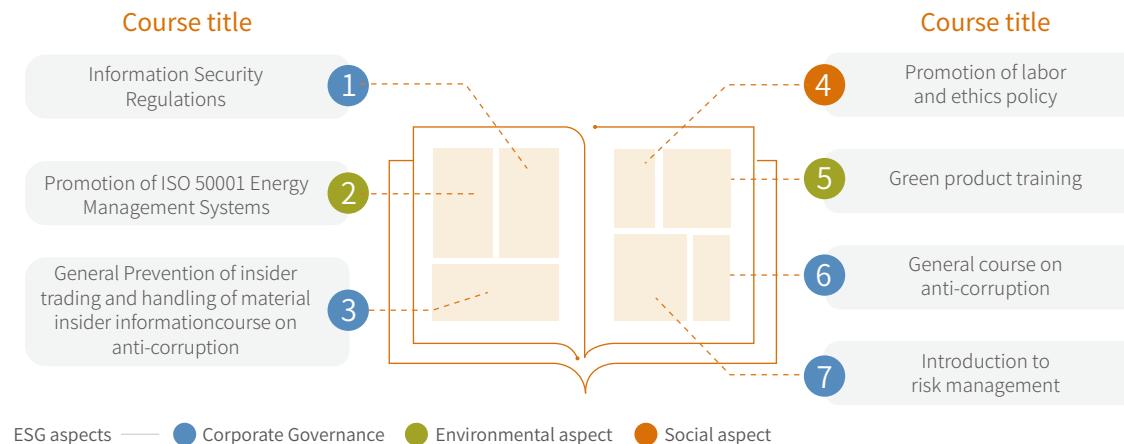
Implementing sustainable supply chain management is an important tasks of Nanya's sustainable operations. To this end, Nanya established the Sustainable Development Committee (formed by the chairman, 4 independent directors, and 2 executive directors) as a functional committee under the Board of Directors. Nanya further established the Sustainable Development Promotion Center and Sustainable Development Management Group as executive units under the committee. We plan and implement sustainable development affairs for each aspect of the four major management directions: governance, economic, social, and environmental. Departments then formed the Public Affairs Working Group, Corporate Governance Working Group, Customer Relations Working Group, Supply Chain Management Working Group, and Environmental Sustainability Working Group under these four major aspects to implement sustainable development-related projects. Nanya regularly reports the implementation status and results of sustainability-related matters to the Sustainability Development Committee every year, and then the Sustainability Development Committee will further report to the Board of Directors.

The Supply Chain Management Working Group reports sustainable supply chain matters and progress to the Sustainability Development Promotion Center, and the Chief Sustainability Officer reports the results to the Sustainability Development Committee twice a year. The Sustainability Development Committee further reports to the Board of Directors, and the Board of Directors makes the final decision on implementation directions that need to be optimized or improved, ensuring that the directions are consistent with the Company's sustainability vision and policies.



## • Internal Personnel Training

Nanya provides the "Sustainable Supply Chain Management Process" training course to all procurement personnel every year to improve their understanding of sustainable supply chains. Contents of the course include supplier sustainability risk assessment standards and processes, green procurement, etc., so that procurement personnel can incorporate the concept of sustainability into daily operations. Nanya offered 7 sustainability-related courses with a total of 5 hours and 23,695 participants. The total number of hours was 118,475, in 2023, so that employees carry out routine operations or make decisions that are aligned with the Company's supply chain sustainability management direction.



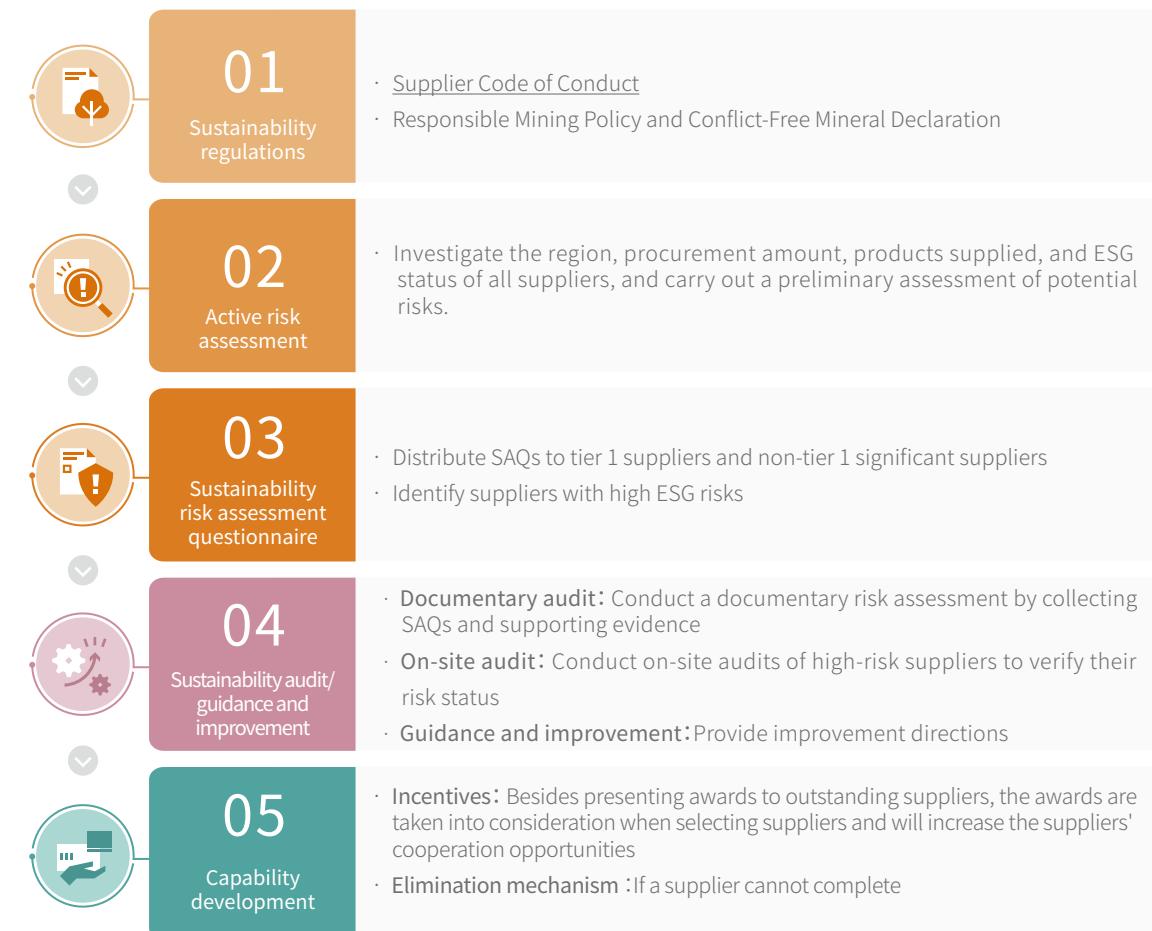
In addition, for sustainable supply chain projects to offset the carbon footprint and implement carbon reduction, all personnel participating in the projects participated in the carbon inventory management course on November 3, 2023. Contents of the course include carbon management practices, carbon platform operations and implementation and key points of GHG inspection, so that relevant personnel are familiar with the knowledge and implementation steps of carbon inventory, and incorporate the contents into daily operations. This will facilitate project implementation. The total training hours per person was 6 hours.

## • Supplier Education and Training

Nanya organized the "2023 Nanya Technology Corporation Sustainable Supply Chain Training and Conference" in May and September 2023 to let suppliers better understand its sustainable supply chain management process and sustainability vision. A total of 55 people from 37 local raw materials suppliers in Taiwan participated in the conference, which shared Nanya's water resources management, environmental protection regulations and training for suppliers, and the goals and contents of supply chain information security environment and human rights sustainability projects. We aim to work with suppliers in jointly creating sustainability value and a sustainable environment.

## Sustainable Supply Chain Management Process

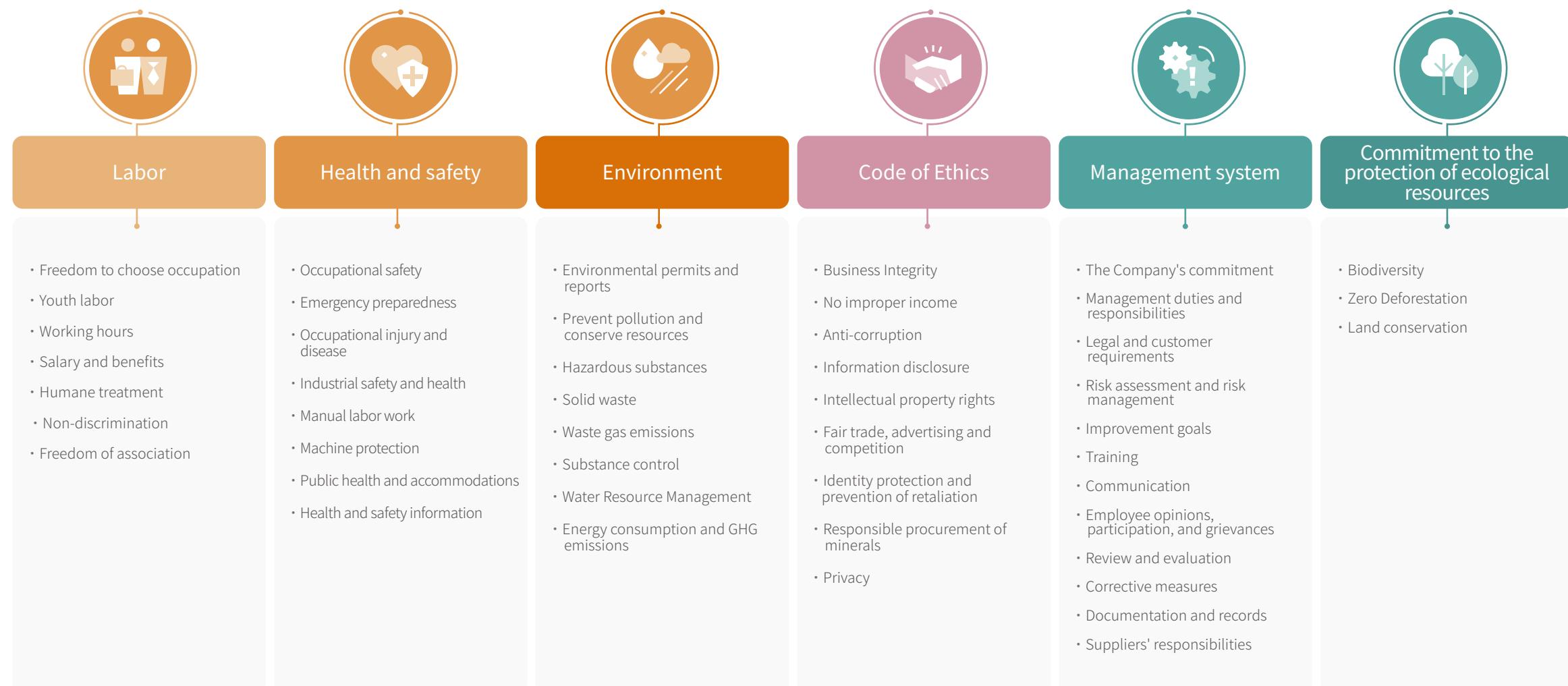
Nanya has established a complete supply chain management process, ensuring that suppliers meet our standards and requirements through a cycle of five major processes: sustainability specifications, active risk assessment, sustainability risk assessment questionnaire, sustainability audit/guidance and improvement, and supplier capability development. We understand the status of supply chain risks through the risk investigation and audit mechanism, and guide suppliers to make improvements and build capabilities, so as to gradually improve the supply chain's overall sustainability performance.



## • Sustainability regulations

Nanya established the Supplier Code of Conduct for suppliers to understand and gradually implement corporate sustainability. The Company provides suppliers with training and requires suppliers to sign the Supplier Code of Conduct every year. In 2023, a total of 352 suppliers (tier 1 suppliers and non-tier 1 significant suppliers) have completed signing with a signing rate of 100% and a training coverage rate of 100%. At the same time, suppliers related to conflict minerals are also required to sign the Responsible Mining Policy and Conflict-Free Mineral Declaration with a 100% signing rate.

### Nanya Supplier Code of Conduct



- Risk assessment

## 01 Active risk assessment

Nanya inspects and investigates the basic situation of all suppliers, including potential impacts on the environment, society, and governance, business intensity, region, industry, and product characteristics. We hope to discover suppliers with potential risks for management, and understand and reduce overall supply chain risks.

\*Region of the supplier: Assess if the region has any conflict minerals, natural disaster risks, and human rights risks

\*Product categories supplied: Assess if the materials used to produce the product contain any hazardous substances (e.g., RoHS/PFOS/PFAS, etc.) and whether there are alternative materials

\*Supply operations: Assess if the supplier has any operational risks and emergency response plans

	<b>Environment</b>	Failed to identify and manage hazardous substances according to environmental protection regulations
	<b>Society</b>	Failed to identify and assess child labor-related risks according to safety and health regulations
	<b>Governance</b>	Failed to identify risks related to corruption and material shortages
	<b>Business intensity</b>	Supply ability of different supplier categories (raw materials, factory services, and outsourcing) and main suppliers of key raw materials (e.g. whether production capacity or manpower is sufficient) based on the purchase amount
	<b>Region/ Country</b>	Examine and investigate the regions where suppliers are located to assess whether they are affected by conflict minerals or are in high-risk areas, areas prone to natural disasters, or have human rights risks.
	<b>Industry attributes</b>	For suppliers in different industries, we identify industry-specific risks based on risks of concern (e.g., the raw material supply chain assesses the risk of system interruption/contractors assess the risk of hazardous substance management, child labor, and migrant workers)
	<b>Product characteristics</b>	Key materials containing heavy metals and hazardous substances are screened based on material attributes

## 02 Sustainability risk assessment questionnaire

We distribute sustainability risk assessment questionnaires to tier 1 suppliers and non-tier 1 significant suppliers, and require suppliers to conduct self-assessments and provide supporting evidence, such as management system certificates, in order to ensure the implementation of suppliers' sustainability actions. The results of the suppliers' SAQs are used as the basis of sustainability risk management. Contents of the questionnaire include potential impacts on three major aspects: governance/social/environmental, such as anti-corruption, ethical or legal misconduct, and disciplinary actions in the governance aspect; potential impacts on the social aspect include labor practices/human rights standards/business ethics/health and safety; potential impacts on the environmental aspect include environmental management and GHG.

In 2023, we completed a sustainability risk assessment for all tier 1 suppliers (including tier 1 significant suppliers), distributed and collected questionnaires from all 352 suppliers, and screened the 18 suppliers in the bottom 5% lowest scores (high-risk suppliers). We completed documentary and on-site audits of high-risk suppliers in December.

### Supplier sustainability survey

Year	2020	2021	2022	2023
Tier 1 suppliers	Number of suppliers surveyed	304	295	282
	Response rate (%)	100%	100%	100%
Tier 1 significant suppliers	Number of suppliers surveyed	93	91	92
	Response rate (%)	100%	100%	100%
Non-tier 1 significant suppliers	Number of suppliers surveyed	80	90	80
	Response rate (%)	100%	100%	100%

Note: Tier 1 suppliers include tier 1 significant suppliers

### Results of the Supplier Sustainability Risk Survey

Tier 1 significant suppliers	Number of high-risk suppliers	14
	Percentage of high risk suppliers (%)	15%
Non-tier 1 significant suppliers	Number of high-risk suppliers	4
	Percentage of high risk suppliers (%)	5%

Note: Tier 1 suppliers include tier 1 significant suppliers

## • Sustainability Audit

Nanya uses different forms of audits to verify the sustainability implementation status of suppliers, including documentary audits and different forms of on-site audits (two-party audits, three-party audits, and industry standards), and references it when providing guidance to suppliers. During audits, Nanya reviews the implementation status from legal and human rights perspectives, as well as related management regulations, provides suppliers with directions for improvement, engages in exchanges, and requires processes to be formulated for major deficiencies. Three months after an audit, Nanya reviews deficiencies and requires documentary evidence to be provided. In 2023, 18 high sustainability risk suppliers were audited, the coverage rate of high-risk suppliers was 100%, and 57 non-compliance items were found in the audits. High risk non-tier 1 significant suppliers, did not have any non-compliance items. Nanya provides guidance to assistance with making improvements to audit deficiencies, and all improvements have been completed. In addition, Nanya will consider commissioning an independent third party to audit suppliers that fail to complete improvements for deficiencies for three consecutive years.

### Form of sustainability audit

Implementation method	Subjects	Number of suppliers
Documentary audit	Documents are collected through the sustainability risk assessment questionnaire	Tier 1 suppliers and significant suppliers (including tier 1 and non-tier 1) 352
On-site audit - Two-party audit	Conducted by Nanya	High risk suppliers (tier 1 suppliers and significant suppliers) 18
On-site audit - Three-party audit	Conducted by an independent third party	Raw materials supplier 4
Audit based on industry standards	Audit based on RBA standards	Tier 1 suppliers and significant suppliers (including tier 1 and non-tier 1) 11

### Sustainability Audit

	2023 Goals	2023 Achievements
Number of audited suppliers in writing/on-site	100%	352
Percentage of significant suppliers audited	-	48%
Number of high-risk suppliers audited	15	18
Percentage of improvements to deficiencies completed	100%	100%
Number of suppliers eliminated	0	0

### Guidance for deficiencies found in audits

	2023	2023 Goals
Number of suppliers receiving guidance	18	15
Percentage of tier 1 significant suppliers that received guidance (%)	100%	100%

We analyze the results of supplier sustainability risk questionnaires, find high risk suppliers, conduct further audits and provide guidance based on the different attributes of suppliers, issue a CAR for deficiencies found in the audit, and require suppliers to propose improvement plans. However, major deficiencies of each industry that require improvement are sometimes limited by their upstream industry, resources, and schedule. To effectively unify the improvement schedule of suppliers, improvements to deficiencies found in the previous year are examined during annual audits. Hence, suppliers are required to complete improvement measures within two years. If a supplier cannot complete improvements within the prescribed time limit, it will be discussed by the Material Review Board (MRB). For severe cases, elimination mechanisms, such as continued communication, reduction or transfer of purchase orders, or cease cooperation, will be used to ensure that risks are effectively controlled and reduced. No suppliers were eliminated in 2023.

## Sustainability audit table of high-risk suppliers

Year	2021	2022	2023	
Numbers of audited suppliers	20	20	18	
Average audit score	88	89.97	90.45	
Number of non-compliance audit items	81	74	57	
Category and number of violations	Labor ethics	8 items involving not having work rules formulated or approved violated 16 items involving human rights or employment discrimination violated 2 items involving work hours and wages violated 4 items involving grievance mechanisms violated 4 items involving information security violated 7 items involving reward and punishment procedures violated -5 items involving moral standards -	8 items involving not having work rules formulated or approved 15 items involving not having or violating human rights rules 3 items involving not having or violating rules on work hours and wages 12 items involving not having or violating grievance mechanisms 3 items involving not having or violating information security rules 3 items involving not having or violating code of ethics 4 items involving inadequacies in the supply chain management system 1 item involving insufficient labor and ethics training frequency 1 item involving improvements required by the labor and ethics management system	Items involving not having work rules formulated or approved: 3 items Items involving not having or violating human rights rules: 10 items Items involving not having or violating rules on work hours and wages: 1 items Items involving not having or violating grievance mechanisms: 4 Items involving not having or violating information security rules: 2 items Items involving not having or violating code of ethics: 7 items Items involving inadequacies in the supply chain management system: 7 items Items involving improvements required by the labor and ethics management system: 5 items Items involving failure to establish guidance, correction, or reward and punishment systems: 2 items
		total		
		A total of 46 items		
		A total of 50 items		
		A total of 41 items		
	EHS	19 defects in labor safety operation control 2 defects in health operation control 5 defects in fire safety operation 9 defects in environmental protection operation control	11 defects in labor safety operation control 7 defects in health operation control 1 defects in fire safety operation 5 defect in environmental protection operation control	Defects in labor safety operation control: 4 items Defects in health operation control: 4 items Defects in fire safety operation: 4 items Defects in environmental protection operation control: 4 items
		total		
		A total of 35 items		
		A total of 24 items		
		A total of 16 items		

# 6.3 Improve the Sustainability of Supply Chains

In response to changes and updates to sustainability trends, Nanya will improve supplier sustainability through seminars and project guidance, which raise suppliers' awareness and ability to achieve sustainability.

## Sustainable Supply Chain Seminar

The third reading of the Climate Change Response Act was passed in January 2023. The official version of the Task Force on Nature-related Financial Disclosures (TNFD) was jointly announced by four international organizations in September the same year. The FSC requires listed companies with a capital of over NT\$10 billion to comply with the International Financial Reporting Standards (IFRS) in 2026, and disclose related information in the annual report and financial statements during annual general meetings. This shows that the implementation of sustainable development by companies has changed from optional to standard.

Nanya has issued a TCFD report since 2021, announced the biodiversity policy in 2022, and implemented the TNFD in 2023 to continue responding to and implementing sustainable development. In addition to actively managing the nature and climate-related risks and impacts generated by our operations, we also hope to exert greater influence in sustainability.

We invited over 20 suppliers, including raw materials, equipment, packaging and testing, and contracting, to participate in the "4th Sustainable Supply Chain Seminar" on December 5, 2023. The theme of the seminar was the mutual benefit of climate and nature. During the seminar, the Taiwan Institute for Sustainable Energy was invited to share "Net Zero ESG Development Trends," National Taipei University of Technology shared "Why Nature and Biodiversity Matters - TNFD Trend Analysis," and the Green Energy & Environment Research Laboratories of the ITRI shared "Digital Carbon Management and Carbon Reduction Hotspot Analysis Technology," sharing new carbon reduction technologies and management measures. Vice President Joseph Wu of Nanya shared sustainable supply chain management strategies and future directions for cooperation. We hope that the seminar will raise the sustainability awareness of Nanya and our suppliers, and to stay up-to-date on the latest announcements, laws, and international standards, jointly facing future sustainable development trends. In addition, all suppliers were invited to an exchange after the seminar, in which Nanya's benchmark suppliers shared their own sustainability management methods and performance, and how they responded to international trends and the requirements of stakeholders. Nanya shares its resources through public events, and will continue to exert influence with its suppliers to enhance the sustainability resilience of the entire value chain.

Nanya assesses the quality, technology, delivery, services, costs, and sustainable operations (such as energy management, energy conservation and carbon reduction, and human rights and ethics) of raw materials, components, and equipment suppliers every year. Besides irregularly providing awards to outstanding suppliers, annual evaluation results are taken into consideration when selecting suppliers for future procurements, and will increase the suppliers' cooperation opportunities, such as increasing the products procured from them.



2023 Sustainable Supply Chain Seminar Event Agenda



Group photo at the 2023 Sustainable Supply Chain Seminar

# Supply Chain Sustainability Projects



Three-zero  
human  
rights  
program

## Content of capability development

We promote the human rights program that advocates zero crimes against humanity, zero forced labor, and zero discrimination to significant suppliers

### Number of suppliers

2022: 15 contractors  
2023: 8 contractors

### Project start and end date

2022~2030

### Expected benefits

Strengthen human rights protection, reduce the exploitation of human rights, create a friendly workplace, and avoid becoming a sweatshop

### Quantified benefits

#### ◆ Initiatives and implementation in 2022-2023

- (1) Continue to communicate with and provide guidance to suppliers that support the Three-Zero Human Rights Program in coordination with the audit schedule, and investigate the company's current system to evaluate its inclusion as a key supplier.
- (2) Continue to communicate with suppliers that have not responded to the Three-Zero Human Rights Program each month.

#### ◆ Mitigation and remediation from in 2024-2025

- (1) Continue to communicate with, provide guidance to, and track suppliers that support the Three-Zero Human Rights Program in coordination with the audit schedule.
- (2) Track the establishment of a human rights system by suppliers audited each month (approximately 3 suppliers), and provide guidance to suppliers with writing a human rights code of conduct.
- (3) Continue to encourage other suppliers to support the Three-Zero Human Rights Program

#### ◆ Termination and prevention in 2026-2028

Track the establishment of a human rights system by suppliers, provide guidance to suppliers for establishing human rights risk assessment regulations, and implement risk identification and compensation measures.

#### ◆ Tracking and disclosure in 2029-2030

Prepare and periodically disclose human rights due diligence reports.



Product  
carbon  
footprint  
inventory

## Content of capability development

Encourage raw materials suppliers and packaging and testing plants to compile their carbon footprint inventory

### Number of suppliers

10 suppliers in 2023-2025

### Project start and end date

Conduct the baseline survey in 2023-2024  
Carbon inventory of 6 suppliers in 2024  
Carbon inventory of 4 suppliers in 2025

### Expected benefits

1. Aligned with international climate change issues
2. Reduces the Company's product carbon footprint
3. Achieving the SBTs in 2030 will be beneficial

### Quantified benefits

#### ◆ Inventory

Nanya has compiled the environmental footprint inventory of its products every year since 2017 to find suppliers that cause an increase in product carbon footprint, including major suppliers of wafers, packaging and testing, and chemicals and special gases.

#### ◆ Goal

Prioritize the top 30 raw materials suppliers and contractors with the highest carbon emissions for promoting the carbon reduction project and long-term goal of net zero emissions

#### ◆ Communication method

Communicate with the top 30 raw materials suppliers and packaging and testing plants with the highest carbon emissions, and participate in the low carbon footprint inventory and carbon reduction project of the Industrial Development Administration, Ministry of Economic Affairs under the guidance of the Industrial Technology Research Institute. Nanya aims to jointly reduce carbon emissions by 6,300 metric tons together with 10 supply chain partners over two years (2023/11-2025/10).

#### ◆ Implementation progress tracking/feedback

- (1) The Industrial Technology Research Institute and National Taiwan University of Science and Technology provide guidance for suppliers' carbon footprint inventory and carbon reduction projects over a two-year period.
- (2) Create and share the supplier product carbon footprint inventory on the platform.



### Content of capability development

Nanya established an upstream and downstream joint carbon reduction model and implements carbon reduction plans to strengthen the development of green suppliers. Nanya is worked with wafer suppliers through projects in 2023 to use shipping instead of air transport for wafer transportation. The quality assessment process has been completed and the goal of 100% low-carbon transportation mode is expected to be achieved in 2024.

#### Number of suppliers

1 supplier in 2023

#### Project start and end date

2022~2030

#### Expected benefits

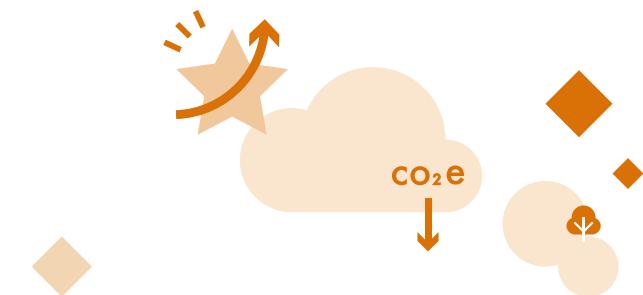
- 1.Nanya established a demonstration project and will expand it to other suppliers in the future, increasing the selection of green suppliers
- 2.Optimizing the transportation process, reducing the number of forklift operations, and saving manpower.

#### Quantified benefits

- ◆ GHG emissions was reduced by approximately 100 tons in 2023 (shipping reduces carbon emissions by 96% compared to air transport), which is the equivalent of planting 1,300 trees for the Earth every month.

### Supplier Capability Development

	2023 Goals	2023 Performance
Number of suppliers engaging in capability development	15	18
As a percentage of significant suppliers	100%	100%



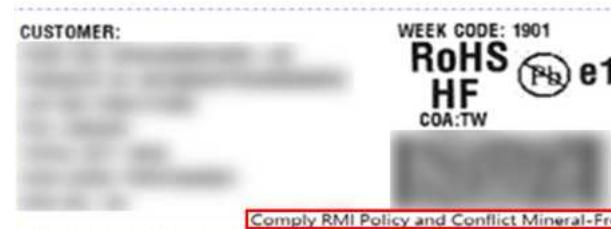
# 6.4 Responsible Mineral Procurement Management

Nanya is committed to a management and responsible procurement strategy for the ban on conflict minerals, and announced the Responsible Mineral Procurement Policy to satisfy current and future market, legal, and regulatory expectations. We aim to meet requirements for the responsible procurement of minerals and bear responsibilities specified by the Responsible Business Alliance (RBA) and satisfy the Responsible Minerals Assurance Process (RMAP). Contractors and raw materials suppliers that use gold, tantalum, tin, tungsten (3TG), cobalt, and Mica are required to comply with our Responsible Mineral Procurement Policy and cooperate with supply chain surveys.

Since 2009, Nanya has begun to investigate the sources of gold, tantalum, tin, and tungsten in the supply chain due to customer requirements, and cobalt and Mica were added in 2017. Nanya requires contractors and raw material suppliers to use the survey tool template provided by the Responsible Minerals Initiative (RMI) to collect relevant information. The management direction has changed from the ban on using minerals from conflict areas to the purchase of minerals with a responsible attitude, and hope that the supply chain can also purchase metal minerals ethically and responsibly.

Hence, Nanya conducts a supply chain survey at least once a year, users or suppliers of 3TG use the Conflict Minerals Reporting Template (CMRT), while users or suppliers of cobalt and mica use the Extended Minerals Reporting Template (EMRT) as survey tools to provide survey results on the source of 3TG, cobalt, and mica, in order to ensure that the supply chain is not a part of actions by warlords or armed groups that harm basic human rights, and signed the Responsible Mineral Policy and Declaration for No Use of Conflict Minerals. We ensure that the list of smelters provided by suppliers are all compliant with the requirement to responsibly source minerals set forth by the Responsible Business Alliance (RBA) Code of Conduct.

Nanya began adding the Statement of Compliance with RMI Policy and Conflict Mineral-Free on its product labels in 2022, declaring that all of our products comply with requirements of the Responsible Minerals Initiative (RMI) management policy and do not use conflict minerals.



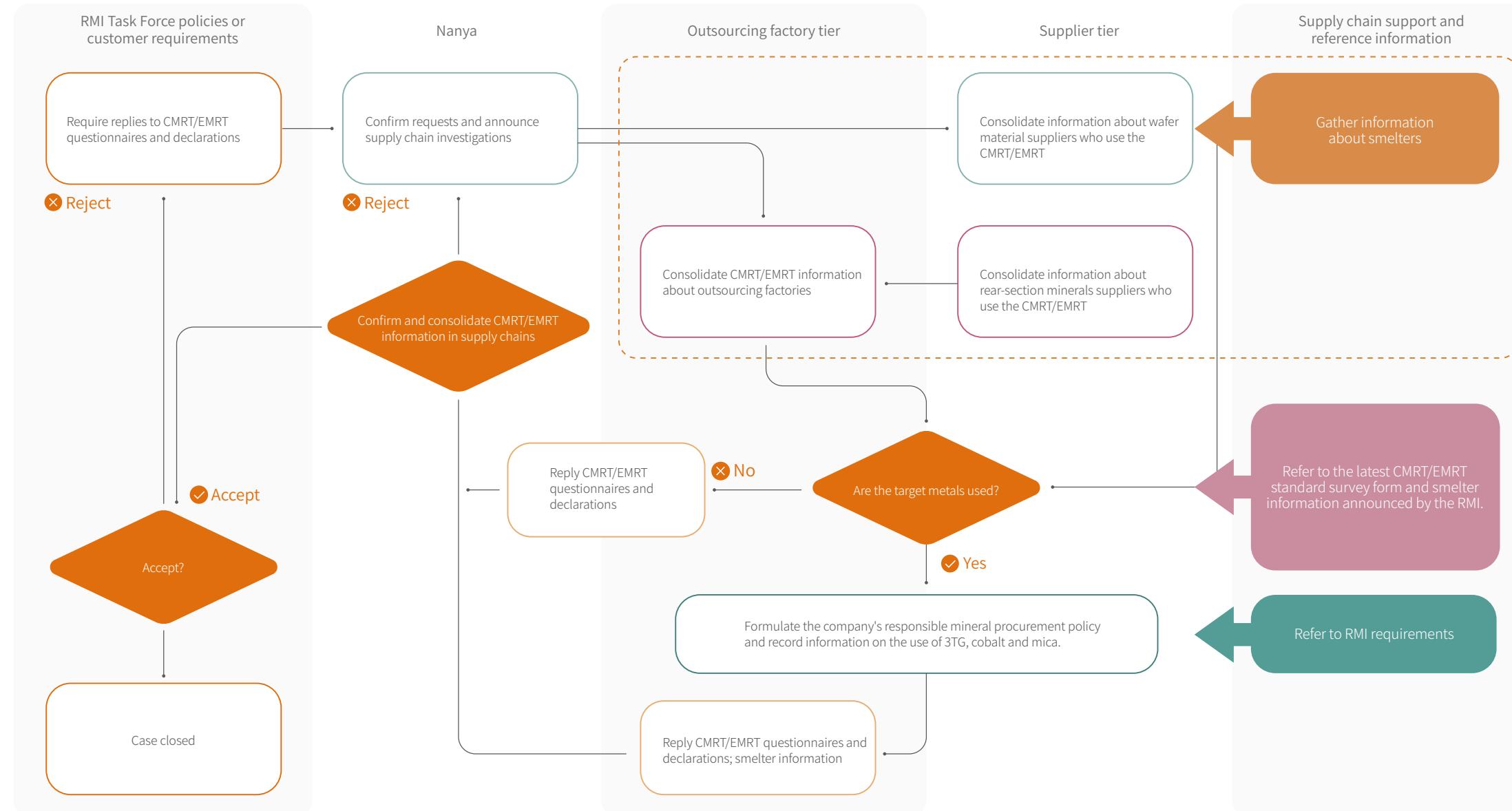
## Investigation Preparation

Nanya's supply chain maintains multi-level supply chain relations with the raw ores. Before investigations, we shall inspect the supply chain materials and define the applicable categories of gold, tantalum, tin, tungsten, cobalt, and Mica in the Company's products. We screen and select suppliers for the conflict minerals investigations and implement a series of top-down investigations on the suppliers. We use the standard investigation tools defined in the RMI and obtain the latest lists.

### Applications of gold, tantalum, tin, tungsten, cobalt, and Mica used by the Company are as follows:

Metal name	Applicable product	Application category
Gold	RDL, IC, DIMM	Gold-plated layer and gold wire
Tantalum	Wafer, DIMM	Wafer manufacturing target material and passive components alloy material
Tin	IC, DIMM	Solder paste, solder ball, and tin wire
Tungsten	Wafer, DIMM	Wafer manufacturing target material and passive components alloy material
Cobalt	Wafer, DIMM	Wafer manufacturing target material and passive components alloy material
Mica	IC Packing	Tray curing agent additive

## Responsible Mineral Mining Investigation Process

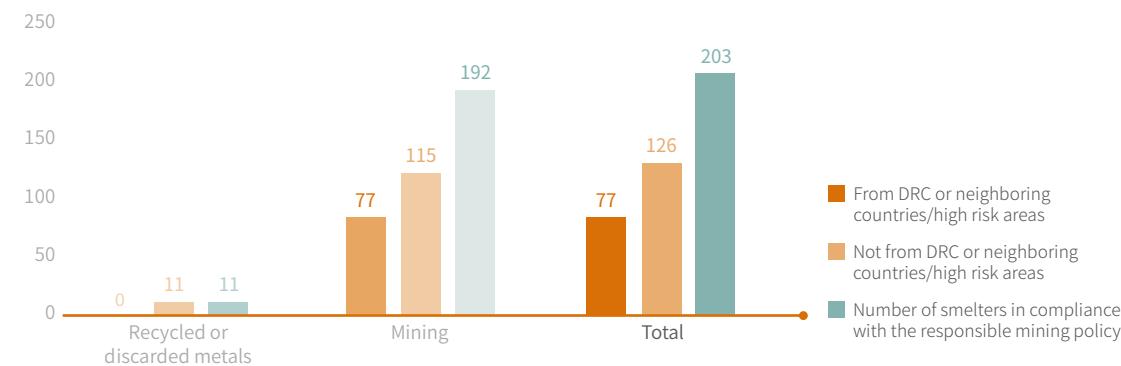


## Summary of Survey Data for Target Metal

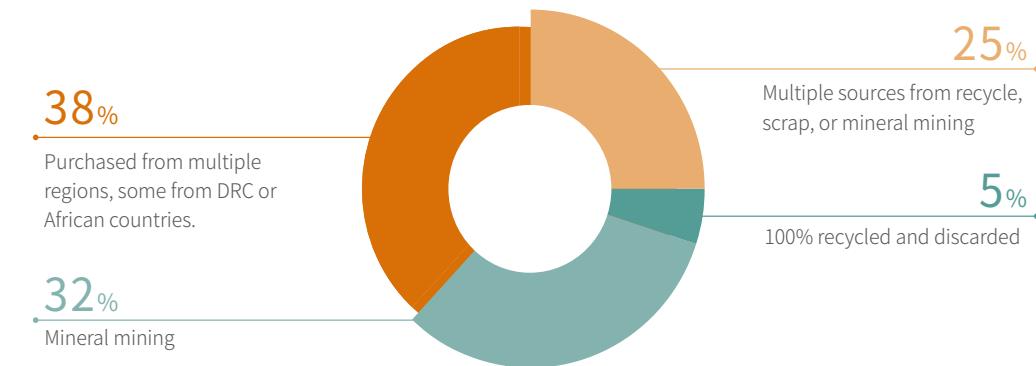
Nanya is a memory product supplier. According to due diligence of the supply chain and comparison with the list of qualified smelters of the Responsible Minerals Initiative (RMI), a total of 45 minerals suppliers, including 7 Tier-1 contractors and 7 Tier-1 raw materials suppliers as well as 38 Tier-2 and Tier-3 suppliers, have provided information on the source of gold, tantalum, tin, tungsten, cobalt, and mica, and we identified information for 203 smelters in the supply chain investigation in 2023. Currently, all 203 smelters are accredited smelters by the Responsible Minerals Initiative (RMI), and completely comply with the conflict-free minerals and responsible minerals policy, making real contributions to the environment and industry supply chain.

Minerals used in our existing products are gold, tantalum, tin, tungsten, cobalt, and mica. Approximately 38% of the 77 smelters replied that the source of the minerals might come from the Democratic Republic of the Congo (DRC) or neighboring countries as well as from recycled or discarded metals. The 77 smelters have confirmed that the source of all the minerals conformed to the Responsible Minerals Assurance Process (RMAP) policy, and were accredited by the Responsible Minerals Initiative (RMI) team as legitimate smelters.

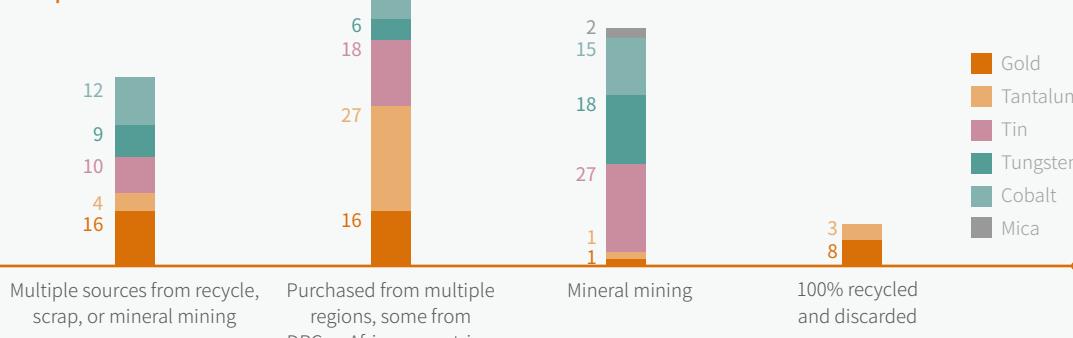
Source of minerals and number of smelters in compliance with the responsible mining policy



Percentage accounted for by each source of responsible minerals



Source of responsible minerals



Nanya shall continue to implement due diligence based on the Responsible Minerals Assurance Process (RMAP) and lower risks in the supply chain.

Nanya is responsible for the RMAP and hopes to achieve the following goals:

1. Continue to cooperate with suppliers/contractors and conduct supply chain investigations to ensure the accuracy of information on responsible mineral assurance.
2. Consolidate forces in the supply chain and require 3TG, cobalt, and mica smelters to pass the verification procedures in the Responsible Minerals Assurance Process (RMAP), and ensure that the sources of 3TG, cobalt, and mica are lawful and comply with requirements of the RMI.
3. Review supplier data and verify that suppliers meet requirements of the responsible mineral policy.

## Supply chain responsible mineral investigation cycle

Nanya began conducting conflict-free minerals supply chain surveys in 2009. Our approach is to continue communicating with our supply chain with the management spirit of continuous improvement based on supply chain survey results, RBA-RMI management guidelines, and customers' latest requirements. We identify supply chain survey conditions and analyze survey results to make timely adjustments to the Company's conflict-free management indicators and responsible minerals policy, showing the management results from a positive cycle.



## Future Outlook

Collecting information on smelters will gradually become the norm due to the Responsible Minerals Initiative (RMI). Natural resources will gradually be depleted, and most resources are managed and controlled by a few countries or governments due to geography. In the mining process of natural resources, tremendous energy consumption, water resource pollution, land loss, and even illicit incidents, such as infringements of human rights, may occur. Hence, companies should fulfill their social responsibility, take environmental protection, labor rights, and basic human rights seriously, and extend management indicators to suppliers based on the spirit of lawful procurement.

In the past decade, in response to requirements from clients and various social aspects, Nanya has participated in investigations of rare-earth materials, metalloids, and volatile organic compounds (VOCs), and actively introduced backup suppliers into our qualified supply chain. Moreover, we have ensured that all suppliers in the supply chain are very cooperative in replying to our requests and gradually meeting regulatory requirements on company indicators, so as to meet clients' expectations and achieve sustainable operations.

# 7 Common Good

## An Active Participant in Giving Back to Society

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Nanya is committed to social engagement and participates in public affairs and local care to become an active participant who gives back to society. We strive to promote social influence and community development to lead society towards a better and more sustainable future.

**2,929.5 hours**

Nanya social engagement hour increased by 18% compared to 2022

**100 people**

Nanya Volunteer Team established during the pandemic grew to over 100 members in two years

**ESG education blueprint**

Created an education blueprint that integrates ESG principles into one's core values, which covers from elementary school to university.



# Strategy and Performance of Material Topics

Strategy of Material Topics	2023 Goals	Performance and Goal Achievement	2024 Goals
<b>Social Engagement</b>	Annual growth of social engagement hours $\geq 10\%$	The total number of social engagement hours grew 18% to 2929.5 hours in 2023(2481.5 hours in 2022)	Annual growth of social engagement hours reaches 10%
<b>Talent cultivation</b> Work together with schools to implant sustainability concepts into young students and cultivate diverse young professionals	Nanya Volunteer Team Members $\geq 100$ people	Current number of volunteers: 105 people	Number of volunteers $\geq 150$ people
<b>Environmental Conservation</b> Connect different types of NPOs to promote environmental protection ideals, preserve biodiversity, and develop towards a low carbon society	Obtained the certification for excellent workplace	Obtained the certification for excellent workplace <sup>Note</sup>	None
<b>Humanistic care</b> Utilize local resources to promote local cultural features	Accumulated semiconductor talent cultivated $\geq 750$ people(Since 2021)	Accumulated semiconductor talent currently cultivated: 878 people	Accumulated semiconductor talent cultivated $\geq 1,100$ people (Since 2021)
<b>Community Harmony</b> Participate in public affairs in the neighborhood (nearby communities) and create a harmonious and mutually beneficial living sphere			

◆ Exceed   ◆ Achieved   ◆ Partially Achieved

Note: Obtained the 2023 Outstanding Workplace Certification and entered the finals of the Outstanding and Healthy Workplace Selection

## 7.1 Social Influence

Nanya aims to be the best DRAM partner for smart world. As an industry leader, besides giving manufacturing profits back to shareholders, we also actively participates in public welfare activities to create a positive impact on the road to sustainability. As well as working together with stakeholders to achieve mutual prosperity. The Company combined its core value and corresponded to the United Nations Sustainable Development Goals (SDGs). Nanya's four themes of social engagement, including "Talent Cultivation," "Environmental Conservation," "Humanistic Care," and "Community Harmony," were developed on this basis. We took actions based on the themes, formulated short, medium and long-term goals, linked internal and external resources of the Company, took action for social engagement, and played the role of a leader to create greater influence.

Nanya promotes mutual prosperity based on the four themes of social engagement. Understanding sustainability and staying up to date on key trends seems to have become a required subject for corporates. Nanya continues to promote ESG values through internal training, and actively explores different possibilities for cooperation. We utilize our expertise and experience to provide feedback and hope to grow together in sustainable development for the common good of society together with the industry chain, including customers, suppliers, and stakeholders, such as the government, schools and NGOs.



Social engagement themes	Actions	Role of employees	Actual measures	Corresponding SDGs
 Talent Cultivation	<ul style="list-style-type: none"> <li>• CSR x USR</li> <li>• Youth Empowering Project</li> </ul>	<ul style="list-style-type: none"> <li>• Provide expertise knowledge to cultivate talents</li> <li>• Volunteer for events</li> </ul>	<ul style="list-style-type: none"> <li>• Nanya managers share experience and giving lectures to cultivate talents</li> <li>• Volunteers gone to rural schools to help install equipment</li> </ul>	       
 Environmental Conservation	<ul style="list-style-type: none"> <li>• Earth Day 365</li> <li>• Climate and Nature Sustainability Initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Provide resources to environmental conservation activities</li> <li>• Respond and lead employees to participate in environmental conservation activities</li> <li>• Volunteer during events</li> </ul>	<ul style="list-style-type: none"> <li>• Volunteers use their personal time to participate in activities and support local ecological conservation</li> <li>• Employees and their family members participate in environmental education activities and learn about the projects invested by the Company during the activities.</li> </ul>	
 Humanistic Care	<ul style="list-style-type: none"> <li>• Community Revitalization</li> <li>• Responsible Consumption</li> </ul>	<ul style="list-style-type: none"> <li>• Integrate resources of various sectors to plan activities of industry, government, and academia projects</li> <li>• Provide promotion platform for local small farmers and public welfare groups</li> <li>• Volunteer for events to promote concepts and charity items</li> </ul>	<ul style="list-style-type: none"> <li>• Employees participate in local activities after work to support the promotion of local culture</li> <li>• Plan activities and create cooperation opportunities with local communities, social groups, and local farmers</li> </ul>	
 Community Harmony	<ul style="list-style-type: none"> <li>• Line Up with Neighborhoods</li> </ul>	<ul style="list-style-type: none"> <li>• Plan social welfare activities and allocate resources</li> <li>• Participate in company activities</li> </ul>	<ul style="list-style-type: none"> <li>• Participate in public welfare and respond to activities organized by the Company</li> </ul>	



## Love Connection X Nanya Volunteer Team

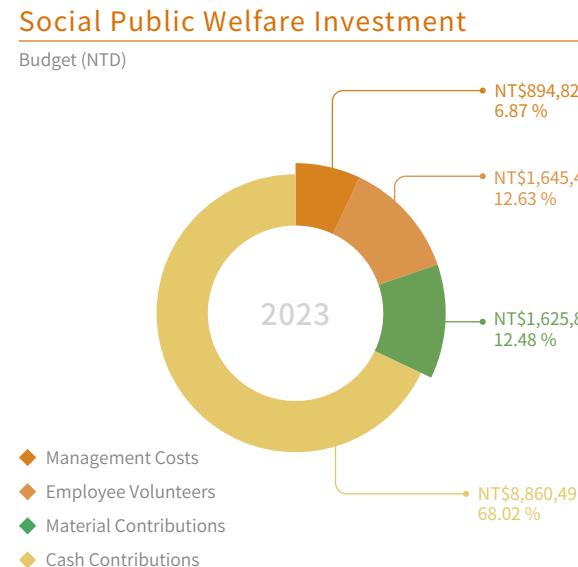
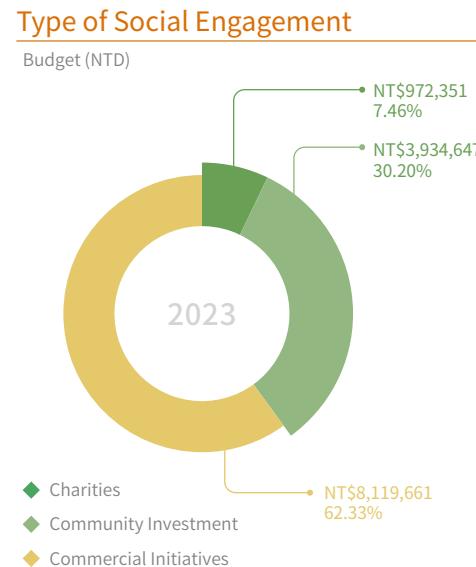
A single person can go fast, a group of people can go far

Nanya works with public welfare partners to promote our four themes of social engagement and continue to deepen our influence on various issues. To encourage the Company's employees to engage in public welfare, a volunteer team was established in 2021, calling upon employees to join. The team encouraged employees to organize or participate in the Company's charity activities, which received enthusiastic responses from employees. The Company's social engagement hours grew to a total of 2,929.5 hours in 2023.

## Measuring the benefits and impact of social welfare

Influence starts with change. Nanya has adopted the London Benchmarking Model (LBG) to evaluate the benefits and influences of each public welfare activity and adjust programs and investments continuously throughout the process, making sure the results are connected with our business operations. To deepen and expand corporate long-term influence on society, the Company focuses on connecting its core operational capabilities with social demands. We hope our innovative capabilities can resolve social issues and create a mutually beneficial society. Shared value is the core concept of Nanya's participation in social public welfare. Our short-term goal is to deliver maximum benefits with our investments. Our long-term goal is that the behaviors, awareness, and well-being of the entities we have helped will generate positive influence.

Nanya's total investment in social engagement was NT\$13,026,659 in 2023, expenses include industry-government-university-research collaboration projects, charity events, sponsorship and donations, and Love Connection activities organized by employees. In the future, we will continue to review the results through LBG, so that resources can be more effectively used.



**Resources invested in social welfare in the past four years**

year	Cash Contributions		Material Contributions		Employee Volunteers		Management Costs	
	Budget (NTD)	Ratio (%)	Budget (NTD)	Ratio (%)	Budget (NTD)	Ratio (%)	Budget (NTD)	Ratio (%)
2020	42,342,667	93.35%	951,592	2.10%	167,236	0.37%	1,899,742	4.19%
2021	41,148,561	89.35%	997,500	2.17%	208,728	0.45%	3,700,418	8.03%
2022	39,828,214	83.59%	3,666,283	7.69%	238,276	0.50%	3,912,243	8.21%
2023	8,860,491	68.02%	1,625,873	12.48%	1,645,470	12.63%	894,825	6.87%

## Commercial and social benefits of the four themes of social engagement

Social Engagement Themes	Commercial Benefits	Social Benefits	Corresponding SDGs
Talent Cultivation	<ul style="list-style-type: none"> <li>Nanya's supervisors serving as industry experts (4 supervisors)</li> <li>Support the establishment of semiconductor laboratories (1 certificate of appreciation)</li> <li>Internet exposure (9 media exposure)</li> <li>Support professional athletes (8 players)</li> </ul>	<ul style="list-style-type: none"> <li>Design thinking creative integration education (1,229 students)</li> <li>Proposals of design thinking innovation (48 regional revitalization proposals)</li> <li>Discussion of business ethics topics (24 short video)</li> <li>The semiconductor laboratory offers an online course on electronic design automation that allows 600 students at the same time</li> <li>Assisted four rural elementary schools (donated NT\$1,000,000 in equipment)</li> <li>Budget for sponsoring athletes (NT\$168,000)</li> </ul>	 
Environmental Conservation	<ul style="list-style-type: none"> <li>Employee engagement (637 employees participated)</li> <li>Internet exposure (online media exposure reached 12,584 interaction)</li> <li>Environmental protection initiative (participated in 2 environmental protection initiative)</li> </ul>	<ul style="list-style-type: none"> <li>Carbon reduction (turning off lights for one hour in all of Taiwan reduced electricity consumption by 150,000 kWh/reduced carbon emissions by approximately 76,350 kg)</li> <li>Environmental ecological diversity (removed 184.3 kg of Mikania micrantha)</li> </ul>	  
Humanistic Care	<ul style="list-style-type: none"> <li>Employee engagement (1,160 employees participated)</li> <li>Charity (3 certificates of appreciation)</li> <li>Local farmer promotion (8 farms)</li> </ul>	<ul style="list-style-type: none"> <li>Responsible consumption (a total of approximately NT\$370,000 worth of goods consumed at charity sales and farmers' markets)</li> <li>Reducing the wealth gap (provided financial aid to 8 entities)</li> <li>Prospering community environment (purchased 192 kg of fair trade coffee)</li> <li>Promote fair trade (Fair trade Film Event reached more than 200 people)</li> </ul>	   
Community Harmony	<ul style="list-style-type: none"> <li>Strengthening neighborhood relationship (2 certificates of appreciation)</li> </ul>	<ul style="list-style-type: none"> <li>Community communication (Improve road facilities for the benefit of 16,797 people for the surrounding neighborhood)</li> </ul>	

# 7.2 Social Engagement

Nanya hope that we can solve current social and environmental issues by participating in social engagement in person, rather than just sponsoring or donating . Therefore, in the process of forming the four main themes of social engagement, we constantly think how we could improve and connect resources from industry, government, and academia to jointly create greater influence. As we continue to lead the promotion in the aspects of talent cultivation, environmental conservation, humanistic care, and community harmony, and present the results to the public to convey Nanya's ambition to be interactive, mutually beneficial, local, and connected.

Social Engagement Themes	Social issues resolved	Major results
Talent Cultivation	<ul style="list-style-type: none"> <li>· Educate people on sustainability concepts</li> <li>· Cultivate youth's problem-solving design thinking tool</li> <li>· Reduce the gap between urban and rural areas and promote academic equality</li> <li>· Foster technical talents to solve the problem of stable supply of semiconductor talents</li> <li>· Cultivate specialists</li> </ul>	<ul style="list-style-type: none"> <li>· 1,229 students received design thinking creative integration education</li> <li>· Served as a lecturer in the design thinking course of Taipei First Girls High School. More than 20 students participated in the course discussion.</li> <li>· Donated NT\$1,000,000 in equipment for online distance learning in rural elementary schools</li> <li>· Donated 320 DDR4 32GB memory modules to the Advanced Semiconductor Technologies and Devices Laboratory of National Yang Ming Chiao Tung University</li> <li>· Student-Athletes Scholarship sponsored 4 national athletes and 4 elite players</li> </ul>
Environmental Conservation	<ul style="list-style-type: none"> <li>· Improve the public's environmental knowledge and literacy, and establish the concept of environmental protection and sustainability awareness</li> <li>· Organizing cleanup events to give the public a greener environment</li> <li>· Protect biodiversity and prevent habitat deterioration and invasion of alien species from causing biodiversity to disappear</li> </ul>	<ul style="list-style-type: none"> <li>· Removed 184.3 kg of Mikania micrantha</li> <li>· 243 observation records uploaded to the iNaturalist platform</li> <li>· A total of 305 people participated in environmental conservation activities</li> </ul>
Humanistic Care	<ul style="list-style-type: none"> <li>· Improve the public's cultural literacy and broaden their horizons on a people-oriented basis</li> <li>· Support local cultural development</li> <li>· Assist local cultural and historical groups with endeavors in their hometowns</li> <li>· Provide care and platform for various disadvantaged groups to promote ideas</li> <li>· Promote the concept of responsible consumption, develop symbiosis and mutually beneficial lifestyles</li> </ul>	<ul style="list-style-type: none"> <li>· Taishan Renaissance activity series had a total of 8,520 participants</li> <li>· Two charity sales and a local farmer's market were held, with employees spending a total of approximately NT\$370,000 on goods</li> </ul>
Community Harmony	<ul style="list-style-type: none"> <li>· Pay attention to local welfare, integrate neighborhood services, promote the beauty of neighborhoods, and carry out social welfare work</li> <li>· Combine social resources to promote local sustainable management</li> </ul>	<ul style="list-style-type: none"> <li>· Neighborhood public affairs sponsorship totaling NT\$1,050,000</li> </ul>



## CSR x USR

Businesses and schools work together to implement ESG concept into campus and cultivate young talents



Partnering unit: Ming Chi University of Technology



**Design Thinking · Creative Integration** Systematically implant the DNA of sustainability into students through design thinking courses, allowing the concept of sustainability to sprout on campus

Educated **1,229** students in total

**128** hours of education

Exhibition has over **200** visitors

As sustainability issues have attracted much attention, Nanya realized being part of the global citizen , it is important to increase awareness and understanding of ESG (environmental, social, governance), CSR (corporate social responsibility), SDGs (United Nations Sustainable Development Goals) and climate change. These are literacies and abilities that all citizens of the Earth will need to have. Nanya corporated with Ming Chi University of Technology's USR (University Social Responsibility) in education and implant ESG into the DNA of every student through training, as we spread sustainability concept on campus.

Nanya and the school jointly offered design thinking courses and introduces the concept of sustainability in the course, developing people-oriented design thinking, guiding students to find problems and opportunities starting from understanding the needs of users, and enhancing students' design capabilities. The course allows freshmen, sophomore, and junior from the university's undergraduate students to engage and discussions across departments, and inspires student to find solutions for local cultural or social issues from a sustainability perspective. At the same time, Nanya also served as a lecturer in the design thinking course of Taipei First Girls High School, and provide various examples from the perspective of the industry. Through discussions, students used design thinking methodology to explore solutions. The lecturer provide four personas , and students proposed four solutions in class.

### Industry-academia collaboration in design thinking and creative integration

Starting with education, make sustainability a cross-generational consensus, and use "design thinking" throughout the education process to enhance students' design capabilities

#### SDGs sustainability concept promotion

**01**

##### Nanya participation

Serves as the course's lecturer and introduces key trends in sustainable development, the context of Nanya's corporate sustainability, and related examples

##### Results

The course introduces the SDGs and climate change trends to all freshmen, emphasizing issues such as people-oriented, environmental sustainability, circular economy, and healthy ecology, allowing students to learn design thinking concepts and come up with potential solutions.

#### ESG x Design for Mutual Benefit

**02**

##### Nanya participation

Students become more engaged in course contents through competitions, which stimulate creative thinking and encourage students to turn concepts into actions.

##### Results

Students from the Management and Design department combined their creativity to jointly think about examples of ESG practices, develop solutions for local problems, which accumulate capabilities for community empowerment and regional revitalization.

#### Business Ethics

**03**

##### Nanya participation

Introduces how Nanya utilizes its expertise and social influence to solve problems and implement corporate sustainability from the perspective of companies.

##### Results

Improve students' theoretical construction ability in "business ethics", and develop students' expression ability and initiative through group discussions and presentations, so that they further share their values with each other and self-reflect. Students then film their ideas as results.



Nanya shared a special speech on SDGs with more than 900 freshmen at Ming Chi University of Technology



Serves as a lecturer in the design thinking course of Taipei First Girls High School and proposes four persona examples in class, and students create four solutions respectively



Nanya commented from a company's perspective and presented awards during the finals of the ESG design competition



Nanya shared, from the perspective of a company, workplace ethics, talent cultivation, and sustainable influence with juniors

## CSR x USR Exhibition on Industry-Academia Collaboration

Nanya and Ming Chi University of Technology promoted sustainable education and practices through industry-academia collaboration. In 2023, we organized the "CSR x USR Exhibition on Industry-Academia Collaboration." In addition to business managers of Nanya, Ming Chi University of Technology's President, teachers, and students also participated the exhibition. Over 200 guests visited the exhibition during the two-week period.



Opening ceremony of the "CSR x USR Exhibition on Industry-Academia Collaboration"

### Corresponding theme



Environmental Conservation



Humanistic Care

The Design Thinking Creative Integration course includes in-depth discussions on sustainable environmental issues and regional revitalization in different stages of the course.

- Students discuss how to improve environmental issues (climate change, carbon emissions, water resources, etc.) through design thinking methodology, and produced a process or product to share as their result.
- They studied the culture and history of each district in New Taipei City, Taiwan, and thought about how to combine the power of design thinking and cultural creativity to design a complete set of services and supporting products.



## Youth Empowerment Project

Support rural school online learning and empowering student athletes for equal rights in education



Partnering unit:

New Taipei City Education Department, Bitou Elementary School, Shi-fen Elementary School, Fulong Elementary School, and Fulian Elementary School  
(the rural elementary schools all have no more than 30 students)



### 01 Distance Online Learning Equipment for Rural Elementary Schools

Sponsored NT\$1 million worth of equipment

Assisted 4 rural elementary schools with installation

As an active participant in giving back to society, Nanya uses the power of technology to help rural elementary schools build a new model of online learning and promote academic equality. In this case, we worked together with the New Taipei City Education Department and elementary school teachers. Nanya donated NT\$1 million in online learning equipment to help four elementary schools, including Bitou, Shih-fen, Fulong and Fulian, build a complete online distance learning system, driving the digital transformation of education in rural areas of New Taipei City. The Company also arranged for volunteers with expertise in information technology to install live streaming equipment in the schools, to create a high-quality digital teaching environment. This further supports the promotion of a distance learning school cluster in the Northeastern Coast, implementing digital transformation, broadening the horizons of students in rural areas, and enriching learning content. Due to the low number of students in rural areas of New Taipei City, there are limitations on group learning. Therefore, schools engage in cross-school distance learning with the concept of one school being one group. This effectively increases students' opportunities for discussion and sharing, allowing students to interact across schools, which stimulate their thinking and improve children's effectiveness and confidence in learning. Teaching resources of the four schools are also combined to broaden the horizons of students in rural areas and enrich learning content. Nanya hopes to use its own technological power to provide students in rural areas with more diverse and equal education opportunities while promoting academic equality.

I am honored to participate in this project for rural schools to make online teaching more efficient after hardware improvements, and further resolve the gap in teaching resources between urban and rural areas. This is an important improvement for students and teachers in rural areas, and it is also a very meaningful contribution made by the volunteer team.

After updating digital equipment and dedicated lines, we can see clearly through the new cameras, and are able to see if students are paying attention or not, which significantly improved the quality of teaching. Moreover, online platforms can be used to teach cross-school courses at any time without needing to worry about Internet connection issues.

Online connection was very smooth after updating the equipment, and we have not been disconnected when logging into Meet. The teacher's presentation can be displayed more quickly during class, and our sound was clearly sent to students at the other school when discussions, making distance learning more fun!

**Chen Chun-Chang**

Senior information technology engineer at Nanya



**Teng Yu-Chen**

Sixth-grade teacher at Bitou Elementary School



**Chien Chih-Yun and Chen Yen-Ming**

Fifth-grade students at Bitou Elementary School



Visit rural elementary schools & Online courses



Communicate with the school & Volunteers install equipment on site



Donation ceremony



### Corresponding theme



Humanistic Care

Nanya offered more than just a equipment sponsorship, but also show our care for rural school in Taiwan. Our volunteers personally install equipment in rural elementary schools, and provide technology support for teachers on how to operate the equipment, doing our part to reduce the gap between urban and rural areas

### Press release

[Nanya Technology Corporation Donates NT\\$1 million in Distance Learning Equipment for "Digital Transformation" of Education in Rural Areas of New Taipei City](#)

## 02 Student Athletes Scholarship

Subsidized **4** national athletes and **4** other elite players

Nanya's education blueprint not only strikes root in graduate school, college, and high (vocational) school for the DRAM industry. We also noticed that some young students not only focus on their studies, but have other gifts as well, and we hope that they will be able to fulfill their dreams. Hence, we hope to play the role of a resource provider and provide elite athletes with steady economic support during their training. Nanya thus began providing the "Student Athletes Scholarship" to children of employees starting in 2022. All athletes under the age of 24 who meet the qualifications of national athlete or have outstanding performance in the National Games, National High School Games, and games recognized by the Ministry of Education are eligible to apply. As of 2023, subsidies were provided to 8 players, who have outstanding performance in table tennis, ice skating, taekwondo, competitive gymnastics, and diabolo.

Award Ceremony



Award-Winning Athletes :

Ice skating athlete Ting Yu-En (Fourth from the right in the photo)

Table tennis athlete ChangPing-Cheng(Fourth from the left in the photo)

Nanya meeting with parents of sponsored athletes



Nanya employees share the ups and downs of the training process with Nanya chief sustainability officer



≤24

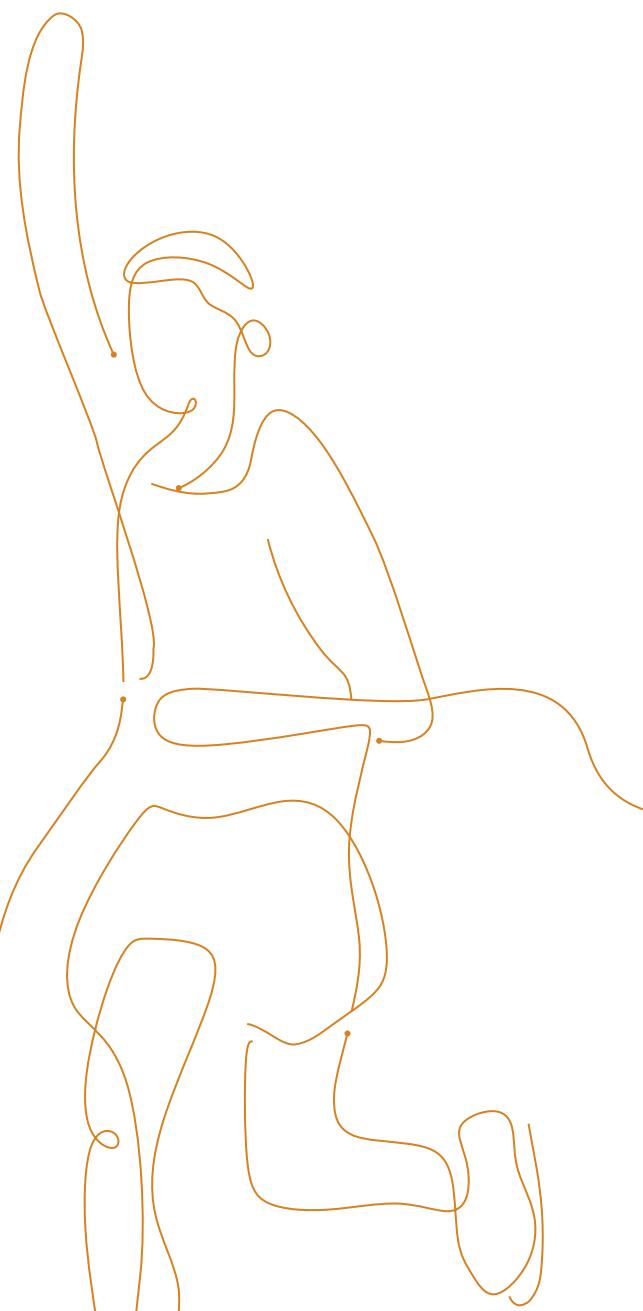
- Children of Nanya employees
- Athletes include and under the age of 24
- The applicant has the following qualifications in the current year or the previous year (select one)



Selected as a member of a national team recognized in the "Regulations Governing Selection, Training and Participation of Sports Coaches and Athletes for National Representative Teams of International Games"



Participated in the National Games: Placed in the top three in the National Games, National Intercollegiate Athletic Games, National High School Games, or other comprehensive sports events recognized by the Ministry of Education



## Environmental Conservation

# Earth Day 365

Connecting internal and external stakeholders to respond to international environmental protection actions and expand influence



A total of **56** suppliers responded



Partnering unit : Society of Wilderness, Semiconductor Equipment and Materials International (SEMI), suppliers

Nanya organized the Earth Day 365 activity series, which integrate the concepts of the two major international environmental protection actions "Earth Hour" and "Earth Day." The Company organized events for employees to take part in, which raised their awareness of climate change and concern for ecology and natural habitats.



### Earth Hour

- On March 21, Nanya held a press conference together with the public sector, enterprises, and the Society of Wilderness to invited the public to support the Earth Hour event
- Nanya posted on Facebook calling on employees and suppliers to join the Earth Hour initiative to turn off unnecessary lights at night on March 25. A total of 1,735 people interacted with the Facebook post.

### Eco-Quiz

We promote and educate various climate change-related information and knowledge in the Company, such as extreme weather, climate neutral, greenhouse gases, and net-zero emissions. And an online quiz were conducted to encourage employees to participate, with a result of 133 employees received perfect scores.



### Earth Day

Nanya collaborated with SEMI to call on members of the Semiconductor Climate Consortium (SCC) and members of the SEMI Sustainable Manufacturing Committee to actively respond to Earth Day, making the path to sustainability clearer while raising people's awareness and attention to sustainability issues!

### Nanya employees respond



Press Conference



### Nanya Facebook Posts



**Environmental Conservation**

## Climate and Nature Sustainability Initiatives

Improve the public's environmental literacy and knowledge, and establish concepts and practices for protecting environmental sustainability



**305** people responded

Nanya president led **73** senior managers to personally participate

Removed **184.3** kg of Mikania micrantha

Partnering unit : Society of Wilderness

Nanya is located in the mountain area of Taishan with rich ecology. We attach great importance to natural ecology and planned a series of environmental conservation activities. We invited employees and their families to learn about nature, protect mountains and rivers, and remove alien species. We also called on volunteers to take action to protect biological diversity.



### Mountain Cleanup

Every year, Nanya calls on its volunteer team members to carry out environmental protection and mountain cleanup activities around the Company's fabs. The fab is located in a mountain area, and there are hiking trails suitable for beginners nearby. Employees introduce family members to the surrounding ecology through the cleanup activities, not only keeping the trail environment clean, but also taking away trash that does not belong to the beautiful mountains. Employees also clear ditches of fallen leaves to maintain smooth drainage, a clean mountain area, and road safety.



Volunteers and their families search for trash that does not belong to the mountains to protect the environment and natural ecology



Mountain cleanup activities are organized every year to understand the Company's surrounding environment and keep it clean



### Species survey

Nanya collaborated with the Society of Wilderness on the basis of understanding the surrounding natural environment, and used the mobile app iNaturalist, which is well known around the world. The app uses AI to identify different species of animals and plants. You only need to upload a photo to identify various species. Employees and their families can take photos and upload the species observed within the Company's factory area. This educates employees and their families to respect natural ecology, and connects the land to people's local identity, increasing their concern for the sustainability of the environment and ecology. A total of 243 observation records were uploaded that day, covering a total of 76 species. The species survey establishes an ecological database of Nanya's surrounding areas. The big data uploaded to the platform can also be used in biodiversity surveys and ecological conservation in the future, which will contribute to biodiversity.



Understand the surrounding environment of fabs through the iNaturalist app



### Removing Mikania micrantha

In order to protect the biodiversity of Wugu Wetland, we began working with the Society of Wilderness in 2020 to remove the world-class malignant weed - Mikania micrantha in Wugu Wetland. Mikania micrantha has been classified by the International Union for Conservation of Nature (IUCN) as one of the top 100 invasive species in the world. We removed Mikania micrantha from Wugu Wetland to maintain biodiversity and protect habitats, so that native species can continue to survive in the habitat without being harmed. This year, in addition to planning the event for volunteers and their families to remove Mikania micrantha, the president of Nanya directed 73 senior managers to the ecological environment of Wugu Wetland and the impact of invasive species on ecological damage. They took action to remove invasive species from Wugu Wetland to show concern for biodiversity, and removed a total of 184.3 kg of Mikania micrantha.



Nanya Volunteer Team works with the Society of Wilderness every year to remove Mikania micrantha from Wugu Wetland, maintaining biodiversity and protecting the wetland.



This year, the president led the senior managers to Wugu Wetland to show concern for the impact of Mikania micrantha on ecological damage.



### Corresponding theme



#### Community Harmony

In addition to cleaning the environment, volunteers were introduced to the surrounding environment of Nanya's fab and Tamsui River basin, connecting with local sentiments.



## Community Revitalization

Utilize local resources to promote local cultural features



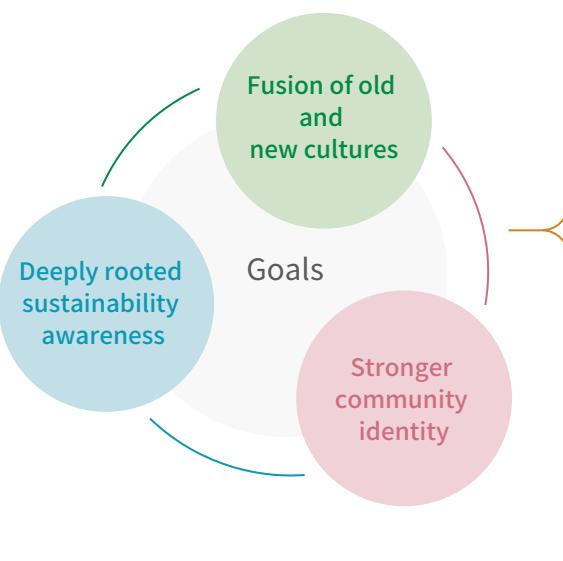
8,520 participants



Partnering unit : Ming Chi University of Technology, Taishan District Office, New Taipei City Library Taishan Branch, schools located in Taishan, Taishan Temple, Mingzhi Academy, Ezshow Drum Studio

The original intention of regional revitalization is to respond to problems such as over-concentration of population in metropolitan areas and imbalanced development between urban and rural areas. By reviewing local advantages and disadvantages, we can develop new business models by integrating cross-departmental and organizational resources, establishing a complete ecosystem from an economic, cultural, and human resources perspective to drive local industrial development. Nanya is located in Taishan District and works with Ming Chi University of Technology in jointly promoting Taishan Renaissance in coordination with the "Action Plan for the Northern Taiwan Gallery-Strip of Premier Studies" of the University Social Responsibility Project implemented by the Ministry of Education, supporting Taishan's regional revitalization with concrete actions and dedicating efforts to community empowerment.

Nanya works with local art groups and organization to conduct a series of activities, such as "Taishan Renaissance" and "Taishan Lion Dance Culture Festival," allowing the public to understand the heritage of local temples and places in Taishan, through cultural education methods, guided tours, and various experiential activities. Nanya takes action to support Taishan's community empowerment and create new "memories" for precious local traditional "skills."



### Corresponding theme



Community Harmony

Nanya is located in Taishan, New Taipei City and organizes various traditional events with Ming Chi University of Technology, promoting the precious local traditional culture from a local perspective.

### 01 Taishan Renaissance

While focusing on economic development, how to maintain the soft power of "local culture" and support regional revitalization with concrete actions is an issue other than urban reengineering that also needs attention. Nanya and Ming Chi University of Technology co-organized the Taishan Renaissance Project, cooperating with local temples, cultural and historical institutions, and art groups to organize guided tours and traditional craft workshops to promote understanding and connection with local culture.

This project mainly focuses on the temples and drumming arts in Taishan District:

**Temple:** In cooperation with theUSR Project of Ming Chi University of Technology, starting from the most representative temple in Taishan District - "Taishan UpTemple," and jointly organizes temple tours, Koji Pottery workshops, guided reading of temple picture books, sketching competitions, and cultural lectures. We use interactive education methods to promote traditional culture to the public, and plan handicraft workshops for the youth and children to cultivate interests from an early age, creating new connections between generations by giving old culture a new look.

**Drum art:** Drum art culture was developed from temple culture and is not limited to the architecture, but also involves "handicraft." The drum-making craftsmanship in Taishan District is well-known among temples. The Activities emphasizes the traditional handcraft skills of making "drums." The project invited Master Lin Yu-Long from Ezshow Drum Studio with 20 years of drum-making experience to teach a class, and demonstrated his unique techniques for pulling drumhead and drumming. The "Taishan Drum Festival" performance has been held in the square of Taishan UpTemple for two consecutive years, The local drum troupe integrated the three skills of "singing, dancing and music" for innovative performances using traditional instruments. In 2023, it combined Beiguan music and Peking Opera gongs and drums, and invited two major Taiwanese performance troupes: Tensyo Taiko and Goosbond Assemble, and Japanese shinobue performers to perform together!



### 02 Taishan Lion Dance Culture Festival

As an important cultural event in Taishan District, the "New Taipei City Taishan Lion Dance Culture Festival" organized by Taishan District Office and co-organized by Nanya every year. The event starts with the celebration of the birthday of "Master Xianying", the primary deity of Taishan UpTemple and Lower Taishan Temple (18th day of the 9th month of the lunar calendar). Since most temple celebrations have lion dance performances, it developed into the "Taishan Lion Championship." As the sacrificial event grew, the local cultural event became Taiwan's iconic lion dance competition "Taishan Lion Championship" in 2006, which has been held for 17 consecutive years. Nanya has sponsored and supported this local traditional event for five consecutive years. Furthermore, we also collaborated with Ming Chi University of Technology and culture and history organizations in organizing the Taishan Lion Workshop, which introduced employees to the traditional culture of Taishan District through handicraft.





## Responsible consumption

Every consumption has a meaning behind it. We advocate the social value created by goods or services and promote sustainable living practices



Employees purchase a total of approximately NT \$370,000 in goods



Partnering unit : Ministry of Agriculture Agency of Rural Development and Soil and Water Conservation Taipei Branch, Fair Taiwan Fairtrade Association, public welfare groups, Local farmers

### 01 Small farmers market

We cooperated with government departments to provide the Company's venues for local farmers to display and sell their own products, provide direct purchase opportunity for farmers to increase farmers' profits and income, and promote the concept of responsible consumption.

In September this year, the Company held a "Farmers Market" in cooperation with the Agency of Rural Development and Soil and Water Conservation Taipei Branch. The event was held before the Mid-Autumn Festival, during which 8 local farmers promoted by the government brought their products to the Company, which sold around NT\$140,000. Establishing mutual trust and interdependence between farmers (producers) and consumers to create a greater positive impact.



### 02 Charity sale

Nanya holds charity sales during Chinese Holidays and invites public welfare group to our venue, encourage employees to exert their influence and care for society, hoping to care for sheltered workshops of all sizes. Nanya volunteers also helped with sales at various stalls during the charity sale.



**Cooperation with public welfare group :** Down Syndrome Foundation (Abrazo Sheltered Workshop), Taiwan Gofe Care Association (Gofe Workshop), San Love Social Welfare Association (Seedling Workshop), Tri Bake Social Enterprise (Tri Bake Sheltered Workshop, TR Bake Sheltered Workshop) Yarunmi Sheltered Factory, Genesis Social Welfare Foundation

Two charity sales were held, a total of 6 groups were invited and volunteers were called on to participate in the charity sales, which sold a total of NT\$228,929 goods.

### 03 Fair trade

Nanya began purchasing fair trade coffee for its pantries in 2018, and employees can enjoy a cup of fair trade coffee for only NT\$10. Nanya also established a fair trade demonstration pantry to promote the concept of fair trade to explain the relationship between fair trade and the SDGs, so employees and visitors could understand that the coffee they enjoyed has far greater meaning than just the coffee. Employees can easily support sustainability measure with Nanya through a cup of coffee. So far employees have enjoyed 60,000 cups of coffee.



In 2023, Nanya collaborated with the Taiwan Fairtrade Association to jointly organize the "2023 World Fair Trade Day" at National Taiwan Museum. There was a series of activities focusing on daily life including "documentary screenings, sustainability markets, museum tours, and SDGs challenge." Inviting people to rethink every action in their lives, which may bring profound changes due to globalization.

On the day of the event, two fair trade-themed documentaries were screened for the public to watch and discussed. Nanya also designed a game inviting the public to challenge 25 things they should know about the SDGs to better promote fair trade and sustainability concepts.





## Work together with communities

Participate in public affairs in neighboring communities and create a harmonious and mutually beneficial living sphere



Sponsored NT\$1.05 million



Partnering unit : Taishan District Office

### 01 End of the year family gathering

Nanya adheres to the principle of giving back what is taken from society, and began promoting community harmony and responding to local needs in 2020, allowing local residents to receive assistance and increase public assistance for communities.

### 02 Zhongyuan Pudu

Zhongyuan Pudu is an important sacrifice in folk belief. Nanya has assisted Taishan District Office in organizing the Zhongyuan Pudu Sacrifice for a long time to promote traditional culture, in order to achieve community harmony and respond to local needs.

### 03 Local event sponsorship

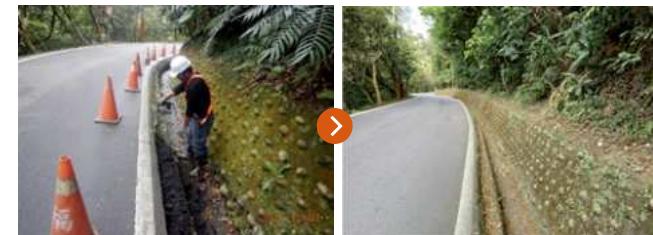
Nanya attaches importance to local events and sponsored small gifts for the Halloween event "2023 What is Taishan Up To" to give back to local residents.

### 04 Road widening

Nanya is located in Taishan District. The road connecting the fab is an important road section for employees commuting between Nanlin Technology Park, Nanya, and Taishan. However, this road section is narrow and the risk of driving during peak hours is high. During the expansion of the new fab, many trucks and engineering vehicles use the road, so the road is being optimized to improve road safety.



Side ditch capping



Side ditch dredging

## 7.3 Love Connection X Nanya Volunteer Team

**Love Connection Project** 8 projects completed

A total of 170 employees participated

Everyone has different ideas and opinions regarding different topics, interests, or social engagement projects. To encourage more employees to participate in social engagement activities on their own, the Love Connection Project was implemented in 2021, and employees can make proposals for charity events they are concerned about. The Company provides funding to implement the projects, so that the energy of charity can reach deep into the Company, allowing love to connect and expand. Eight projects have been completed as of 2023, taking root and growing stronger each year.

### Love Connection Project Implementation Rules



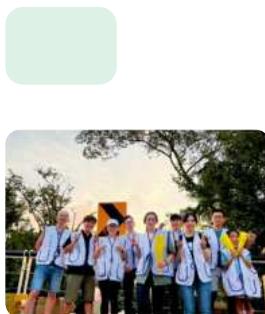
- Minimum 3 people are required to jointly make a proposal



- The maximum subsidy amount is NT\$50,000



- It accomplishes a good thing



Nanya volunteers independently support supply stations during the Father's Day Charity Road Run



Nanya Swimming Team Responds to Suppliers' Environmental Protection Activities



Cycling Club crosses Wuling to send love to Saint Mary's Hospital Taitung



Taiwan Rabbit Saving Association supplies collection - Employees personally delivers supplies to the association

**Nanya Volunteer Team** 105 members in 2023

Nanya Volunteer Team was established in 2021 to strengthen Nanya's social engagement capabilities. The president serves as the convener, executive vice president serves as the vice convener, and the vice president serves as the team leader to increase the team's appeal. Activities of the team were limited due to the pandemic after its establishment in 2021, making it hard to increase the number of participants. However, the pandemic subsided in 2022, and by 2023, there were 105 volunteers active in various charity events inside and outside the company, such as New Year charity stalls, Fair Trade Day volunteers, and environmental protection activities.

A single person can go fast,  
a group of people can go far

### Volunteer lectures

Two volunteer lectures were held in 2023. One is to promote popular trend of sustainability, such as: CSR, ESG, SDGs, carbon reduction, and net zero, given explanations of these concepts and used Nanya's actions as examples, so volunteers could understand the importance of sustainability issues. The other lecture introduced how the government, enterprises, and individuals can take action under climate-related environmental issues, such as carbon reduction and net-zero, to understand the contents related to future carbon issues.

### Volunteer visit day

Volunteers and their families are led to Yangmei Organic Farm where the staff introduced the farm's environment. All fruits and vegetables on the farm are grown organically. Volunteers experienced organic methods for growing crops at the farm and experienced the organic natural environment.

### Volunteer appreciation dinner

The volunteer appreciation dinner is held to appreciate the hard work of volunteers. At the same time, the convener and vice convener of the volunteer team commended honorary volunteers, increasing the sense of honor and cohesion of the volunteer team.

### 2023 Volunteer Team Footprints

- Engaged in 11 public welfare events
- Organized 2 volunteer lectures; 1 volunteer visit day; 1 appreciation dinner
- Volunteers participated 434 times

#### Chinese New Year Charity Sale

Volunteers assist charity organizations in displaying and selling products



#### Fair Trade Day event

Volunteers promote SDGs-related concepts



#### Volunteer lectures

Volunteers participated in a seminar to learn about SDGs and carbon reduction themes.



#### Volunteer appreciation dinner

Honorary volunteer recognition



#### Volunteer visit day

Volunteers and their families learned about crops at the Formosa Plastics Group's Yangmei Organic Farm

# 8 Integrity and Transparency

## A Trustworthy Company

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8-6 High-quality Company with Safety Certification	193



Nanya Technology Corporation adheres to regulations and abides by moral standards. We continue to strengthen corporate governance and risk management mechanisms and use comprehensive education and training programs to improve the professional ethics of all employees and build common prosperity in the industry to become the most trustworthy company.

### Risk management optimization

Obtained a declaration of compliance with ISO 31000 guidelines and principles

### 53 suppliers

Established an information security audit system for key suppliers, and completed risk assessments and coaching improvements for 53 suppliers

### TOP 5 %

Top 5% in the 10th Corporate Governance Evaluation of TWSE listed companies

# Strategy and Performance of Material Topics

Material Topics and Strategy	2023 Goals	Performance and Goal Achievement	2024 Goals
<b>Risk Management</b> <b>Risk Management</b> Establish effective risk improvement mechanisms and procedures. <b>Loss management</b> Operating stress test and lowering operating costs. <b>Effectiveness</b> Mobilize all employees for risk management training and regular drills for operating risks.	4 quarterly meetings and reported to the Board of Directors 2 times Emergency response plan completion rate: 55 items Stress test: Implement 7 aspects each year Education and training: 100% of all employees	 4 quarterly meetings and reported 2 times  69 items  9 aspects  100%	4 quarterly meetings and reported to the Board of Directors 2 times Emergency response plan completion rate: 55 items Stress test: Implement 7 aspects each year Education and training: 100% of all employees
<b>Business Integrity</b> Focus on both internal and external operations Implement regular internal education and training sessions and expand them to include external entities. Provide sufficient reporting channels and protection to cultivate professional ethics and legal compliance culture.	Material violations of regulations: 0 cases Corruption cases: 0 cases Employees' labor ethical training completion rate: 100% Employees' antitrust training completion rate: 100% Workplace violence: 0 cases Violation of trade secrets 0 cases	 0 cases   1 cases  100%  100%   2 cases  0 cases	Material violations of regulations: 0 cases Corruption cases: 0 cases Employees' labor ethical training completion rate: 100% Employees' antitrust training completion rate: 100% Workplace violence: 0 cases Violation of trade secrets 0 cases
<b>Customer Service</b> <b>Design and testing</b> Use global engineering support services to resolve issues with customer design and testing. <b>Production and sales</b> Implement rigorous control of quality and improve delivery efficiency. <b>After-sales services</b> Use the customer complaint management system to quickly resolve customers' issues	Customer satisfaction score: 91 points Customer participation in platform parameters measurement services: 935 cases Joint product verification services for customers: 24 cases Customer technical exchange and courses: 92 sessions	 94.5 points  952 cases  28 cases  92 sessions	Customer satisfaction score: Over 91 points Customer participation in platform parameters measurement services: 940 cases Joint product verification services for customers: 25 cases Customer technical exchange and courses: 92 sessions

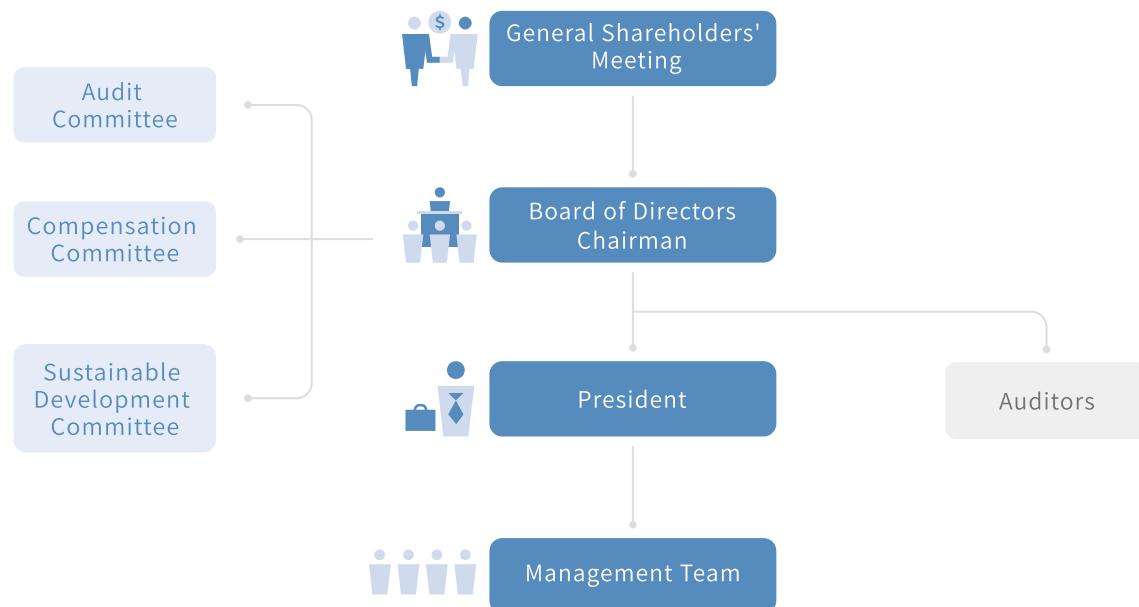
◆ Exceed   ◆ Achieved   ◆ Partially Achieved

Note 1: The anti-corruption actions are described in p.187

Note 2: For details on the handling of the two cases of workplace violence, please refer to p.62

# 8.1 Corporate Governance

Nanya believes that it can strengthen the Company's operations and ensure the rights and interests of the shareholders through sound and efficient corporate governance mechanisms. The Company is currently a constituent stock of the "TWSE Corporate Governance 100 Index" and ranked in the top 5% for the sixth time in the 10th Corporate Governance Evaluation of TWSE listed companies announced in 2024, which affirms the Company's continued efforts in corporate governance.



## Operations of Board of Directors and Functional Committees

Nanya's Board of Directors complies with relevant laws and regulations and resolutions of shareholders' meeting in its operations. The Board members possess professional knowledge, skills, and qualifications required for the performance of their duties, and they shall maximize the interests of the shareholders based on sustainable development of the Company. The main responsibilities of the Board of Directors are to ensure information transparency and legal compliance, appoint the chief executive, formulate earnings distribution proposals, and supervise and provide guidance for the Company's operations.

To establish a sound governance system for the Board of Directors, enhance its supervisory functions, and strengthen its management capabilities, the Company has formulated the [Rules of Meetings of the Board of Directors](#), which stipulate the relevant provisions for conducting its business to ensure compliance. A total of 5 Board meetings were held in 2023 with an average attendance rate of the directors of 98.3%.

### • Management of Conflicts of Interest

Nanya has included provisions on avoiding conflicts of interest in the rules for the Board of Directors meetings, and the charters of the Audit Committee, Compensation Committee, and Sustainable Development Committee, as well as in the ethical corporate management principles. The directors, managers, and stakeholders attending or participating in board meetings or committee meetings shall state the significant contents of their interests if they or the legal entities they represent have conflicts of interest with the matters listed on the agenda of the meeting. When there is a risk of harming the interests of the Company, they shall not participate in the discussion or voting and shall recuse themselves from the discussion or the voting. Nor may they vote on behalf of other directors. Furthermore, the Company has the [Codes of Ethics for Directors and Managers](#), which require relevant personnel to uphold moral principles in the performance of their duties and to avoid personal interests or potential conflicts of interest that may affect the overall interests of the Company, in order to prevent actions that may damage the Company and shareholders' equity.

### • Nomination and Election of Board Members

The Company has established fair, just, and open [Rules for the Election of Directors](#), encouraging the shareholders to participate in the nomination and election of directors. The candidate nomination system and cumulative voting method are used for the election of directors, in accordance with the Company Act and relevant laws and regulations. In addition, Nanya's [Articles of Incorporation](#) stipulate that the Board of Directors shall consist of 9 to 12 directors, including at least 3 independent directors, with a 3-year term. The Company has also established regulations for evaluating the performance of the Board of Directors and conducts performance evaluations regularly every year. The evaluation results can serve as a reference for nominating directors for re-election.

## • Board Diversity

Nanya's [Corporate Governance Principles](#) stipulate that the composition of the Board of Directors shall be determined by taking diversity into consideration, including but not limited to gender, race, and nationality. The current-term Board of Directors consists of 12 members from diverse professional backgrounds, including 4 independent directors and 2 female directors, accounting for 33% and 17% of the total, respectively. Among the independent directors, one has an accountant certificate, and no independent director concurrently serves as an independent director of more than 3 other public companies. There are 8 directors who are not employees of Nanya, accounting for 67% of the total, and the Chairman of the Board also does not serve as a senior manager of the Company, with clear separation of responsibilities. As of the end of 2023, 3 directors were aged 51-60, 3 directors were aged 61-70, and the remaining directors were over 70 years old. In addition, the average tenure of the directors is 10.4 years.

 Implementation of the Board Diversity

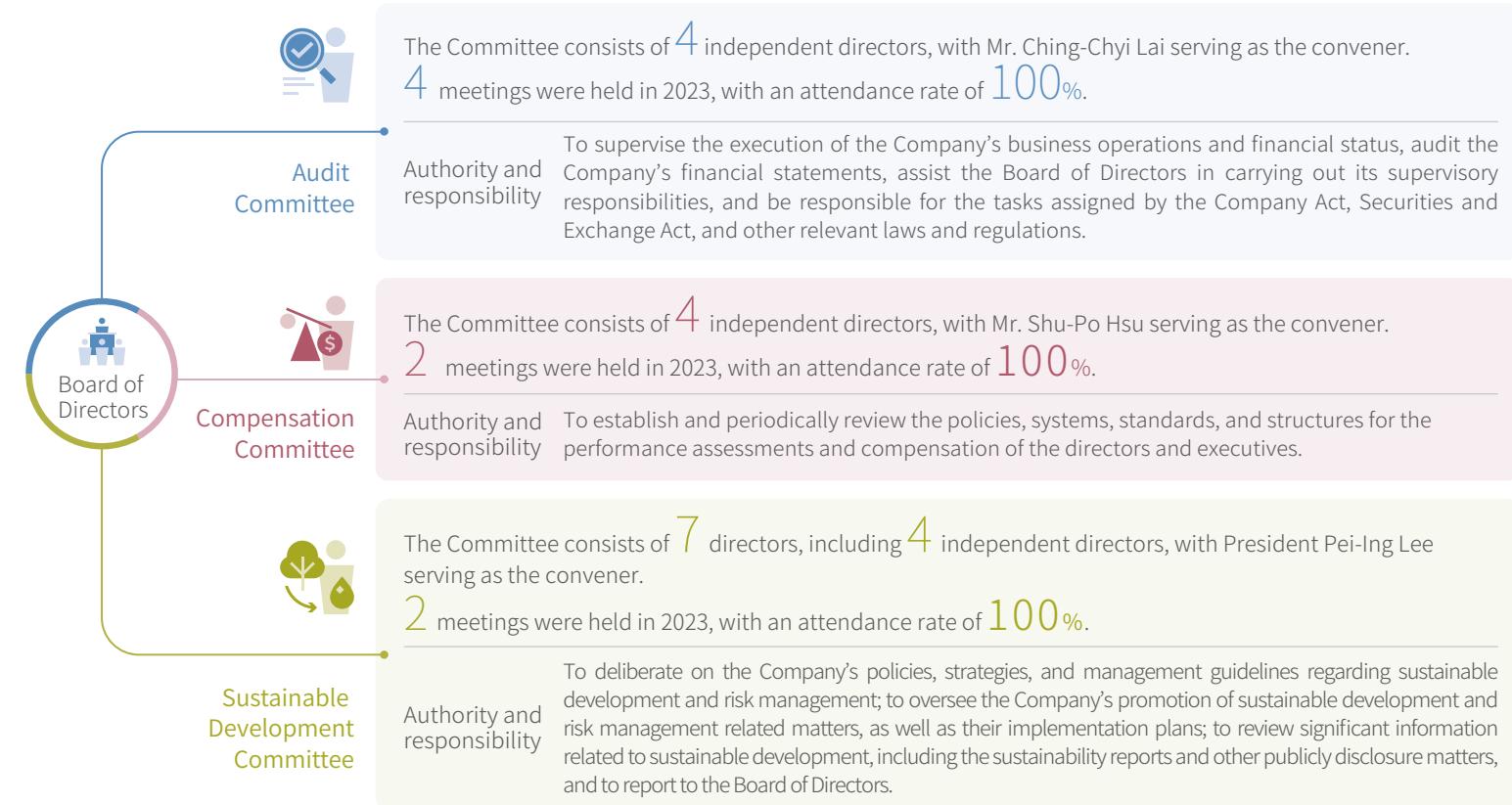
## • Professional Courses for Board Members

To enhance professional competencies of the directors, the Company arranges at least 6 hours of training courses for the directors every year. In 2023, the directors received a total of 82 hours of training courses, with an average of 6.8 hours per director. The courses cover a diverse range of subjects including economics, corporate governance, risk management, sustainable development, climate change, carbon trading and carbon management, and legal compliance, and more. Please refer to pages 59-60 of Nanya's [2023 Annual Report](#) for training courses of the directors in 2023.

In addition to diverse professional backgrounds, Nanya's directors have experiences as senior managers, government officials, or public representatives, so they possess diverse abilities required to perform the duties of directors. In 2024, the Company plans to arrange for the directors to take training courses on sustainable development, corporate governance, or risk management, in response to development trends in sustainability topics and corporate governance, and thereby strengthen the overall competencies of the directors.

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

To enhance supervisory functions and strengthen management mechanisms for the Board of Directors, Nanya has established the Audit Committee, Compensation Committee, and Sustainable Development Committee under the Board of Directors. Each functional committee is accountable to the Board and submits its proposals to the Board for resolution.



To implement corporate governance and enhance functions of the Board of Directors, the Company has established the [regulations of Performance Evaluation of the Board of Directors](#), incorporating indicators related to corporate sustainability such as "legal compliance", "corporate governance", "risk management", and "sustainable development" into the evaluation criteria. The Board of Directors and its functional committees undergo performance evaluations annually. In 2023, performance evaluations were conducted for the overall Board of Directors, individual directors, as well as the Audit, Compensation, and Sustainable Development Committees. According to the evaluation results, the Audit and Compensation Committees were rated as "excellent", while others were rated as "good". The results were reported to the Board of Directors on November 8, 2023. Please refer to pages 33-34 of Nanya's [2023 Annual Report](#) for the implementation of performance evaluations in 2023.

## Compensation of Directors and Senior Executives

The Company's independent directors receive a fixed amount of compensation each month, traffic fares based on attendance of Board meetings, and do not receive any variable remuneration. Other Directors only receive traffic fares based on attendance of Board meetings and do not receive any variable remuneration. All Directors do not receive Director's remuneration.

The compensation of managerial officers of the Company includes monthly salaries and various bonus systems, pension systems, and evaluation systems approved by the Compensation Committee. They are reported to the Board of Directors for approval before implementation. Members of the Remuneration Committee are all independent directors and provide external remuneration recommendations. The committee meets at least twice a year to ensure the reasonableness and competitiveness of remuneration.

The salary adjustment, bonuses, and other compensation of senior executives are determined in accordance with the Company's operations and personal performance and contributions. The Company included their economic, environmental, and social contributions and other corporate governance indicators for sustainable development. The Company also references salary standards in the industry and assigns the Human Resources Department to draft recommendations and report them to the Compensation Committee. The Committee Member shall review the recommendations and submit them to the Board of Directors for approval and execution.

Remuneration of the president and vice presidents is in accordance with Company rules, and includes fixed compensation, such as fixed salary, diligence incentive, and year-end bonus, monthly pension contributions (including new and old pension system) according to the Company's retirement regulations, and employee welfare funds; variable compensation includes special incentives, incentives, and employee bonuses paid for special situations according to the Company's retention measures and business performance.

### Taiwan



The Company's highest paid employee in 2023 received approximately **16.05** times the median total pay of other employees.

The increase in pay of the highest paid employee in 2023 compared to 2022 is **1.72** times that of the increase in median total pay of other employees.

In addition to annual performance evaluations, 360-degree evaluations and sustainable development evaluations on the following aspects are also convened for senior managers.

- ◆ Economic Performance
- ◆ Comprehensive customer service
- ◆ Business Integrity
- ◆ Sustainable Supplier Management
- ◆ Sustainable management mechanism
- ◆ R&D and Innovation
- ◆ Occupational Health and Safety
- ◆ Greenhouse gas management and energy management under climate change
- ◆ Resource recycling
- ◆ Eco-friendly products
- ◆ Employee growth and career development
- ◆ Talent Retention and Employee Care
- ◆ Risk Management



### Shares Held by Senior Executives

March 31, 2024

Title	Name	Shares	Title	Name	Shares
President	Pei-Ing Lee	1,015,098	Assistant Vice President	Mark Mao	0
Executive Vice President	Lin-Chin Su	480,601	Assistant Vice President	Jeff Lin	250,027
Vice President	Joseph Wu	380,000	Assistant Vice President	Rex Chen	26,000
Vice President	Rex Chuang	459,000	Assistant Vice President	Chuan-Jen Chang	173,048
Vice President	Yau-Ming Chen	0	Assistant Vice President	WooDer Yang	0

## 8.2 Risk Management

Nanya established the Sustainable Development Committee under the Board of Directors to strengthen board functions and risk management mechanisms. The committee supervises the implementation of risk management, environmental protection, social responsibility, and corporate governance to help the Company achieve sustainable operation. The [Sustainable Development Committee Charter](#) stipulates that the committee shall have no less than 3 members, and half or more of all members must be independent directors. The committee is currently formed by 4 independent directors and 3 executive directors; all 7 members have an expertise in crisis management and risk management.

Nanya formulated the [Risk Management Regulations](#), which was approved by the Board of Directors. In accordance with the Risk Management Regulations, the risk management policies are effective identification, analysis and assessment, control and action, ongoing supervision of various risks, and enhancement in risk awareness of the staff, with the aim of controlling risks within the tolerance level, and ensuring the integrity, effectiveness, and efficiency optimization of risk management.

### Missions and Commitments

#### Risk Management Missions

We will establish and maintain effective risk management systems and constantly improve them, lower operation cost to ensure corporate sustainable profits, and create a quality working environment to achieve the goals of corporate sustainable operation.

#### Risk Management Commitments

- All employees shall adhere to their commitments and managers in particular should lead by example and fulfill their supervisory responsibilities.
- We shall ensure that employees of all levels receive adequate training and have the skills for performing various risk management tasks to ensure the normal operations of the Company.
- We shall provide necessary resources to maintain the effective operations of risk management mechanisms and continue to implement improvements to reduce risks.
- We shall strengthen communication with stakeholders, increase the risk management awareness of all employees, and fulfill our risk management policy.

### Organization and Operations

The Board of Directors is the highest level decision-making and supervision unit for risk management, and is responsible for establishing the Company's risk management policy and regulations. The Board of Directors supervises the implementation of the risk management system and the effective operation of its mechanisms. The Sustainable Development Committee reviews the Company's risk management policies, strategies, and management approach, and supervises the Company's implementation of risk management matters and implementation plans to achieve risk management goals. The Sustainable Development Committee meets at least twice a year and reports the situation of risk management or major risk items to the Board of Directors in a timely manner.

In order to ensure smooth and effective risk management operations, Nanya has established a three-line defense mechanism as shown in the organizational chart below.



Nanya established the Risk Management Steering Center in accordance with the [Risk Management Regulations](#). The executive vice president serves as the center's director and members are assigned by each department head based on tasks. The Steering Center is responsible for promoting and supervising the work implementation of each risk management team, as well as overall risk management. Moreover, to conform with the Company's operational strategies, the Steering Center set up five functional teams, i.e., industrial and operational, finance, information security, hazard, and legal, under its purview. The risk management team are formed by dedicated personnel appointed by each business management department. Besides assisting business management departments with gathering information on risks of internal and external environments and performing daily risk monitoring, the risk management team also track and assess the risk level of risk factors, take improvement measures, and report implementation results of risk management to the Steering Center.

The Company established the "Sustainability and Risk Management Division," a dedicated risk management organization, to implement risk management and operations. The Division's main task is to assist the Risk Management Steering Center in formulating management approaches, planning and implementing relevant activities, and supervising the operations of each risk management team, so as to properly control risks.

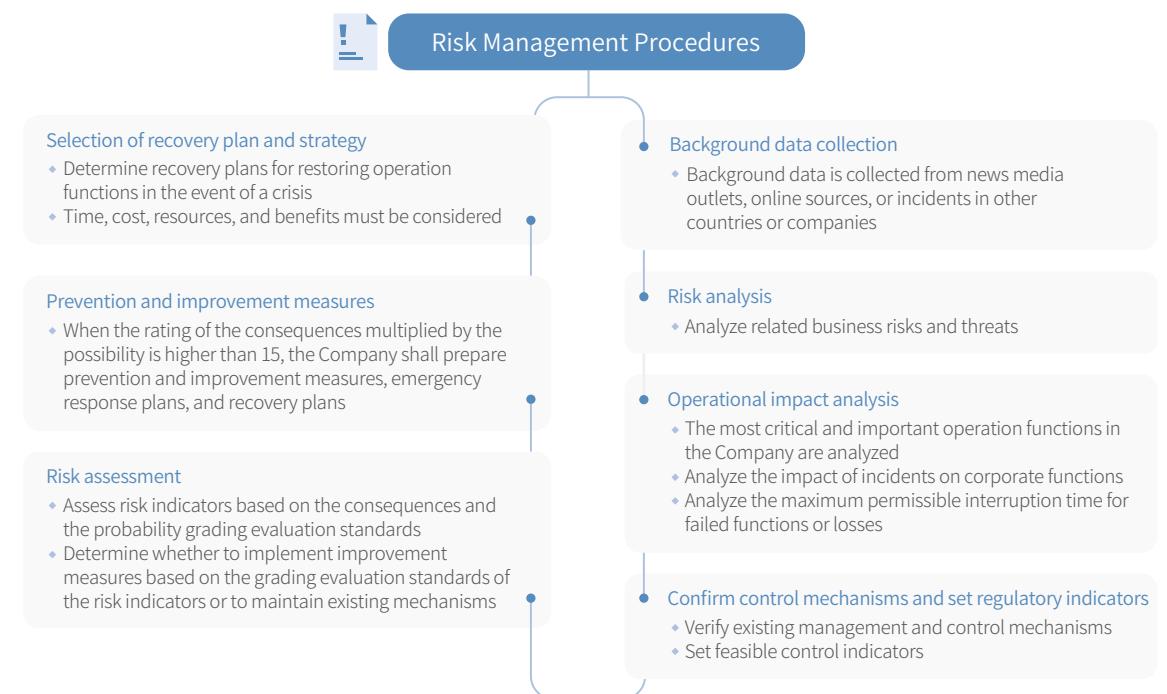
The Risk Management Steering Center meets quarterly to review the operational performance and business continuity plans of each risk management team, so as to ensure the applicability, suitability, and effectiveness of their operations.

The Corp. Auditors shall annually check the implementation status of risk management policies and higher risk items, provide suggestions for improvements in a timely manner, and track improvement results, and regularly report the implementation status of audits and improvements to the Audit Committee to effectively control the Company's existing or potential risks. In addition, we commission a third party to conduct external audits every two years to verify the implementation of the Company's risk management system. The most recent audit was completed in June 2023, and a statement of compliance with the ISO 31000 guidelines and principles and effective implementation was obtained.



## Risk Management System

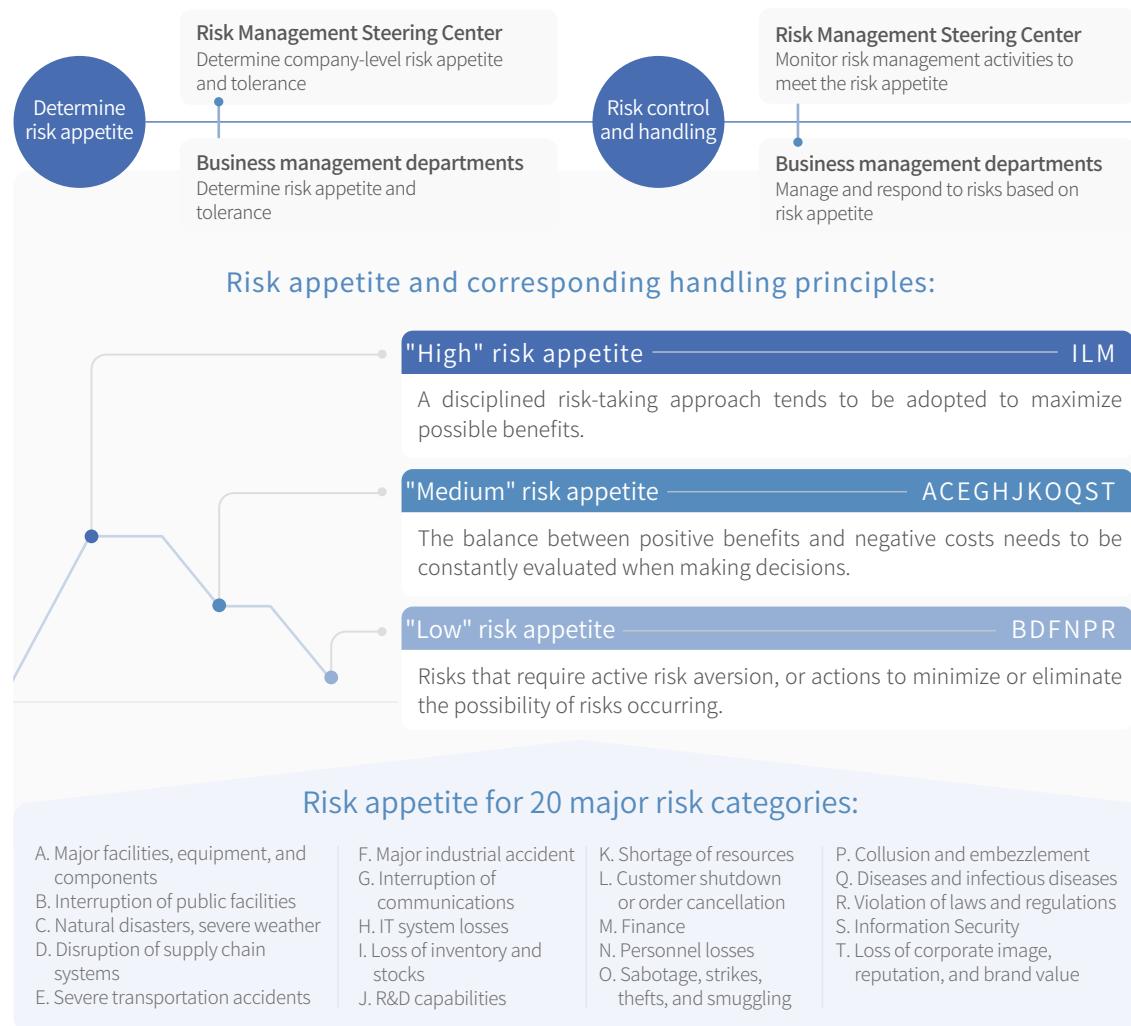
Nanya's risk management systems are used to identify and analyze risks currently faced by the Company, establish suitable risk appetite and control procedures, and supervise compliance with various risks and risk appetite. We adopt risk management systems and uncover the Company's potential risks and opportunities to effectively execute risk management and ensure normal operations of the Company. We create value for shareholders, employees, customers, and society to achieve sustainable development goals for the Company.



In accordance with the mechanisms and values of the ISO 31000 Enterprise Risk Management (ERM) Guidelines, Nanya formulated risk management policies and procedures in combination with our strategic goals for long-term operations to serve as guiding principles. We list risks with externalities, new risks, and risks with significantly higher importance or potential long-term, significant, or specific impacts as emerging risks, which are reviewed and tracked over the next three to five years. Through long-term planning and promotion, we aim to raise the risk awareness of all employees, and further internalize the awareness in daily management to ensure the normal operations of the Company.

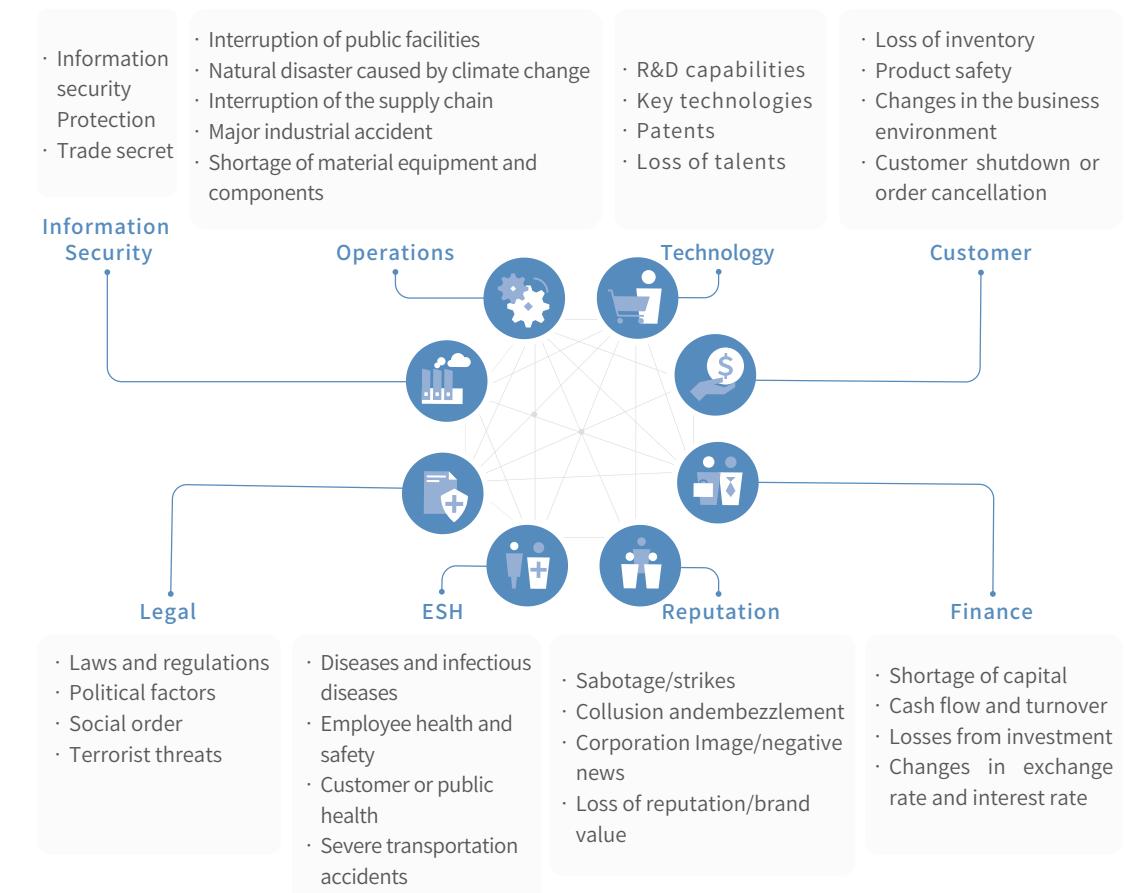
## Risk appetite for major risk categories and handling principles

When the Company's departments that manage each business conduct risk analysis and assessments, they analyze the attributes and impacts of risk factors that were identified, and suitable quantitative or qualitative assessment indicators are established to assess the risk level. The risk appetite and tolerance are also determined and summarized by the Sustainability and Risk Management Division, which reports it to the Risk Management Steering Center for resolution. This provides the basis for routine risk control. The Risk Management Steering Center reviews risks and takes relevant measures on this basis to ensure that various business strategies comply with the principles for handling the risk appetite.



## Relevance of Risk Factors

We verified potential risks, threats, and operational impacts in the internal and external environment with respect to company operations, technologies, customers, finance, reputation, ESH, Legal, and information security based on the risk management system. We analyzed risk factors with the highest correlation, and periodically review prevention and improvement measures through quarterly meetings, so that standard operating procedures will be more thorough. We periodically conduct drills of emergency response measures to effectively minimize risks.



## Emergency Response Mechanisms and Measures

The Company complies with the principle, framework, and spirit of ISO22301 when applying them in emergency response mechanisms and measures and completing certification of ISO9001, ISO14001, ISO50001, ISO27001, and ISO45001. To reduce risks and damage of emergency incidents, Nanya has a complete set of operational norms and methods for handling emergency anomalies, covering manufacturing, supply chain and warehousing, information security, human resources and other aspects. We can immediately take response measures in the event of an emergency, mitigate the impact of the incident and quickly recover, and ensure normal operations to meet client needs. For example, raw material shortage, incidents that affect 10% of output (such as earthquakes, typhoons, toxic gases, fire alarms, labor shortages etc.), abnormal utilities systems, abnormal automation systems, abnormal outsourcing capacity, and large number of customer returns, all have specific treatment steps and improvement measures.

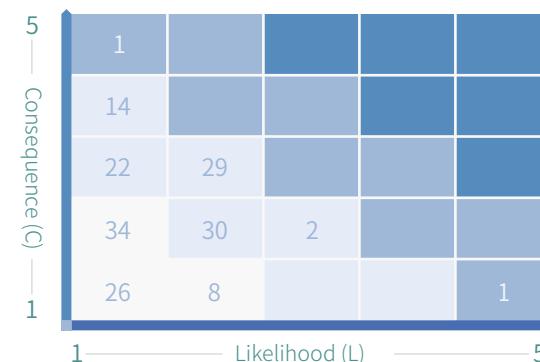
In addition, the emergency response to personnel safety, such as fire alarm, gas leakage, leakage, odor, earthquake and radiation leakage, emergency response measures, notification procedures and command systems are all in accordance with relevant environmental health and safety regulations. The Company organizes at least one emergency evacuation drill and two fire safety drills each year to ensure the effectiveness of emergency response measures.

## Risk Identification and Stress Testing

### Risk Identification Results

Nanya annually identifies risk items proposed by the Risk Management Steering Center. We took response measures against identified risk items based on risk levels. A total of 168 risk items were proposed in 2023, and the risk profile and the distribution of risk items and quantities were specified below after identification. Based on the statistics, 0 items needed immediate improvement; 2 items required improvement plans, 98 items should have indicators set up for monitoring, and 68 items were kept under observation.

### Distribution of risk items



Evaluation criteria of consequence: 1 = mild; 5 = severe  
 Evaluation criteria of likelihood 1 = rare; 5 = always

#### Response measures

- Kept under observation
- Set up indicators for monitoring
- Require improvement plans
- Immediate improvement

### • Response Measures to Risks

After risk identification, items that required improvement plans were mainly 1 item related to operations (System optimization in response to regulatory changes to comply with regulations) and 1 item related to information security (FAB machines may be subject to cyberattacks or damage). Each risk management team formulated and implemented response measures for the risk items, and also established handling mechanisms.

#### Risk type



#### Operational risk

#### Main response measures

- ◆ Supply chain: Geopolitical risks such as the Russo-Ukrainian War, China's control over germanium/gallium exports, the Israeli-Palestinian conflict and the Red Sea crisis may cause the crisis of broken supply chains. In addition to immediately taking inventory of suppliers and supply items in the affected areas, we are searching for alternative suppliers for potential risk items and increasing safety stock in response.
- ◆ Electricity: Different electricity rationing scenarios are simulated each year, and emergency response drills are conducted. We continue to track power development projects and stable power supply measures of the government and Taiwan Power Company, in order to assess related risks and respond in a timely manner. Emergency power generators and DUPS equipment and response measures of our fabs were able to effectively respond to voltage drop, electricity rationing, and major events of abnormal power supply in recent years, and did not cause any severe production incidents.
- ◆ Air pollution: The "Air Pollution Control and Emissions Standards for the Semiconductor Industry" was amended on May 4, 2023, making standards for concentration of volatile organic compounds (VOCs) and acidic pollutant emissions from current processes even stricter. After outsourcing testing, some items have exceeded the standard or is at risk of exceeding the standard, and relevant improvement measures have been evaluated. An improvement plan has been submitted to the Department of Environmental Protection in accordance with regulations. Currently, there are no concerns about penalties affecting production.
- ◆ Differentiated management is implemented through supplier classification and grading. We designed a self-assessment questionnaire (SAQ) for suppliers to assess their current information security status, and use third-party SSC (Security Score Card) ratings as the basis for suppliers to assess their overall information security risk. At present, 54 suppliers have completed the SAQ and third-party SSC, and on-site audits have been completed for 5 suppliers. The Company called 7 suppliers with poor SAQ scores (lower than 85 points) to its fab for communication, review, and improvements. There are 12 suppliers with SSC scores lower than 80 points, and the SSC evaluation reports were provided for improvement.
- ◆ Added the risk "FAB machines may be subject to cyberattacks or damage", the probability of occurrence is low (1) but the severity is extremely high (5), so it is a risk that requires an improvement plan. We plan to install a fab OT information security system to monitor the list of assets and network topology, implement vulnerability management and risk assessment, and use AI for big data analysis, so as to achieve early discovery of potential threats and lower the severity of risks.



#### Information Security Risk

## Risk type



Legal Risk

## Main response measures

- ◆ **Compliance with the Personal Data Protection Act/Anti-espionage Law:** In response to the personal data protection regulations of the European Union, United States, China, and Taiwan, the Company has obtained the consent or authorization of employees and customers to use their personal data, and updated labor contracts and employee manuals of overseas subsidiaries. With regard to cross-border transmission of information, we have signed cross-border agreements that comply with the regulations of each country or the official version agreements. Due to the vague enforcement standards of China's Counter-Espionage Law, the Company has updated its business travel instructions, and communicated related matters through education and training, so as to reduce the risk of employees on business trips breaking the law. Currently, there is no significant impact on the Company's operations.
- ◆ **Compliance with the climate change regulations:** As regulations related to climate change are currently too uncertain, the Company cannot reasonably assess the impact on its future financial position. We expect that the legislative authorities will enact more relevant laws in the future, and the Company will continue to monitor the impact on operations and adjust plans to ensure operational resilience. The carbon fee system is expected to become effective in 2024. If emissions exceed the applicable threshold stipulated in the carbon fee system, the Company may need to pay the resulting carbon fee, resulting in an increase in operating costs. However, changes in relevant laws and policies currently do not pose a significant financial risk to the Company's business.
- ◆ **Intellectual property protection:** The Company has formulated an intellectual property management strategy and deepened its patent portfolio. We also included the protection of trade secrets into the training course for new employees, and require employees to strictly abide by their obligation of confidentiality. The Company established information security management regulations to protect data safety and customer privacy. We raise employee awareness to protect the Company's confidential information and improve their knowledge of regulatory compliance through education and training, thereby lowering the risk of information leakage. The implementation progress is reported to the Board of Directors each year, and is disclosed on the official website.
- ◆ **Compliance with antitrust regulation:** The Company has collaborated with legal experts of different countries, periodically gathered international antitrust standards and enforcement status, and comprehensively promoted the compliance with antitrust regulations to the staff. Currently, we have only one antitrust lawsuit case being appealed in the courts in Brazil, and this has no material impacts on our operations.

The sales of DRAM products are mainly conducted in US dollars. The Company established an offshore subsidiary at the end of 2018 to reduce the impact of exchange rates on the US dollar positions held by the parent company. In the future, we will continue to periodically review and manage the US dollar positions and implement the following practices:

- ◆ Convert the US dollar cash to the New Taiwan dollar and keep the lowest US dollar positions;
- ◆ Evaluate the use of pre-selling Foreign Exchange Forward to lower the exchange rate risk of accounts receivable;
- ◆ Evaluate the increase in debt denominated in US dollars to offset the exchange rate risk of accounts receivable for retention of reasonable US dollar net positions to reduce the impact of appreciation (depreciation) in New Taiwan dollars on profit and loss.

## Risk type



Hazard Risk

## Main response measures

- ◆ **Risk management for management systems:** By implementing operations of EHS management systems (ISO45001 & ISO14001), we continue to identify potential EHS risks in operating activities, set indicators for continuous monitoring of low-risk items, and propose and implement tracking and improvement plans for medium and high-risks. If an accident occurs and it is an unacceptable risk, related departments are required to analyze the root cause and promote it to all employees for a comprehensive review, in order to prevent recurrence.
- ◆ **Key construction safety management:** Construction projects are high-risk and prone to major occupational accidents. The safety management of the company's expansion (construction) projects (expansion of Fab 5A, construction of nitrogen site) is the focus of annual risk management, in order to eliminate or reduce the risk of major occupational accidents during the project period. The Safety and Health Division not only dispatched additional manpower to conduct daily inspections and audits of the work site, but also continues to cooperate with relevant departments of the Company to conduct special audits and strengthen management systems. It also participates in monthly meetings of each construction site collaboration organization, provides contractors with guidance for site safety management, and also requires contractors to review deficiencies and propose fundamental improvement measures.
- ◆ **Complete planning to mitigate impact:** Implement enterprise risk management (ERM) by continuing to identify potential risks and formulating response measures for different levels of risk, in order to mitigate the impact of events. Improve BCP/BCM to restore the affected parts as soon as possible to reduce operating losses.

## • Sensitivity analysis and stress testing

Nanya conducts sensitivity analyses and stress testing on main risks in each aspect on an annual basis, including: financial (exchange rate) and non-financial (e.g. water resources, electricity supply, markets, operational strategies, occupational accidents from expansion, interruption of production, compliance, and information security) risks.

## The Company's sensitivity analysis or stress testing results are as follows:

## Finance Risk



Exchange rate

## Sensitivity analysis or stress testing

- ◆ The sales of DRAM products are mainly conducted in US dollars. To reduce the impact of exchange rate fluctuations on profit and loss, the Company established an offshore subsidiary at the end of 2018, which reduced the impact of exchange rate fluctuations on the US dollar positions held by the parent company.
- ◆ If NTD appreciates against USD by NT\$0.84 from 30.74 (at the end of 2023) to 29.90 (end of 2024), the foreign exchange loss may reach NT\$250 million.
- ◆ Foreign exchange losses are book value losses, not cash outflows, and the amount of foreign exchange losses is currently estimated to have a minimal impact on the Company's net worth. We will continue to observe exchange rate trends in the future and take response measures accordingly.

## Non-financial risk



## Water resources

## Sensitivity analysis or stress testing

- ◆ We reviewed the Company's internal and external water supply and water storage systems, and simulated various phases of water rationing. With self-owned backup wells that could provide 5,500 CMD, water tanks with capacity of 43,000 tons, and allocatable well water of 3,600 CMD from wells of the Chang Gung Golf Club, the Company could maintain 47 days of normal production at the plants under the situation that raw water supply was totally cut off.
- ◆ Possible scenarios under the simulations of phase-one, two, and three water rationing: If raw water suppliers were cut off for two, three, four, or five days per week, all these would not impact our production.

## Power supply

- ◆ Power outages severely affect the Company's production. Our important production systems and equipment are all connected to in-plant emergency generators and the DUPS system, so the impact of a sudden drop in voltage or planned power rationing imposed by Taiwan Power Company (TPC) can be mitigated.
- ◆ We reviewed the Company's internal and external power supply systems and conducted simulations for conditions where the TPC reduced the contract capacity by 5%, 10%, 15%, or 20%. With the in-plant emergency generators and the DUPS support, we could maintain normal operations of the plants. If the external power supply is cut completely, it would cause losses from suspension of production. Based on the 2023 revenue of NT\$29.9 billion, the impact on operating losses will be approximately NT\$2.5 billion per month.

## Average price and sales volume

- ◆ The Company regularly conducts sensitivity analysis on sales volume and selling price to verify the achievability of business goals and formulate response strategies and plans.
- ◆ We observed the following based on the analyses in 2024:
  1. The price is expected to increase by 38% compared with 2023, and EPS changes if the annual change is between 29% and 47%.
  2. Sales volume is expected to grow by 34% compared with 2023, and EPS changes if the annual change is between 27% and 40%.

## Profit and loss forecast sensitivity

- ◆ The Company conducts sensitivity analyses for the establishment of sales and production strategies. The analyses were implemented with sales price variations of 90%, 110%, and 120% of target sales prices under respective sales and production product portfolios and they showed the impact on the profit and loss of all product portfolios. We use the results of the analyses to select favorable sales and production strategies.

## Non-financial risk



## Occupational accidents during expansion

## Sensitivity analysis or stress testing

- ◆ We conducted a stress testing to assess the risk of an occupational accident causing death of contractor personnel during the expansion of Fab 5A.
- ◆ Evaluation results are described below:
  - 1.If an occupational accident causes the death of 1 employee of the construction contractor, it may result in the suspension of work in some areas of the construction site, and the amount of compensation for worker that is killed is approximately NT\$4-20 million. After assessment, this will not have a significant impact on the project and operations.
  - 2.If a large-scale construction site safety incident occurs (such as the collapse of large-area formwork grouting, etc.) and causes several casualties, the project may be completely suspended for required improvements. The suspension is estimated to take about 2 months until the resumption of work is approved, resulting in an estimated production capacity loss of approximately NT\$1.9 billion.
  - 3.It may also cause other negative impacts on the Company's operations (such as: company image, etc.)
- ◆ Risk management direction:
  - 1.With regard to the impact on labor inspection, Formosa Plastics Group, disaster victims, and company image, this risk can be transferred by handing over project management to a general contractor in a contract, with the contractor acting as the responsible person of the construction site.
  - 2.In response to the impact of expected production capacity losses, risks can be reduced by strengthening construction site safety management and supervision capabilities to avoid occupational accidents.

- ◆ A stress test was conducted to assess the risk of Y steel leak in the existing silicon methane (SiH4) supply area of the production plant causing a fire, affecting the backup system and causing supply to be suspended.

- ◆ Evaluation results are described below:
  - 1.If a Y steel leak causes a fire in the SiH4 supply area, it will cause supply to be suspended and affect the production of some DF and TF equipment.
  - 2.The reconstruction of supply equipment and post-disaster recovery is expected to take 2 months, and production losses during this period are estimated to be NT\$1.9 billion.
  - 3.If the media reports on the accident, it may have a negative impact (such as: company image, etc.)

- ◆ Risk management direction:
  - 1.Strengthen hardware protection: Raising and extending the retaining wall between Y-steel in the SiH4 supply area can reduce the impact of high temperature on one Y-steel when the other one catches fire.
  - 2.Ensure that supply equipment is maintained and inspected, fire detection and fire extinguishing systems function normally, and use existing protection and building planning to limit the scope of disasters.
  - 3.Also strengthen and increase the mutual supply backup system between the two fabs, and strengthened emergency response to reduce the loss of on-site equipment or the scope of impact caused by fire.



## Interruption of production



## Market



## Operational strategy

## Non-financial risk



Compliance Involving U.S. Antitrust Laws

## Sensitivity analysis or stress testing

- ◆ A stress testing was conducted to assess risks of violating U.S. antitrust laws.
- ◆ Evaluation results are described below:
  - 1.If the profit from the sale of memory modules for servers shipped to the United States is US\$3 million, and assuming that the victim determines the amount of damages based on our actual profit.
  - 2.For criminal fines, companies can be fined up to US\$100 million; For civil compensation, punitive damages can be up to three times the actual profit, which is approximately US\$9 million or converted to NT\$2.8 billion.
  - 3.It may also cause varying degrees of negative impacts (such as: company image and stock price fluctuations, etc.).
- ◆ Risk management direction:
  - 1.Impacts of cooperating with investigation procedures, payment of litigation fees, company image, and financial position: By evaluating all internal evidence, we determine whether a settlement should be reached as soon as possible to obtain a more advantageous position and conditions for settlement negotiations, so that we can get out of the lawsuit as soon as possible or reduce liability, and effectively control litigation costs to reduce risks.
  - 2.For the impact of senior executives and employees breaking the law: We ensure the implementation of the regulatory compliance plan by providing employees/high-risk personnel with regulatory compliance training and regularly conducting internal audits. We also plan director and supervisor liability insurance to transfer risks.

## Hacking incident

- ◆ In response to the increasing number of hacking incidents in recent years, companies not only need security measures to face the threat of hackers, but also conduct periodic reviews and drills for handling hacking incidents, in order to verify its procedures and tools and improve its proficiency.
- ◆ Once a hacking incident occurs, the company is in a race against time from reporting, response to recovery. Reviews and drills evaluate or test the timeliness of each phase, and operations are standardized or automated to simplify and improve overall timeliness and reduce the impact of hacking.
- ◆ Based on the assessment of various hacking incidents, we determined the priority of restoring various types of computers in the information environment with the goal of reducing damages, in order to achieve prevention, incident detection, and damage control goals.
- ◆ If the Company is unfortunately damaged by ransomware or other malicious software, in the worst case scenario and using the manpower available for calculations, it will take about 4 days to restore physical servers and virtual servers that must be prioritized, which translates into an operating loss of approximately NT\$300 million.

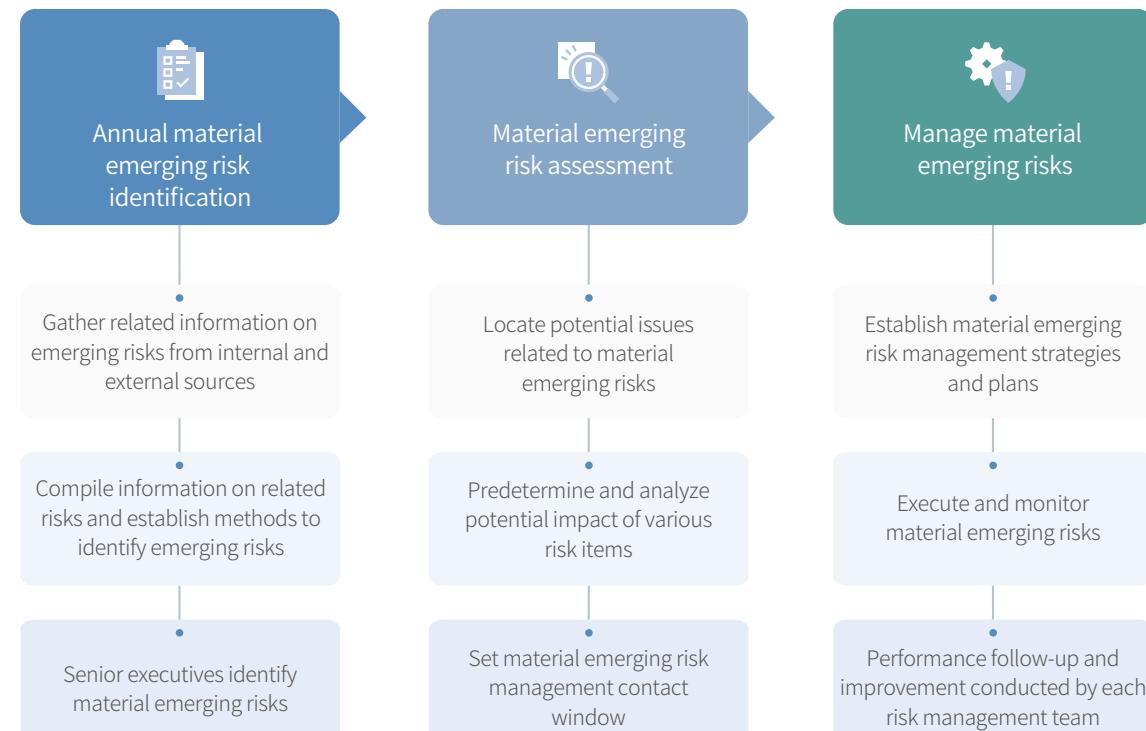


Information security

## Emerging Risks

Nanya pays close attention to changes in the economic environment. We identify long-term risks and opportunities and adapt our business strategies to ensure sustainability and long-term operating performance. Each risk management team or managers at each level gathers related domestic and international information to evaluate potential risks in the Company's long-term operations. They used questionnaires or evaluations in meetings of senior executives to identify emerging risks with the highest level of potential impact in the future and review mitigation and response strategies. The topics and strategies are used as important references for formulating future business strategies.

## Emerging risk assessment process



Department heads gathered emerging risks in 2023, and senior executives identified four material emerging risks. Nanya has formulated response countermeasures while continuing to implement improvements with the aim of mitigating related impacts.

## Emerging Risk 1

Major countries localizing DRAM manufacturing will impact the Company's future business development

Geopolitics

### Risk description

- ◆ Nanya and its oversea subsidiaries continue to pay close attention to relevant laws and industry policies in the United States, Japan, China and the European Union to adjust sales strategies and goals in a timely manner.
- ◆ Some countries have strengthened local DRAM production through subsidy policies, which may have a significant impact on Nanya's future product exports.
- ◆ Some countries may protect the production and sales of local DRAM manufacturers through measures such as raising tariffs in the future, which may have a significant impact on Nanya's future product exports.
- ◆ In the pursuit of localized semiconductor manufacturing, the demand on key semiconductor talents has significantly increased in major countries, which will worsen the migration of outstanding local R&D and manufacturing talents.

### Impact

- ◆ Some countries are providing subsidies for DRAM manufacturers to build or expand local production capacity. Nanya does not enjoy subsidies for the expansion of new fabs, which will affect cost competitiveness.
- ◆ Some countries use policies to subsidize or restrict local electronic product manufacturers to only purchase locally produced DRAM products, which might affect Nanya's local sales.
- ◆ In the future, some countries might increase tariffs to limit the local sales of other countries' products, and Nanya's products may lose price competitiveness, which will impact revenue.
- ◆ Nanya is building a new fab and is expected to recruit a large number of employees within five years. A shortage of employees will impact the time it takes for the Company's new fab to reach mass production, and business growth will be limited.

### Mitigating actions

- ◆ Nanya and its oversea subsidiaries continue to pay close attention to relevant laws and industry policies in the United States, Japan, China and the European Union to adjust sales strategies and goals in a timely manner.
- ◆ Monitor the progress of new demand from customers and commence mass production in a timely manner to increase global sales capacity; actively expand customers in sales regions around the world and increase the percentage of sales accounted for by European and emerging markets.
- ◆ Continue to research and develop new technologies and products, actively expand the market with higher added value, and increase the proportion of revenue from the markets, to reduce the potential impact of local DRAM manufacturers in the United States, Japan, and China.
- ◆ Build a pool of key talent and implement talent development and retention measures. Expand the scope of industry-academia collaboration, establish an internship cooperation platform with excellent universities, and establish a stable source of human resources in the long-term.

## Emerging Risk 2

Cyberattack methods are evolving rapidly, and if information security protection fails, the Company's operation and reputation may be impacted.

Technical

### Risk description

- ◆ Cyberattacks are changing rapidly, and hackers are trying their best to cover up their attacks. If the information security system fails to keep pace with the times and detect suspicious activities early, it may lead to serious hacking incidents.
- ◆ Hacker attacks and data theft will generate risks such as suspension of the Company's system services and leakage of trade secrets, affecting the Company's operations and competitiveness.

### Impact

- ◆ Hackers can easily launch an effective attack if information security measures are ineffective, allowing hackers to obtain classified and sensitive data and use the data to threaten or extort the Company or customers.
- ◆ If hackers steal the Company's advanced process technologies and leak or sell it to the Company's competitors, it will threaten the Company's sustainability and profitability in the long-term.
- ◆ If hackers paralyze the Company's operations, it might cause production or operational losses.
- ◆ If a hacking incident occurs, it will damage the Company's reputation and will impact all stakeholders.

### Mitigating actions

- ◆ Establish a detection mechanism for the information security system and verify its effectiveness, in order to ensure the integrity and availability of the information security system.
- ◆ Continue to pay attention to updates and patches for various information security systems to ensure that system vulnerabilities can be patched in a timely manner to prevent hackers from exploiting them.
- ◆ Conduct disaster recovery drills to ensure that when information security measures fail, the backup plan can be quickly launched and the system can be restored.
- ◆ Continue to conduct social engineering drills to train employees to identify the authenticity of e-mails and URL links to reduce the risk of fraud and identity theft.
- ◆ Red teaming is carried out to simulate methods used by hackers, in order to verify the effectiveness of the Company's information security system and evaluate the Company's information security incident response procedures and response ability.

## Emerging Risk 3

The competition for talents expends across the semiconductor industry and the impact of declining birth rate may lead to a shortage of key talents in the future.

Societal

### Risk description

- ◆ Due to the impact of geopolitics and demand stimulated by AI, the semiconductor industry has become a key industry of great importance to the world in recent years. Taiwan and major countries around the world are all dedicating their efforts to expanding wafer fabs, resulting in fierce competition for global talents. Following the development of Taiwan's technology industry, the thriving service industry after the pandemic, and the growingly severe low birth rates, the insufficient supply of talents has impacted the industry's overall competitiveness.

### Impact

- ◆ The semiconductor industry has a shortage of technical talent, which are hard to cultivate, insufficient recruitment or loss of current talent will severely impact the development and improvement of product and process technologies, which will further impact the Company's mid-term and long-term competitiveness.
- ◆ Nanya is building a new fab and is expected to recruit a large number of employees within five years. A shortage of employees will impact the time it takes for the Company's new fab to reach mass production, and business growth will be limited.

### Mitigating actions

- ◆ Build a pool of key talent and implement key talent development and retention measures.
- ◆ Expand the scope of industry-academia collaboration, establish an internship cooperation platform with nearby high quality universities, and establish a stable source of human resources in the long-term.
- ◆ Monitor industrial, government, academic, and research talent trends, and support and promote talent development measures. Improve company image, enhance the brand as an employer, and attract talent to join the Company.
- ◆ Encourage women and foreign workers to join the semiconductor industry and increase the percentage they account for in promotions and hiring.
- ◆ The recruitment method will be adjusted according to the mass production schedule of the new fab, and medium and large intensive recruitment activities will be organized by the Company or outsourced.

## Emerging Risk 4

Expansion of the new fab may bring the risk of biodiversity loss and ecosystem imbalance

Environment

### Risk description

- ◆ Nanya will break ground for the expansion of a new fab in June 2022. Although the scope of expansion is reconstructed on an old site and not a new land development project, the expansion process might impact biodiversity and ecosystems in surrounding areas. Emissions from operating activities can also cause negative impacts such as climate change and ecosystem imbalances (water shortages, extreme weather disasters, etc.).

### Impact

- ◆ Nanya is located in a shallow mountain area. During the construction of the new fab, noise or dust might affect the local animals and plants, causing an imbalance in biodiversity.
- ◆ If the wastewater and waste generated during the construction period are directly discharged or discarded into surrounding water areas, it will impact the watershed ecosystem.
- ◆ Water shortages caused by ecosystem imbalances will affect water supply and impact operations.
- ◆ The destruction of the ecosystem may lead to an increase in employee turnover due to poor working conditions and increase operating costs. It may also lead to poor perception of the community, resulting in reputation and trust risks.

### Mitigating actions

- ◆ Pay attention to the ecological condition of areas where we operate, outsource environmental and ecological monitoring every year, and conduct monitoring and surveys every quarter. During construction periods, the frequency is increased to monthly. In addition to air quality and wastewater monitoring, it also includes biological surveys of land plants, mammals, birds, reptiles, amphibians and butterflies.
- ◆ Nanya announced the "Biodiversity and No Deforestation Policy" and adopted the LEAP (Locate, Evaluate, Assess, Prepare) methodology of the TNFD (Task Force on Nature-related Financial Disclosures) to establish its identification process for nature-related dependencies, impacts, risks, and opportunities. Nanya established relevant response measures and disaster warning mechanisms, issued a "Nature and Climate-related Financial Disclosures Report" to disclose to stakeholders, and communicated with external stakeholders through fixed meeting platforms.
- ◆ Nanya assesses nature and climate-related risks and opportunities, implement wastewater sorting and treatment in the production process, repeatedly recycles and reuses water to reduce the impact of water shortages, and established water resource response mechanisms and management indicators.
- ◆ We prohibit the discharge of wastewater and disposal of waste into natural watersheds during the construction period, and conduct monthly water quality monitoring surveys to prevent local water quality from being affected by construction and operations.

## Risk Culture Construction

To establish a comprehensive risk management culture, Nanya's Sustainable Development Committee, which is subordinate to the Board of Directors, reviews the Company's risk management policy, strategies, and management approach, and supervises the Company's implementation of risk management matters and plans. In accordance with the defined scopes, organizations, duties, and risk management procedures stipulated in the [Risk Management Regulations](#), the committee has fully implemented risk management tasks and held meetings twice in 2023 to review the implementation and operation of risk management.

The "Risk Management Steering Center" is headed by the executive vice president. The Center internalizes risk awareness in the management hierarchy, and reviews risk management performance and emerging risks on an annual basis. The Company included risk management results into annual performance evaluation items for management (president and supervisors ranked assistant vice president and above). Through management by objective carried out by senior managers, risk management measures are implemented to comprehensively raise the Company's risk awareness.

Nanya has formulated a variety of incentives provided to encourage employee proposals and innovation to uncover and improve potential risks. We conduct reviews and provide cash incentives based on the expected benefits, creativity, application scope, integrity, and quality contributions. We also incorporate risk concepts in the new product design and development stage, using FMEA techniques to identify all possible potential risks and formulate mitigation measures, in the hope that the risks of new products can be reduced before mass production. The Company has established employee instant feedback mechanisms, including a 24-hour instant case report line, an information security line, a complaint line, and a complaint mailbox. We have also used TV walls, posters, and computer wallpapers to instill the risk management culture and allow the risk management culture to take root in all employees. Our evaluation regulations have already included employees' understanding and implementation of risk management as an evaluation item in quarterly work evaluations and year-end evaluations, and serves as a basis for performance ratings, promotion, bonuses, and stock options, as well as the implementation of risk management measures. We also link incentive measures to the Company's key risks. For example, in order to reduce hazard risks, the Company has a zero-occupational injury bonus system to encourage managers and employees to make improvements to avoid accidents. They will receive bonuses when the annual goals are achieved.

Furthermore, the Company also irregularly organizes management activities to raise employees' risk awareness, such as the "Information Security Month" in 2023, during which information security seminars, online Q&A, reading information security regulations, and call for articles on information security risks built employees' consensus of information security, and created a culture in which all employees participate in the prevention and improvement of risks. In response to the Company's increased awareness of risk management on nature and biodiversity issues, two workshops were held in December 2023 and gathered together relevant business units to improve their understanding of nature-related risks.

Year	2020	2021	2022	2023
<b>Number of improvement proposals put forward by employees and benefits</b>				
Number of proposals (case)	207	207	212	193
Proposal (case-closing) bonus (Thousand NTD)	414	412	507	422
Proposal benefits (Thousand NTD)	1,583,318	882,517	756,744	755,784
<b>Number of proposals in each category</b>				
Process and equipment risks	67	61	68	60
Productivity and quality risks	114	85	41	37
Environment, safety and hygiene risks	9	26	16	3
Other risks	17	35	87	93
Total	207	207	212	193

## Risk Management Education and Training

Nanya annually arranges for the directors to attend corporate governance and risk management courses held by institutions approved by the government, so as to assist in supervision the Company's risk management operations. In addition, the Company also compiles risk management education materials, makes rolling adjustments to the contents of the materials each year based on implementation items, contents, and results, and requires employees to read on the computer system each year, in order to raise the risk awareness of all employees. The completion of employee risk management education and training achieved the goal of 100% coverage rate in 2023, with a total of 1,808 training hours. We hope that through the education and training, employees will fully understand the Company's risk managements and incorporate their risk management awareness in daily management.

## 8.3 Information Security

Nanya is actively implementing information security related systems to protect the interests of shareholders and customers. The Company has invested over NT\$1 billion into information security over the past 6 years, and also established an Information Security Committee. Information security is personally supervised by the president and overall information security operations are already on track. We continue to make improvements in response to external threats, and ensure the Company's smooth operation to gain the trust of shareholders and customers.

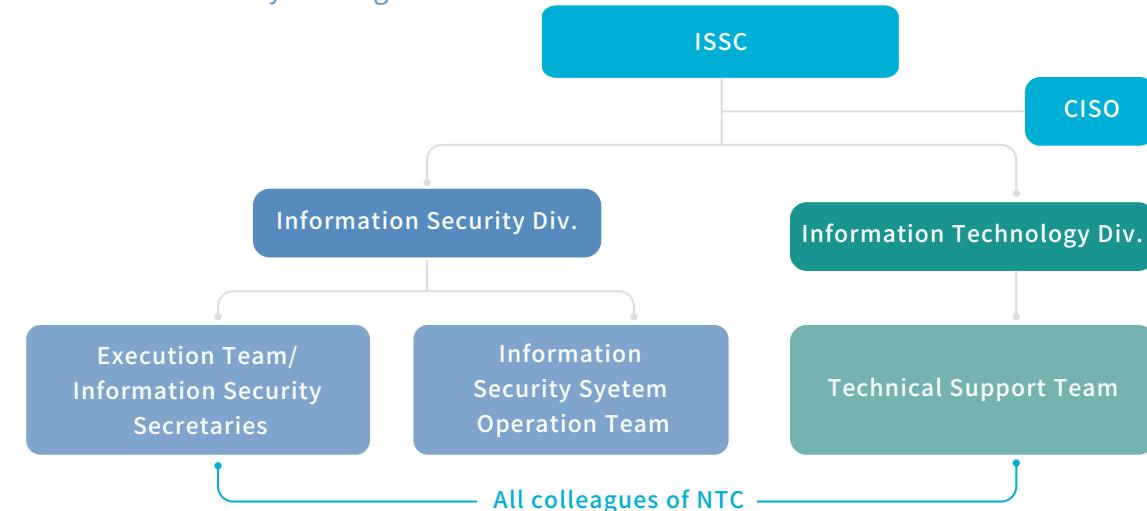
 [Information Security Policy](#)

We have focused our efforts in the field of DRAM for several decades, and are fully aware of the challenges in developing DRAM processes and products, as well as the importance of advanced process development, production know-how, and intellectual property rights protection. This is why we take information security very seriously, and have enhanced information security measures and raised employees' information security awareness to prevent the leakage of classified and sensitive data. These efforts aim to maintain the Company's R&D capabilities and core competitiveness, which is necessary to protect the Company's long-term interests and employees' work rights. In 2022, Nanya once again passed the information security verification that is carried out for ISO 27001 every three years. The scope of verification was expanded from the six main units to 100% coverage of all fabs, and the effectiveness of the certificate was maintained in 2023, showing Nanya's emphasis on its information security management system, while meeting international standards.

Nanya established an inter-departmental Information Security Committee to advance information security management. The president serves as the convener and appoints level 1 supervisors as committee members. One of the members was appointed as the Chief Information Security Officer (executive secretary). Members include the Chief Information Security Officer (Senior Director Huang Yen-Chang), Quality Assurance Division, Legal & IP Division, Human Resources Division, and Information Technology Division. Meetings of the Information Security Committee are convened every week. The committee is mainly responsible for the planning, formulation, approval, and supervision of the information security policies, goals, and related regulations. In addition, the committee quarterly reports the results of the operations of the information security management system to the board of directors. In addition, our four executive directors (President Pei-Ling Lee, Executive Vice President Lin-Chin Su, Vice President Joseph Wu, and Vice President Rex Chuang) also actively participate in the Company's quarterly information security meetings and annual information security management review meetings to ensure the effectiveness and benefits of the management.

In accordance with the implementation of the Cyber Security Management Act, Nanya Technology Corporation is following the requirements applicable to Grade A government agencies regarding cyber security responsibilities. The company currently holds valid cyber security professional certifications, including EC-Council CCISO (Certified Chief Information Security Officer), EC-Council ECSA (Certified Security Analyst), EC-Council CEH (Certified Ethical Hacker), EC-Council ECIH (Certified Incident Handler), CompTIA Security+, EC-Council CND, EC-Council CPENT, and ISO/IEC 27001:2013 Information Security Management System (ISMS) Lead Auditor (ISMS chief auditor) to enhance the professional competencies and efficiency of information security personnel.

### Information security steering committee



### Milestones of Nanya's improvement measures for information security management

In response to risks of poaching by competitors which may cause risks of inappropriate acquisition of the Company's confidential and sensitive business information, the Company established the Information Security Section to take charge of planning, executing, auditing, and improving information security management.

- ◆ Obtained the ISO27001 Information Security Management System certificate for the first time.
- ◆ Continued to develop hacking prevention strategies and defense-in-depth plans in response to the frequent cybersecurity attacks in Taiwan and overseas, as well as the endless stream of attack methods.

2017

2019

2022

2023

- ◆ Once again passed the information security verification carried out every three years for ISO 27001 ISMS, and the scope of verification was expanded to all fabs.
- ◆ Established the OT (Facility) information security system to implement vulnerability management and establish monitoring and response mechanisms.
- ◆ Conducted ISMS information security management reviews of major downstream contractors, in order to continue improving the effectiveness of supply chain information security.

Classified suppliers and carried out risk management, audits, and improvements for key high-risk suppliers.

## Main methods and implementation results of information security management

Implementation results of Nanya under the information security policy to ensure the confidentiality, integrity, and availability of information, and to protect the rights and interests of customers, shareholders, employees, and suppliers in 2023 are described below:



01

### Strengthen information security and establish defense-in-depth

- ◆ Formed by sensitive data encryption, endpoint protection, and network gateway protection, which are supported by network access control, document output management, and e-mail protection mechanisms. We also installed metal detectors for controlled information security products, so as to prevent external cyberattacks and internal leaks.
- ◆ Strengthened endpoint security: Installed anti-virus software, updated security patches, controlled USB access, and established a backup mechanism to strengthen system security and lower the risk of system vulnerabilities.
- ◆ Protection from the threat of external attacks: Installed an information security system, web isolation, and file disarming mechanisms to prevent computer viruses or malware from affecting information system services or accessing confidential data, and also prevent the theft of confidential data through social engineering.
- ◆ Establish a Facility/FAB OT information security system: Improves visualized asset management, real-time monitoring of threats, and accelerates incident investigation and response.
- ◆ Establish an automated information security joint prevention and response system to improve threat detection and information security incident response capabilities.



02

### Established physical security measures

- ◆ Established the Company Classified Information Management Guidelines. There are metal detectors at the entrances of office areas and plants, objects must be carried by personnel through the metal detectors, the Company's confidential information may not be disclosed to others without authorization, and the Company established related evaluation mechanisms.
- ◆ Access control, system login identity authentication, password control, access right control, and periodic vulnerability scanning.



03

### Quality management and regulatory compliance

- ◆ In 2022, Nanya once again passed the information security verification that is carried out for ISO 27001 every three years. The scope of verification was expanded from the six main units to 100% coverage of all fabs, and the effectiveness of the certificate was maintained in 2023, showing Nanya's emphasis on its information security management system, while meeting international standards.  ISO 27001
- ◆ Each year, we examine our information security measures and regulations, follow information security issues, formulate response plans to ensure their appropriateness and effectiveness, and give reports during ISO management review meetings.
- ◆ The Company has always attached importance to information security and personal data protection. We protect customers' rights and interests and fulfill our responsibility to personal data protection. Access rights to personal data are separated and controlled, and encryption is used for transmission protection to prevent unauthorized data leakage.



04

### Training to raise information security awareness

- ◆ Phishing mail testing tools well known in the industry are used for social engineering drills. Every quarter multiple social engineering drills are carried out by mailing phishing mail and setting goals for the drills. Enhanced training is provided to employees who click on the link and open the attachment in the e-mail. We also established related evaluation mechanisms so that all employees will take the drills seriously, and to raise their information security awareness. A total of 8 drills were conducted throughout the year with over 28,000 participants and over 700 participants in overseas subsidiaries.
- ◆ We provide employees and new recruits with annual information security training to raise their awareness of information security risks.
- ◆ Professional cultivation of talents; recruit and cultivate the professional and cross-domain integration capabilities of information personnel, and obtain international professional certificates to enhance personnel's academic abilities and expand their fields.



## 05

## Business continuity

- The Company assessed and identified risks that have the most severe impact on key business processes, and used it as the basis for the frequency of post-disaster recovery drills.
- Defined availability goals for information systems for the office area, R&D and design, and technology development, and set the annual goal for service suspension at  $\leq 1$  time and  $< 24$  hours each year. Information systems were not suspended in 2023.



## 06

## Supply chain security

- In addition to the Company, we have expanded our information security to the entire supply chain. Equipment must pass a security inspection when entering our factories before they may be used. We also signed an information security clause with vendors and their employees to prevent attacks through our supply chain. An ISMS inspection of main downstream contractors was carried out in 2023. Appropriate corrective and preventive measures were taken for potential non-confirming items to ensure that the supply chain meets the Company's information security requirements.
- In 2023, we classified suppliers through self-assessment questionnaire(SAQ) and SecurityScorecard(SSC) and carried out risk management, audits, and improvements for key high-risk suppliers.



## 07

## Discuss information security incidents and methods used by hackers

- We conducted penetration inspections of external service systems for 21 external websites, and made improvements for security weaknesses that were found.
- Nanya formally joined TWCERT/CC in 2022 to more quickly learn about methods used by hackers and take preventive and response measures in advance.
- A third party is commissioned to conduct annual penetration testing and red teaming to test the Company's information security for early discovery of system loopholes and vulnerabilities, so that improvements and corrections can be carried out.
- Nanya actively participated in the 2023 TWCERT/CC enterprise information security drill to strengthen the Company's ability to respond to information security incidents, and improve overall information security capabilities.

## Business Continuity Plan (BCP)

As different departments have different information system structures, we have performed risk evaluation and identification on these systems based on the severity of the impact of each system on key operation procedures so as to define the degree of severity of each system. The severity degrees are to serve as the basis for determining the frequency of post-disaster recovery exercises. The severity is classified into three degrees from important to minor (Degree 1 to 3). Description of each degree is explained below:

## Degree 1

The suspension of operations of the system will suspend services provided with the primary functions.

Recovery drill cycle

**Half a year**

## Degree 2

The suspension of operations of the system will suspend services provided with the secondary functions.

Recovery drill cycle

**Two years**

## Degree 3

The suspension of operations of the system will not affect the services provided or the system can continue operations with other remedial measures to provide services.

Recovery drill cycle

**No drills required**

The recovery drill cycle is also divided based on the severity degrees (semi-annually, every two years, no drills required). Each department shall register the rating of the systems they are responsible for operations and maintenance in the list in the "information system severity degree classification" document. All Degree 1 systems are provided with multiple backup mechanisms placed in different server rooms in different buildings. All production information is provided with remote backup through encryption and the Company conducts recovery exercises according to the information system disaster recovery plan, in order to ensure the normal operation of systems. The Company has a total of 17 systems that required drills in 2023. We completed drills for 17 systems and the completion rate was 100%. Each information system management unit notifies the response units in the execution of response measures in accordance with the response procedures in the "Information System Response Plan" in the event of major anomalies.

## Information Security Awareness Training and Results

The Information Security Secretaries is formed by designated personnel, and members are Information Security Secretaries from each department. The members' tasks include cooperating with the Information Security in providing information security awareness training, formulating and modifying information security procedure, planning and execution of information risk assessment operations and cooperating with the Information Security Section or other units in information security-related matters. In terms of information security awareness training, Nanya has invested many resources in hopes of raising information security awareness and building a consensus among all employees. We provide information security education to our information security secretaries at monthly information security meetings. Quarterly meetings to report information security performance evaluation results to supervisors above the first level, conduct social engineering drills on a quarterly basis, and organize information security month activities each year, and in order to deepen the culture of confidential information management, all employees are required to complete the online designated reading course "Company Confidentiality Management Measures" every year. See the table below for courses and number of hours in 2023.

Type of training	Information Security Awareness Training Courses	Subjects	Number of hours
Designated reading for all employees	Company Classified Information Management Guidelines	All employees	3,629
Information security education for new employees	Proper Information Security Management (I)	New recruits (within a week)	440
	Proper Information Security Management (II)	New recruits (within six months)	570
Social engineering training	Social engineering exercises	All employees (excluding TA)	2,333
	Social engineering training	Employees who clicked on the link	14
Information security seminars (external lecturer)	AI Applications and Information Security	Information security Secretaries, Information Security Division	101
	Common hacking techniques and recommended response measures	Supervisors, Information Security Secretaries	77
Internal auditor training	ISO 27001 internal auditor training	Information Security Secretaries	90
Annual information security activities	Information security management Q&A	All employees	1,780
Total hours			9,031

## Information Security Goals

The Company understands that its information systems will continue to face threats and risks, and thus comprehensively deployed suitable information security mechanisms. The Company passed the third-party audit in 2023 without any major deficiencies, and there were no customer information leakages and fines for major information security incidents as well, see the table below for details.

Item	Statistics
Violations of information security or network security incidents (number of cases)	0 cases
Data leakage incidents (number of cases)	0 cases
Number of information security violations involving customers' personal data	0 cases
Number of customers and employees affected by data leakage	0 times
Amount of fines imposed due to information security or network security incidents(NT\$)	NT\$0



# 8.4 Business Integrity

Nanya upholds the corporate culture and spirit of "diligence". We use ethical, honest, fair, transparent, and responsible business philosophies to strengthen regulatory compliance. We established the "[Codes of Ethics for Directors and Managers](#)" for senior executives and the "[Ethical Corporate Management Principles](#)", "[Labor and Ethical Work Guidelines](#)", and "[Antitrust and Competition Law Compliance Manual](#)" for employees. We established the digital transaction platform for suppliers. We also have a comprehensive auditing system to implement ethical corporate management and prevent violations of the law. In 2023, Nanya was fined by the competent authority once due to an occupational accident; there were no other violations of laws and regulations. Nanya stipulates in the Business and Ethical Code of Conduct that it will not make donations other than to charity (such as political donations), in order to remain politically neutral and encourage employees to perform their civic duties.

## Ethical Code of Conduct

Nanya referenced the Code of Conduct of the Responsible Business Alliance (RBA) and established the "[Code of Business and Ethical Conduct](#)" and "[Labour & Ethic Policy](#)" as the basis for business conduct, and periodically carries out RBA VAP verification, receiving platinum grade with a perfect score in 2022. The Code of Business and Ethical Conduct is applicable to all employees of the Company (including managerial officers), and is also applicable to employees of subsidiaries, customers, suppliers, and stakeholders. Contents include business ethics, information disclosure, environment control, recruitment, safety and health, compliance and corporate governance, and social engagement. The Company is also committed to respecting human rights, established a human rights policy, and performs due diligence (please refer to Chapter 4 Employee Human Rights Protection for details) to ensure there are no violations of human rights. The "Labor and Ethics Policy" and "Code of Business and Ethical Conduct" have been published on the internal and external websites and made available to all employees and external personnel at all times.

All employees of the Company and subsidiaries are required to abide by the code of conduct to raise employee awareness of integrity and ethics; coverage reached 100%. The Company continued to organize the "RBA Labor and Ethical Code of Conduct Course" and "Code of Business and Ethical Conduct Course" for all employees in 2023. The training coverage rate was 100%. The Company provides the virtual "RBA Labor and Ethical Code of Conduct Course" for all new recruits.



To continue to optimize the workplace environment, Nanya implements related training by setting labor moral goals each year. We organized five courses including "Labor and Ethical Code of Conduct Course" and "Anti-corruption Course" with "Anti-corruption Course", "Code of Business and Ethical Conduct Course", "Senior Executive Ethical Corporate Management Course", and "Occupational Hazards and Preventive Training" based on the management objectives of "zero corruption", "zero sexual harassment", "prevention of insider trading," and "zero illegal infringement in the workplace". The training completion rate was 100% for all courses.

Ethical corporate management and labor ethical education results	2021	2022	2023	2024 Goals
"RBA Labor and Ethical Code of Conduct Course" completion rate <sup>Note 1</sup>	100%	100%	100%	100%
"Code of Business and Ethical Conduct" completion rate <sup>Note 2</sup>	100%	100%	100%	100%
"Anti-corruption Course" completion rate <sup>Note 3</sup>	100%	100%	100%	100%
"Senior Manager Ethical Corporate Management Course" completion rate <sup>Note 4</sup>	100%	100%	100%	100%
Completion rate of "Advocacy Briefing on Prevention of Insider Trading" <sup>Note 5</sup>	100%	100%	100%	100%
"Occupational Hazards and Preventive Training" completion rate <sup>Note 6</sup>	100%	100%	100%	100%
"Antitrust promotion" completion rate <sup>Note 7</sup>	100%	100%	100%	100%

Note 1: A total of 3,644 individuals completed the "RBA Labor and Ethical Code of Conduct Course" in 2023. (organized in September 2023)

Note 2: A total of 3,603 individuals completed the "Code of Business and Ethical Conduct Course" in 2023. (organized in February-March 2023)

Note 3: A total of 3,639 individuals completed the "Anti-corruption Course" in 2023. (organized in September-October 2023)

Note 4: The "Senior Executive Ethical Corporate Management Course" was incorporated into the "Code of Business and Ethical Conduct Course" and a total of 10 individuals completed the training in 2023.

Note 5: A total of 3,438 individuals completed the "Insider Trading Prevention Training" in 2023. (organized in November-December 2023)

Note 6: The "Occupational Hazards and Preventive Training" course includes both physical and digital courses. In 2023, a total of 1 in-person course was held for department heads, team leaders, and chief engineers/managers (42 individuals received training) and the digital courses were provided to all employees (3,644 individuals received training).

Note 7: A total of 3,609 individuals completed the "Anti-trust Act Course" in 2023. (organized in October-November 2023)

Note 8: Trainees of the courses listed above are all employees who receive training that year. New employees take the courses during orientation.

## Antitrust

To ensure employees understand and abide by the Antitrust Law and reduce the risks of violations, Nanya established the "Antitrust Policy", "Antitrust and Competition Law Compliance Manual" and the "Procedure of Antitrust and Competition Law Compliance" to strictly require employees and managers to abide by laws and regulations and report the compliance status to the Board of Directors. We also organize regular training courses for related employees and require them to sign compliance manual. No cases occurred in 2023.

Note: There is still 1 ongoing anti-trust case that occurred in 2010, when the Company was accused by Brazil's Ministry of Justice and Public Security for violating anti-trust regulations (please refer to [page 177](#) of Nanya's 2023 Annual Report). The Company has engaged counsels to deal with the case to protect it's interests.

## Anti-corruption

All employees must abide by Nanya's "Code of Business and Ethical Conduct," "Human Resources Management Regulations," and "Work Rules" for related personnel. Any abuse of powers, embezzlement, bribery, acceptance of commissions, once verified, shall result in termination of employment without exception. The direct supervisors shall also be punished accordingly based on the circumstances. For example, the Code of Business and Ethical Conduct stipulates that employees may not offer (or accept) bribes or engage in unethical conduct that damages the Company's image, such as engaging in insider trading, or become involved in severe violations or corruption cases (e.g. employees using their position to accept bribes. Employees will be immediately terminated if they are verified to be in violation, and the Company reserves the right to take legal action if such violation causes the Company to sustain significant losses.

Personnel holding positions involved in business, procurement, outsourcing, construction supervision, and budget and other interests of vendors may not accept the invitation of vendors to any form of entertainment, and may not accept money or other benefits from vendors, in order to prevent all forms of corruption. We have implemented periodic job rotations for related positions. We also prepare anti-corruption education materials to educate all employees. We completed 100% of anti-corruption training courses in 2023 and provided 1,820 hours of training, in hopes that all employees can abide by ethical principles in both work and life and fulfill the corporate culture of "diligence". There was 1 case of corruption in 2023. Please refer to "[Chapter 4 - Number of reports through employee grievance and complaint channels over the years](#)" for details of the case.

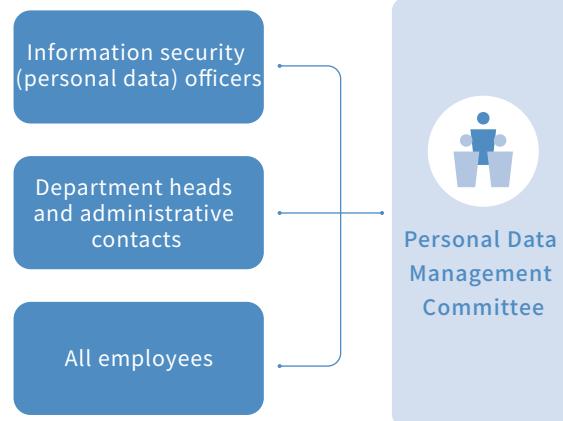
Furthermore, we evaluate business locations in Taiwan and overseas based on compliance with ethical corporate management related regulations and internal audit mechanisms each year. No corruption risks were found in 2023.

## Protection of Personal Data

The Company has established the Personal Data Management Rules to ensure that our employees, suppliers, clients or outsiders may abide by the personal information protection regulation. The procedures specify the organization and duties for personal data protection, and provide regulations on the collection/processing/use of personal data as well as information on how data subjects shall exercise their rights and how their data is processed. Departments are required to comply with the Procedures when collecting and processing personal data. If a department commissions other individuals, other departments, or other companies to collect or process personal data, it must ensure that the individual, department, or company's conduct complies with the Procedures and related laws and regulations. Unless consent is obtained from the owner of personal data or due to special provisions of other laws and regulations, the Company will not disclose personal data to a third party or use the personal data for other purposes. To implement personal data processing risk management, the Company compiles an inventory of personal data and conducts an assessment every year, and implements improvement measures based on risk levels. We set controlled access for personal information of employees or customers and apply strict restrictions on the use of such information. No high-risk items occurred in 2023.

The European Union's General Data Protection Regulation (GDPR) entered into force in May 2018. As the Company has established a subsidiary company in the European Union, the legislation provides a certain level of regulations on measures for managing the personal information of European customers, clients, and suppliers. Nanya has adopted response measures based on the requirements in the GDPR, announced response measures in the Data Protection Notice on Nanya's official website, and implemented related systems in subsidiaries to raise employees' awareness for personal data protection and reduce the risk of violations. All 3,626 employees received personal data protection training in 2023, training completion was 100%, and there were no violations. The Company annually conducts internal audits of personal data to ensure the implementation degree of personal data management. Nanya announced its [Privacy and Cookies Policy](#) on the official website. Within the authorized scope of certain purposes, we use safe and reasonable methods to collect, process, or utilize personal data. Moreover, we ensure that clients may exercise their rights stipulated in the Personal Data Protection Act. As the Company's personal information protection has been rigorously and effectively executed, there were no violations in 2023. Furthermore, the data is not used for other purposes.

### Structure of the Personal Data Management Committee



### Duties of the Personal Data Management Committee

- Evaluate and review the compliance and appropriateness of mechanisms for protecting personal data
- Conduct regular tests to evaluate and assess the effectiveness of technologies and organizational functions used for processing personal data
- Provide resources necessary for the establishment of personal data management mechanisms

### Number of violations of personal data regulations and fines

Year	2020	2021	2022	2023
Personal data complaints (Number of cases)	0	0	0	0
Fines for violation of personal data (Number of cases)	0	0	0	0
Fine (NTD)	0	0	0	0
Number of complaints to external units (number of cases)	0	0	0	0
Number of complaints to the competent authority (number of cases)	0	0	0	0

## Internal Control

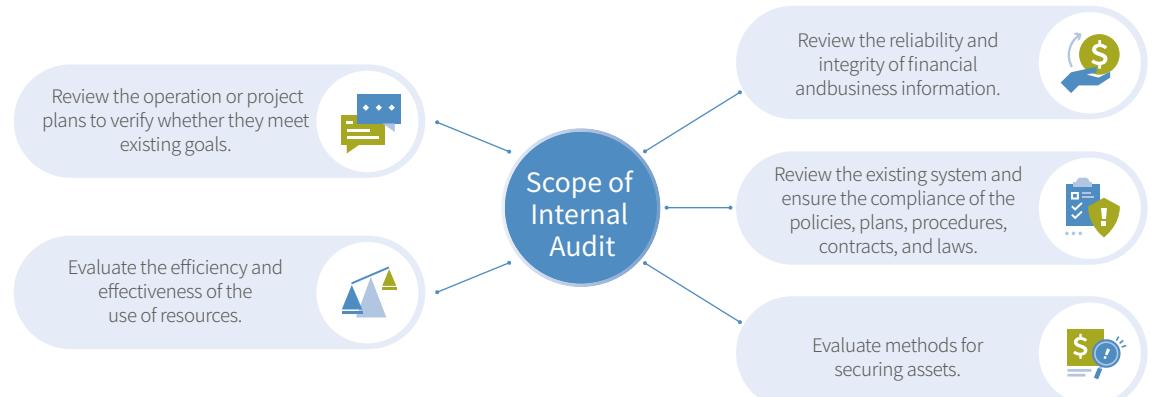
### Internal Control System

Nanya established an effective internal control system based on the Company and its subsidiaries' overall operation activities and its industry in accordance with the "Regulations Governing Establishment of Internal Control Systems by Public Companies". The Company conducts reviews at any time to respond to changes in the Company's internal and external environment as well as to ensure that the system design and implementation remain effective.

The implementation of the internal control system is a continuous operation. We continue to inspect various business and management operations and detect deviations from company policies, operating procedures, existing goals, or standards. We use a feedback system to respond to the appropriate management level and take necessary corrective actions for the issues to ensure the Company's operations are implemented in accordance with the original plans. We use the internal control system to complete audits and prevent abuse in operations.

### Internal Audit

Nanya established Corp. Audit under the Board of Directors and appoints three dedicated auditors who participate in related auditing courses organized by professional training institutions each year to improve their professional skills. We also use the professional and independent internal audit operations framework to implement internal control in all levels of the Company.



In addition to the audit report on the status of correction of defects and irregularities of internal control systems, the internal auditors shall follow up and provide reminders to ensure that relevant units take appropriate improvement measures in a timely manner. They shall submit the measures to the Independent Directors for review before the end of the following month after the completion of the audit report. Internal audit is not merely the responsibility of the independent audit department. The Company's units must complete independent business inspections within the specified cycles for specific audit items. Independent audit units shall review the results of the self-inspections and implement review inspections regularly or from time to time to ensure the execution of the internal control systems of each unit.

### Internal audit items

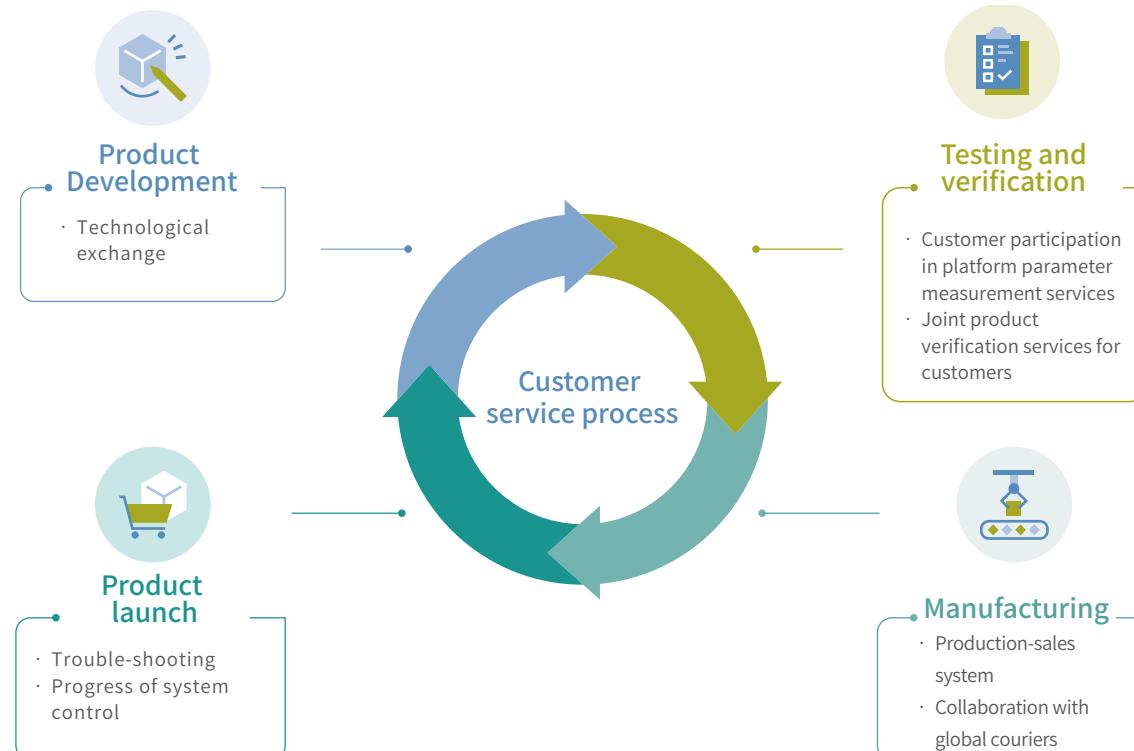
Year	2020	2021	2022	2023
Number of audit items	45	42	42	42
Number of anomalies discovered	3	2	3	3 <sup>note</sup>
Anomaly improvement rate	100%	100%	100%	100%

Note: The three anomalies included 1 for human resources, 1 for production, and 1 for finance; all improvements were completed.



## 8.5 Customer Service

Nanya is committed to providing the best customer service and is convinced that quality and timely customer service is crucial to the maintenance of customer relationships. Good customer relationships will help us build customer loyalty, and consolidate the good and trusted partnerships with customers. Our vision is to become the best memory partner in the smart era as well as a service-oriented enterprise. Through close cooperation with chip dealers and customers, we will strengthen product R&D and manufacturing in order to satisfy diverse requirements, provide customers with comprehensive products and system solutions, and offer better and more trustworthy service.



### Product Design and Testing Verification Stage

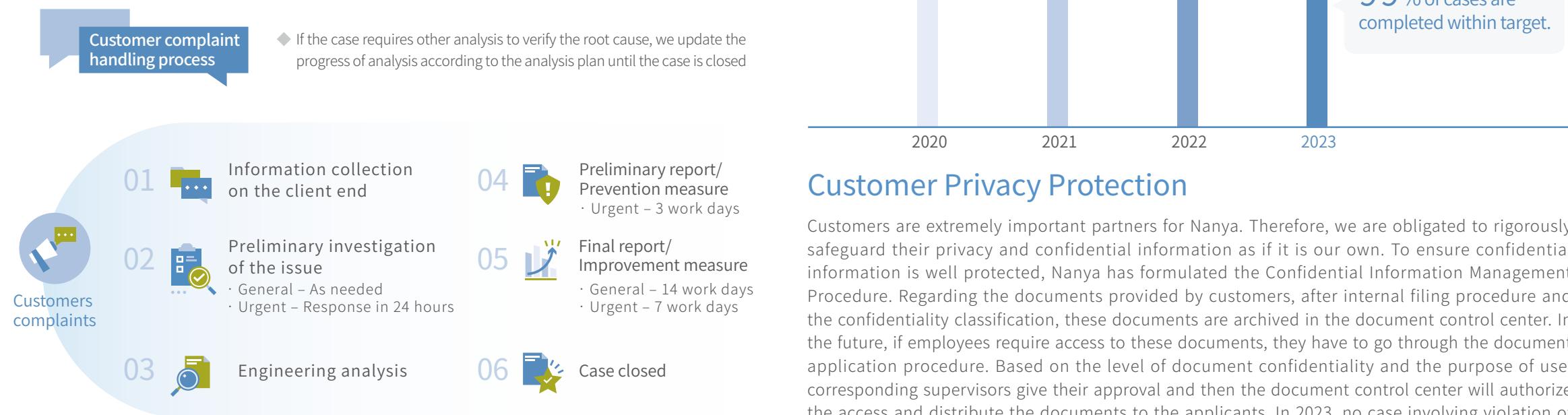
In order to improve the efficiency and frequency of customer services and effectively build close relationships with customers, the Field Application Engineering Division provides technical support to customers in Taiwan, China, Southeast Asia, Europe, the United States, Japan and South Korea, irregularly organizing technology exchange events and DRAM courses to meet the technical needs of customers. A total of 92 events were held in 2023 to provide technical support and help solve problems faced by customers' engineers in design and testing, and to enhance customers' understanding of DRAM usage and applications. In addition, Nanya's high-efficiency, intensive, and high-quality customer platform parameter measurement services help customers understand the characteristics of their product platforms, greatly accelerate the development and verification cycle of new client products, reduce investment risks, and help terminal products enter the market in a timely manner. Nanya also provides joint product verification services for customers to assist them in development and verification at the initial stage of products. This allows compatibility issues to be detected early and improved before mass production. In 2023, a total of 952 measurement services and 28 joint verification services were completed.

### Production and Sales Stage

Nanya has obtained the ISO 9001:2015 and IATF 16949:2016 quality system certifications. The Quality Assurance Division monitors and controls product quality as well as implements improvements in order to make sure that all production processes are fully optimized. Moreover, the Division includes each stage of the production process into a well maintained and tightly controlled system, manufacturing the products that meet customers' requirements. Sales personnel continue to communicate with customers and provide estimates of customers' future demand to the head office every week. The head office summarizes demand estimates from sales personnel worldwide, and convert it into a production plan through the production and sales system. Adjustments are made based on weekly feedback from sales personnel to meet customer demand. In addition, Nanya works with the world's top international express delivery companies, and selects the most suitable express delivery company based on the customer's area and delivery efficiency, so as to ensure that the products arrive according to the customer's required time.

## After-sales Service Stage

Nanya is committed to enhancing product quality and rapidly responding to customers' quality issues to meet their expectations. In order to accelerate the efficiency of problem analysis, the Nanya's service team will fully understand the problems reported by customers first, arrange FAE on-site support to verify the problem if necessary, if the problem is related to Nanya's product or required further analysis, it would be registered in RMA system and arrange sample back. After receiving RMA sample, Nanya will update failure analysis report to customers based on analysis plans, and provide improvement actions and disposition plan once analysis is completed. The field application engineering, quality assurance, product engineering, and process engineering work together and use the RMA system for process management. Over the years, a response was provided to customers within the target time limit for over 90% of customer complaints.



## Customer Privacy Protection

Customers are extremely important partners for Nanya. Therefore, we are obligated to rigorously safeguard their privacy and confidential information as if it is our own. To ensure confidential information is well protected, Nanya has formulated the Confidential Information Management Procedure. Regarding the documents provided by customers, after internal filing procedure and the confidentiality classification, these documents are archived in the document control center. In the future, if employees require access to these documents, they have to go through the document application procedure. Based on the level of document confidentiality and the purpose of use, corresponding supervisors give their approval and then the document control center will authorize the access and distribute the documents to the applicants. In 2023, no case involving violation of customer privacy occurred. If a customer suspects or discovers evidence indicating an information leak, a complaint can be lodged through the Nanya [Reporting Mailbox](#) and [Reporting Hotline](#).

## Results of Customer Satisfaction Survey

Nanya actively understands customers' needs with respect to product quality, delivery, and services through diverse communication channels, including customer satisfaction survey, business and technology review meetings, and customer service platform, in order to improve the Company's products and services and strengthen customer relations.

Nanya strive for continuous improvement, working in a practical way, with a spirit based on exceeding our customers' requirements in quality, delivery and service. In relation to customer satisfaction, Nanya employs an impartial third-party consultancy company and Internal survey to conduct satisfaction survey for direct and end-customers through the internet or interviews, that Nanya can understand customers' needs from a fair and objective perspective. The content of the survey includes the dimensions of "Product", "Delivery", "Quality", "Technical service", "Communication", "Commercial" and "Comparison with competitors".

Nanya has a complete customer satisfaction procedure standard and a customer satisfaction committee, and uses the PDCA (Plan, Do, Check, Action) management cycle to form the common goal of improving customer satisfaction. The committee is composed of cross-function department, and is participated by the directors of marketing, sales management, business management, operation management, field application engineering and quality assurance departments. The main function include the selection of survey objects, sending questionnaires, collecting questionnaires, data analysis, regularly reviewing customer comment, coordinating and proposing appropriate improvement plans. and report the results of customer satisfaction in the top manager review meeting. Finally, feedback the continuous improvement plan to customers, Integrate into a complete and effective cross-function service team, Customer relationship management that creates coexistence and co-prosperity value through "service", and continuously improve customer satisfaction.

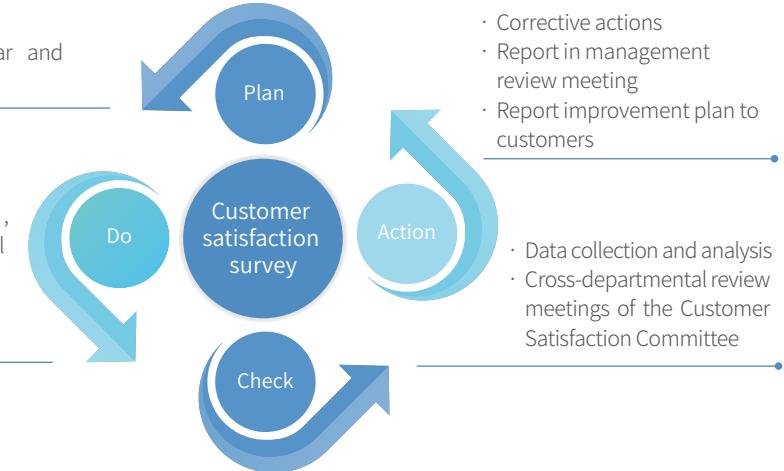
In addition to the customer satisfaction survey, Customers regularly conducts business and technical review meetings with Nanya's service team, Nanya is able to keep close relationships with customers and provide better service. In order to improve customer satisfaction, Nanya has established a special review platform, which prioritizes handling and improving customer needs. Customers can find and contact our customer service platform through the company homepage of Nanya, input your suggestions and requirement, and continue to improve customer relations. We will commit ourselves to strengthening the collaborative cooperation among internal relevant divisions in response to urgent or sudden demands from customers. Moreover, we will continuously strive to improve product quality and the timeliness and efficiency of communication on quality issues with customers while keeping smooth communication with customers, making every effort to satisfy customers' requirements.

 Contact Us

### Customer Satisfaction Survey Procedure

- Identify survey respondents
- The survey cycle is once a year and conducted each month

- Distribute questionnaire
- Survey content include "Product", "Delivery", "Quality", "Technical service", "Communication", "Commercial" and "Comparison with competitors"



- Corrective actions
- Report in management review meeting
- Report improvement plan to customers

- Data collection and analysis
- Cross-departmental review meetings of the Customer Satisfaction Committee

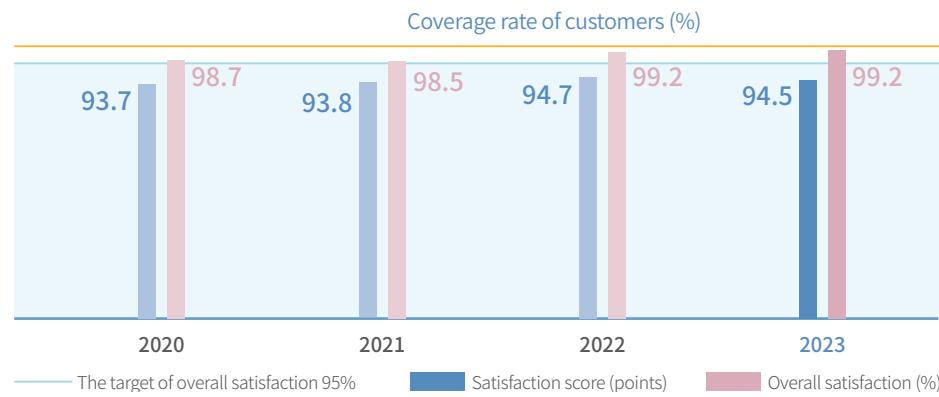
Our customer satisfaction average score was 94.5 points in 2023, achieving the goal of 91 points. We review the actual results in the customer satisfaction survey each year and learn from the benchmark to set at a reasonable target value, which is submitted by the Quality Assurance Division to the president for approval. The target value in 2024 is set to be above 91 points.

Customers highly recognize the Nanya's performance in delivery, technical service and communication at 95 points and above, Mainly Nanya assists the client in accelerating the verification of new products and technical exchanges during the product design, testing and verification phase.

In addition, based on market supply and demand and product application status, Nanya accelerates the development of new products, strengthens communication with customers and faces various improvement issues with a positive attitude, adheres to product quality control, and listens to customers' voices for continuous improvement. Thus, in 2023, there were no product recalls.

Nanya has gained the recognition of customers for its overall performance over the years; an overall score of 80 points and above is satisfied. In 2023, 99.2% of customers were satisfied with Nanya's overall performance, and has surpassed the target of 95% for six years. The goal for customer satisfaction is 95% and above in 2024.

## Customer satisfaction results



## 8.6 High-quality Company with Safety Certification

With the development of international industrial division of labor, the entire industry's supply chain has formed a diverse, extensive and interdependent network. Products produced by Nanya are basic components of the electronics industry, and are widely used and marketed around the world. To be able to respond to the uncertainty and unpredictable risks of the global supply chain, and in response to the implementation of AEO (quality enterprise) by customs, Nanya hopes to establish a complete supply chain security management mechanism through the AEO and C-TPAT system certifications, ensuring that the supply chain protects the safety of transportation, information, and goods from the starting point to the end point, while taking into account the convenience (speed) of trade.

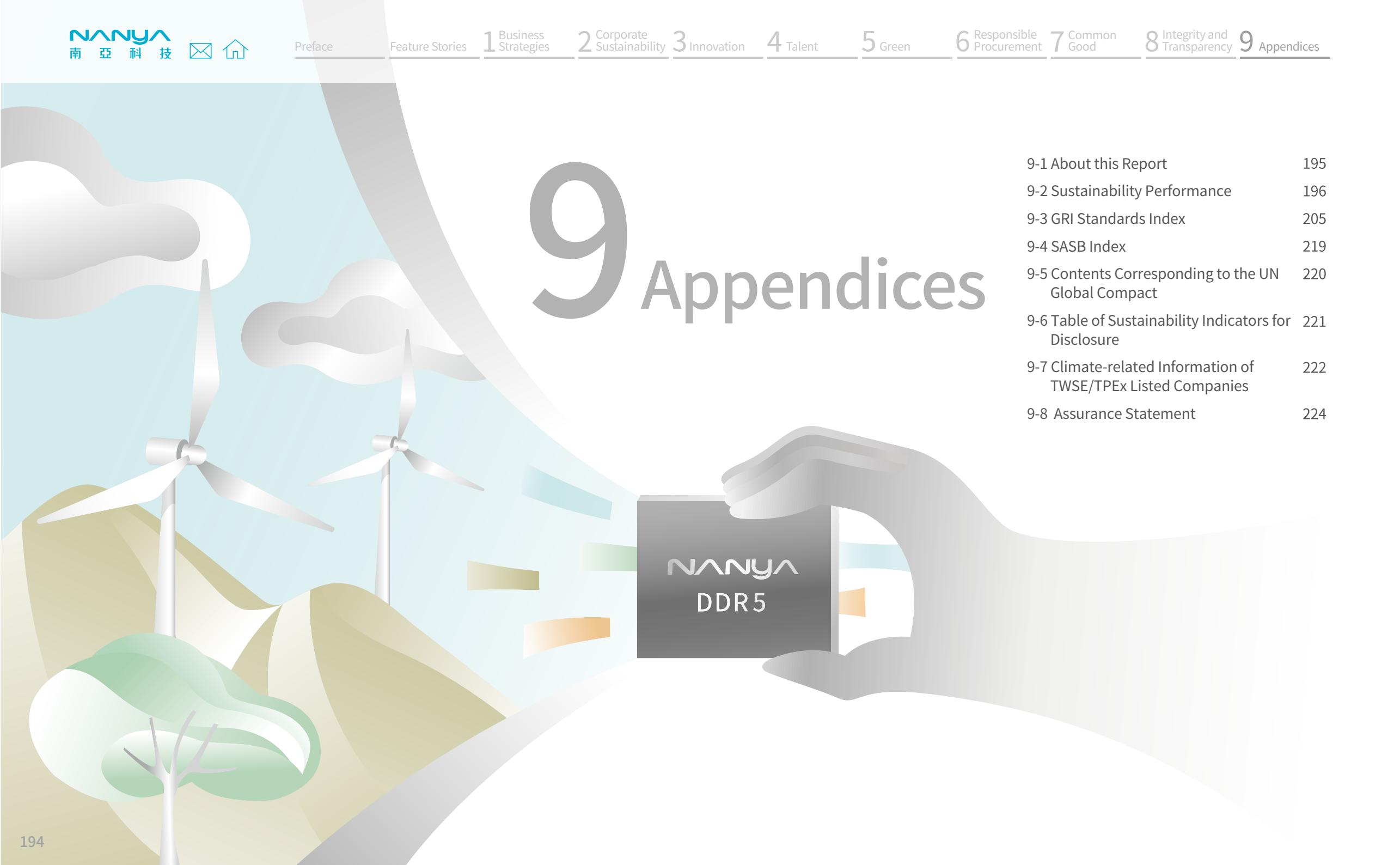
Since joining the AEO certification in December 2010, Nanya has cooperated with Taipei Customs, Customs Administration, Ministry of Finance in completing 5 certifications. By adopting the AEO process, we can examine the Company's security system, improve operating procedures, improve service quality, and implement the core value of safe and prompt customs declaration, thereby fulfilling our corporate social responsibility of safety. At the same time, we will continue to dedicate our efforts to improving supply chain security and facilitate more convenient trade, ensuring transportation, logistics and information security to achieve the ultimate goal of sustainability.

\*AEO-Authorized Economic Operator

\*C-TPAT-Customs-Trade Partnership Against Terrorism

### 14 major management approaches for high-quality enterprises:





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# 9.1 About this Report

## Report Overview

This report is the 14th sustainability report issued by Nanya, with information disclosure boundaries consistent with the consolidated financial statements. The scope of this report covers corporate governance, environmental sustainability development, employee care and social welfare practices from January 1, 2023 to December 31, 2023.

The information in the report is compared with the previous edition and any changes are indicated in each chapter.

### Date of Publication



Nanya's Sustainability Report is published annually

- Current edition : June, 2024
- Last edition : June, 2023
- Next edition : June, 2025

### Information disclosure timeframe

From January 1, 2023 to December 31, 2023

### Data quality management

- Financial data: KPMG Taiwan
- Organization GHG inventory ISO 14064-1and GHG Protocol: SGS
- Sustainability Information AA1000AS V3 : BSI

### Management system verification

- Quality management ISO 9001, IATF 16949 : LRQA
- Environmental management ISO 14001 : LRQA
- Information Security Management System ISO 27001 : SGS
- Energy Management ISO 50001 : LRQA
- Safety and Health ISO 45001/TOSHMS : LRQA
- Responsible Business Alliance RBA VAP : SGS

### Scope of data

Nanya's operations system include Nanya and its subsidiaries

### Guidelines and Standards for Drafting

GRI Standards 2021

### Level of Guarantee

AA 1000 AS Type II High Assurance Level

### Sustainability Contact

- Jojo Chang, Sustainability Development Steering Center , Nanya Technology Corporation
- Telephone: +886-2-2904-5858 ext. 1158
- Email: NTCESG@ntc.com.tw

### Report Management Procedures

1. Annual results review
2. Confirm drafting methods
3. Collect information
4. Report preparation
5. Third-party attestation
6. Sustainable Development Committee confirmation
7. Approved by the Board of Directors
8. The report is published on the corporate sustainability ESG section of the Company's website

# 9.2 Sustainability Performance

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>A Trustworthy Company</b>					
Operating revenue (NT\$100 million)	Business strategies and performance	201-1	856.0	569.5	298.9
Net income (loss) (NT\$100 million)	Business strategies and performance	201-1	228.5	146.2	(74.4)
Income tax expense (profit) (NT\$100 million)	Business strategies and performance	201-1	49.2	22.6	(32.7)
Total amount of cash dividends (NT\$100 million)	Business strategies and performance	201-1	114.7	66.0	-
R&D expenses (NT\$100 million)	Innovation	201-1	75.0	78.4	75.8
Capital expenditures (NT\$100 million)	Business strategies and performance	201-1	112.6	207.1	132.4
Earnings (loss) per share (NT\$)	Business strategies and performance	201-1	7.40	4.72	(2.4)
Ratio of independent directors (%)	Integrity and Transparency	2-9	25%	33%	33%
Attendance rate of Board members (%)	Integrity and Transparency	2-9	100%	95.8%	98.3%
"RBA Labor and Ethical Code of Conduct Course" completion rate (%)	Integrity and Transparency	205-2	100%	100%	100%
"Code of Business and Ethical Conduct Course" completion rate (%)	Integrity and Transparency	205-2	100%	100%	100%
Anti-corruption training completion rate (%)	Integrity and Transparency	205-2	100%	100%	100%
Internal audit anomaly improvement rate (%)	Integrity and Transparency	205-2	100%	100%	33%
Grievance and complaint cases	Integrity and Transparency	205-3	6	5	3

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>The Best Partner for Our Customer</b>					
Annual R&D expenses as a percentage of revenue (%)	Innovation	*	8.8%	13.8%	25.3%
R&D personnel as a percentage of all employees (%)	Innovation	*	26.8%	27.1%	28.9%
Total number of patents approved worldwide	Innovation	*	5,101	5,913	6,866
Benefits from improvement proposal activities (NT\$100 million)	Innovation	*	8.83	7.57	7.56
Time-based handling rate of customer complaints (%)	Integrity and Transparency	*	97%	98%	99%
Customer satisfaction score	Integrity and Transparency	*	93.8	94.7	94.5
Coverage of customer satisfaction survey (%)	Integrity and Transparency	*	100%	100%	100%
<b>A Promoter of Shared Value</b>					
Completion of Sustainability Management Self-evaluation Questionnaire by Tier 1 suppliers for risk self-assessment each year reached (%)	Responsible procurement	308-1	100%	100%	100%
Percentage of key suppliers subjected to a Code of Conduct audit by a third party certified by the Responsible Business Alliance every three years (%)	Responsible procurement	308-1	100%	100%	100%
Cumulative number of high risk significant suppliers subjected to audits of the Supplier Health Examination and Improvement Project each year	Responsible procurement	308-1	100%	100%	100%
Use of compliant minerals by suppliers based on the results of required due diligence on responsible minerals (%)	Responsible procurement	308-1	100%	100%	100%
Completion of safety and health guidance provided to high risk significant suppliers (%)	Responsible procurement	308-1	100%	100%	100%

\*Note: There is no corresponding GRI standard. It is a self-defined material topic and voluntary disclosure item.

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>A Promoter of Shared Value</b>					
Increase the ratio of raw materials purchased locally (%)	Responsible procurement	204-1	28%	30%	31%
Percentage of major suppliers (including significant suppliers) that signed the Supplier (Contractor) Code of Conduct (%)	Responsible procurement	414-1	100%	100%	100%
Percentage of new suppliers that signed (%)	Responsible procurement	414-1	100%	100%	100%
Percentage of significant suppliers that signed (%)	Responsible procurement	414-1	100%	100%	100%
Number of major suppliers (Tier 1)	Responsible procurement	2-6	295	282	273
Number of tier 1 suppliers of raw materials	Responsible procurement	2-6	80	80	79
Proportion of Material Tier 1 Suppliers (%)	Responsible procurement	2-6	100%	100%	100%
Proportion of procurement from Material Tier 1 Suppliers (%)	Responsible procurement	2-6	100%	100%	100%
Percentage of major suppliers assessed with high sustainability risk (%)	Responsible procurement	308-2	5%	5%	5%
Percentage of significant suppliers assessed with high sustainability risk (%)	Responsible procurement	308-2	5%	5%	5%
Percentage of Tier 2 significant suppliers assessed with high sustainability risk assessment (%)	Responsible procurement	308-2	5%	5%	5%
Number of high-risk suppliers audited	Responsible procurement	308-1	20	20	18
Average score of high-risk suppliers sustainability audit	Responsible procurement	308-1	88	90	90
Number of non-conforming items in high-risk suppliers sustainability audit	Responsible procurement	308-1	81	74	57
Improvement completion rate of high-risk suppliers sustainability audit (%)	Responsible procurement	308-1	100%	100%	100%

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>A Practitioner of Green Technology</b>					
Raw material consumption improvement plan: Extensions to use cycle (Item No.)	Green	302-5	8	3	2
Raw material consumption improvement plan: Formula development of new processes (Item No.)	Green	302-5	6	10	18
Raw material consumption improvement plan: Reductions of process consumption (Item No.)	Green	302-5	24	11	15
GHG emissions (metric tons - CO <sub>2</sub> e) (includes Scope 1 and Scope 2 market coefficient method)	Green	305-1 & 305-2	430,048	440,954	430,324
• Scope 1 (Metric ton-CO <sub>2</sub> e)	Green	305-1	56,409	59,788	56,654
• Scope 2 (Metric ton-CO <sub>2</sub> e) (Market coefficient method)	Green	305-2	373,639	381,166	373,670
• Scope 2 (Metric ton-CO <sub>2</sub> e) (Regional coefficient method)	Green	305-2	374,945	385,177	385,700
• Scope 3 (Metric ton-CO <sub>2</sub> e)	Green	305-3	1,221,991	940,525.0	816,878
Fluorine-containing GHG emissions (Metric ton-CO <sub>2</sub> e)	Green	305-1	43,239	45,248	36,967
GHG emissions per unit of product area (Scope 1+2) (kg-CO <sub>2</sub> e/wafer area (cm <sup>2</sup> ))	Green	305-1	0.73	0.75	0.90
GHG emissions per unit capacity (Scope 1+2) (kg-CO <sub>2</sub> e /thousand die)	Green	305-1	383	405	430
GHG emissions per unit revenue (Scope 1+2) (kg-CO <sub>2</sub> e /NT\$1 million)	Green	305-1	5,024	7,743	14,395
PFC reduction performance (metric tons CO <sub>2</sub> e)	Green	305-1	597,952	631,790	518,370
PFC emissions per unit production capacity (kg- CO <sub>2</sub> e /thousand die)	Green	305-1	427	447	453
PFC emissions per unit revenue (kg- CO <sub>2</sub> e /NT\$1 million)	Green	305-1	505	794	1,237
Energy use (MWh) (including electricity, natural gas, and steam)	Green	302-1	826,279	831,862	857,069
• Energy use (MWh) (Non-renewable energy)	Green	302-1	823,679	823,982	832,579
• Energy use (MWh) (Renewable energy)	Green	302-1	2,600	7,880	24,490

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>A Practitioner of Green Technology</b>					
Energy costs (NT\$10,000)	Green	302-1	177,674	193,587	240,424
Energy costs per unit production capacity (NT\$10,000/thousand die)	Green	302-1	0.158	0.178	0.24
Energy costs per unit revenue (NT\$10,000/NT\$1 million)	Green	302-1	2.08	3.4	8.0
Non-renewable electricity consumption (MWh)	Green	302-1	728,787	736,419	741,952
Renewable electricity consumption (MWh)	Green	302-1	2,600	7,880	24,490
Electricity consumption per unit revenue (MWh/NT\$ 1 million)	Green	302-1	8.5	13.1	28.7
Electricity consumption per unit production capacity (MWh/thousand die)	Green	302-1	0.65	0.68	0.77
Natural gas consumption (m3)	Green	302-1	4,682,857	4,780,740	5,228,039
Natural gas consumption per unit production capacity (m3/thousand die)	Green	302-1	4.2	4.4	5.2
Natural gas consumption per unit revenue (m3/NT\$1 million)	Green	302-1	54.7	83.9	174.9
Cumulative electricity savings from energy conservation measures implemented since 2017 (MWh/year)	Green	302-4	58,850	63,228	68,565
Number of days production was suspended due to climate disasters	Green	201-2	0	0	0
NOx emissions (metric tons)	Green	305-7	10.34	10.50	11.21
SOx emissions (metric tons)	Green	305-7	1.66	1.66	1.66
VOCs emissions (metric tons)	Green	305-7	15.68	17.31	14.24
Reduction in air pollution emissions per unit product %(the baseline year : 2017)	Green	305-5	-46.3%	-38.8%	-45.3%

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>A Practitioner of Green Technology</b>					
VOCs reduction rate (%)	Green	305-5	≥ 90%	≥ 90%	≥ 90%
Abnormalities in air pollution prevention equipment (cases)	Green	*	0	0	0
Number of companies (plants) that obtained ISO 14001 certification	*	403-1	1	1	1
Percentage of plants with ISO 14001 certification (%)	*	403-1	100%	100%	100%
Water consumption (thousand tons)	Green	303-5	3,456	3,388	3,385
Water consumption per unit production capacity (metric tons/thousand die)	Green	303-5	3.08	3.11	3.38
Water consumption per unit revenue (Metric tons/NT\$1 million)	Green	303-5	40.4	59.5	113.2
Reclaimed/Reused Water Volume (Thousand tons)	Green	303-5	5,488	5,700	5,832
Ultra-pure water consumption (Thousand tons)	Green	303-5	3,517	3,578	3,398
Ultra-pure water consumption per unit production capacity (metric tons/thousand die)	Green	303-5	3.13	3.29	3.40
Ultra-pure water consumption per unit revenue (Metric tons/NT\$1 million)	Green	303-5	41.1	62.8	113.7
Diesel consumption (liter)	Green	302-1	26,280	30,500	20,000
VOC emissions per unit wafer area (kg/m <sup>2</sup> )	Green	302-1	0.27	0.29	0.30
VOC emissions per unit production capacity (g/thousand die)	Green	302-1	14.0	15.9	14.2
VOC emissions per unit revenue (g/NT\$1 million)	Green	302-1	183	304	476
Wastewater discharge volume (Thousand tons)	Green	303-4	2,718	2,695	2,446

\*Note: There is no corresponding GRI standard. It is a self-defined material topic and voluntary disclosure item.

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>A Practitioner of Green Technology</b>					
Wastewater discharge volume per unit production capacity (metric tons/thousand die)	Green	303-4	2.42	2.48	2.44
Waste water discharge volume per unit revenue (Metric tons/NT\$1 million)	Green	303-4	31.8	47.3	81.8
Environmental accounting expenses (NT\$ thousand)	Green	*	873,414	1,221,153	865,674
Total volume of waste (metric ton)	Green	306-3	24,586	23,981	22,403
General waste (Non-hazardous waste) (metric ton)	Green	306-3	7,113	6,383	5,881
Hazardous waste (metric ton)	Green	306-3	17,473	17,598	16,522
Waste recycling rate (%)	Green	306-4	94.9	92.1	98.8
Waste generated per unit capacity (kg/thousand die)	Green	306-3	21.9	22.0	22.4
Waste generated per unit revenue (kg/NT\$1 million)	Green	306-3	280.1	431.7	749.5
<b>An Attractive Employer for Professional Talent</b>					
Number of employees	Talent	2-7	3,554	3,685	3,647
Number of male employees	Talent	2-7	2,572	2,670	2,634
Number of female employees	Talent	2-7	982	1,015	1,013
Employees'nationality	Talent	2-7	15	16	16
Number of employees with disabilities	Talent	406-1	36	36	40
Percentage of employees with disabilities (%)	Talent	406-1	1.05%	1.01%	1.13%

\*Note: There is no corresponding GRI standard. It is a self-defined material topic and voluntary disclosure item.

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>An Attractive Employer for Professional Talent</b>					
Total course enrollments for employee training	Talent	404-1	171,178	163,746	177,731
Total employee training sessions	Talent	404-1	2,603	3,091	3,089
Total man-hours of employee training (hours)	Talent	404-1	147,861	157,720	134,279
Average training hours per employee (hours)	Talent	404-1	41.6	42.8	36.8
Total employee training expense (NTD)	Talent	404-1	10,623,689	9,604,391	21,616,083
Average training expense per employee (NTD)	Talent	404-1	2,989	2,606	5,927
Return on human capital (%)	Talent	*	16.7	10.0	4.8
Return on personnel training investments (%)	Talent	404-1	1,196%	796%	209%
Percentage of employees that are female (%)	Talent	2-7	27.60%	27.54%	27.78%
Percentage of entry-level managers that are female (%)	Talent	405-1	93.14%	93.14%	93.14%
Percentage of mid-level and senior managers that are female (%)	Talent	405-1	10.34%	11.49%	12.02%
Percentage of managers in departments related to production and revenue that are female (%)	Talent	405-1	36.89%	32.04%	38.49%
Percentage of STEM-related positions held by female employees (%)	Talent	405-1	15.92%	16.34%	16.43%
Absence rate (%)	Talent	405-1	0.31%	0.22%	0.32%
Turnover rate (%)	Talent	401-1	7.26%	9.05%	4.81%
Turnover rate of new employees within 1 year (%)	Talent	401-1	9.40%	14.99%	7.77%
Voluntary turnover rate (%)	Talent	401-1	7.09%	8.80%	4.58%

\*Note: There is no corresponding GRI standard. It is a self-defined material topic and voluntary disclosure item.

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>An Attractive Employer for Professional Talent</b>					
Number of union members	Talent	407-1	83	86	88
Percentage of employees with union membership (%)	Talent	407-1	2.41%	2.38%	2.36%
Female-to-male total salary ratio of managerial roles (%)	Talent	405-2	94.55%	95.68%	95.02%
Female-to-male remuneration ratio of managerial roles (%)	Talent	405-2	94.55%	95.28%	95.30%
Female-to-male total salary ratio of non-managerial roles (%)	Talent	405-2	108.71%	108.42%	106.99%
Female-to-male total remuneration ratio of non-managerial roles (%)	Talent	405-2	111.47%	111.43%	109.28%
Percentage of job openings filled by internal employees (%)	Talent	*	84.50%	85.90%	65.80%
Unpaid parental leave reinstatement rate (%)	Talent	401-3	66.67%	82.35%	71.43%
Unpaid parental leave retention rate (%)	Talent	401-3	87.50%	80.00%	100.00%
Percentage of employees with average approval of 7 points and above (10-point scale)	Talent	401-3	72.3%	76.2%	75.3%
Safety - Disabling Injury Frequency Rate	Talent	403-9	0	0	0.41
Safety - Disabling Injury Severity Rate	Talent	403-9	0	0	18
Frequency-severity indicator	Talent	403-9	0	0	0.09
Number of injured / fatalized - employees	Talent	403-9	0	0	3
Number of injured / fatalized – Contractors	Talent	403-9	1	0	1
RBA Self-Assessment Questionnaire (SAQ) score	Talent	205-2	92.6	93.2	93.3
Occupational diseases caused by chemical exposures	Talent	403-10	0	0	0

\*Note: There is no corresponding GRI standard. It is a self-defined material topic and voluntary disclosure item.

Primary Indicators	Chapter of the Sustainability Report on Nanya Indicators	GRI Standard No.	2021	2022	2023
<b>An Active Participant in Giving Back to Society</b>					
Breakdown of investment amount by type of charity: Charities (%)	Common Good	*	8.09%	5.44%	7.46%
Breakdown of investment amount by type of charity: Community investment (%)	Common Good	*	2.49%	9.97%	30.20%
Breakdown of investment amount by type of charity: Commercial initiatives (%)	Common Good	*	89.41%	84.59%	62.33%
Breakdown of resources invested in charity: Cash contributions (%)	Common Good	*	89.60%	83.54%	68.02%
Breakdown of resources invested in charity: Material contributions (%)	Common Good	*	2.12%	7.72%	12.48%
Breakdown of resources invested in charity: Employee volunteers (%)	Common Good	*	0.44%	0.50%	12.63%
Breakdown of resources invested in charity: Management costs (%)	Common Good	*	7.84%	8.24%	6.87%

\*Note: There is no corresponding GRI standard. It is a self-defined material topic and voluntary disclosure item.

## 9.3 GRI Standards Index

### Usage Statement

Nanya has reported contents for 2023/01/01-2023/12/31 according to GRI Standards 2021.

GRI 1 Version

GRI 1: Foundation 2021

Applicable GRI Standards

N/A

Information Disclosed	Corresponding Chapter	Page	Reason for Omission
GRI 2: General Disclosures 2021			
2-1 Organization details	About Nanya	p.18	
2-2 Entities included in the Sustainability Report	About this Report	p.195	
2-3 Reporting period, frequency, and contact person	About this Report	p.195	
2-4 Restatements of information	About this Report	p.195	
2-5 External assurance	Appendix - Assurance Statements	p.224	
2-6 Organizational activities, value chain, and relationship with other entities in the value chain	<p>About Nanya</p> <p>Sustainable Supply Chain Management</p> <ul style="list-style-type: none"> <li>Nanya's supply chain can be divided into "materials production" and "non-material production." The materials production supply chain is the Company's main supply chain. There was a total of 391 Tier 1 suppliers in 2023, mainly distributed in Asia (69%), America (20.7%), Europe (6.9%), and Oceania (3.3%).</li> </ul>	p.18 p.136	
2-7 Employee information	<p>Talent Cultivationand Development</p> <ul style="list-style-type: none"> <li>Employee Diversity: As of 2023, the Company has a total of 3,647 formal employees in Taiwan and in overseas subsidiaries (including 86 interns). There were 3,540 employees in Taiwan, accounting for 97.07% of all employees, and the 107 formal employees in overseas subsidiaries accounted for 2.93%.</li> </ul>	p.70	
2-8 Information on other workers	Talent Cultivationand Development	p.70	
2-9 Governance structure and composition	Corporate Governance	p.170	
2-10 Nomination and selection of the highest governance unit	Corporate Governance	p.169	
2-11 Chairperson of the Highest Governance Unit	Corporate Governance	p.170	
2-12 Role of the highest governance unit in supervising impact management	Sustainable Governance and Organization	p.170	
2-13 Appointments for managing impact	Corporate Governance	p.170	
2-14 Role of the highest governance unit in sustainability reporting	Sustainable Governance and Organization	p.24	
2-15 Conflict of interest	Corporate Governance	p.169	

Information Disclosed	Corresponding Chapter	Page	Reason for Omission
<b>General Disclosures</b>			
GRI 2: General Disclosures 2021			
2-16	Critical Issues for Communication	Sustainable Governance and Organization / Corporate Governance	p.170
2-17	Collective intelligence of the highest governance unit	Corporate Governance	p.170
2-18	Performance evaluation of the highest governance unit	Corporate Governance	p.170
2-19	Remuneration Policy	Corporate Governance	p.171
2-20	Process for determining remuneration	Corporate Governance	p.171
2-21	Percentage of Annual Remuneration	Compensation of Senior Executives	p.171
2-22	Statement on the Sustainable Development Strategy	President's Message	p.4
2-23	Policy commitments	Integrity and Transparency	p.186
2-24	Internalize policy commitments	Innovation – Strategy and Performance of Material Topics / Responsible Procurement – Strategy and Performance of Material Topics Talent – Strategy and Performance of Material Topics / Common Good – Strategy and Performance of Material Topics Green – Strategy and Performance of Material Topics / Integrity and Transparency – Strategy and Performance of Material Topics	p.168
2-25	Procedures for remedying negative impacts	Innovation – Strategy and Performance of Material Topics / Common Good – Strategy and Performance of Material Topics Responsible Procurement – Strategy and Performance of Material Topics / Talent – Strategy and Performance of Material Topics Green – Strategy and Performance of Material Topics / Integrity and Transparency – Strategy and Performance of Material Topics	p.168
2-26	Mechanisms for seeking recommendations and matters of concern	Integrity and Transparency	p.186
2-27	Regulatory compliance	In 2023, Nanya was fined by the competent authority once due to an occupational accident; there were no other violations of laws and regulations.	p.187
2-28	Membership of associations	About Nanya	p.19
2-29	Approach to stakeholder engagement	Materiality Analysis	p.26
2-30	Collective bargaining agreements	The company does not possess collective bargaining agreements to disclose.	p.63 Not applicable

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
<b>Material Topics</b>				
GRI 3: Material topics in 2021				
3-1	Procedures for deciding on material topics	Materiality Analysis	p.26	
3-2	List of material topics	Materiality Analysis	p.26	
<b>Material Topics_Ethical Corporate Management</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、168	
GRI 205 Anti-corruption				
205-1	Operations assessed for risks related to corruption	We evaluate business locations in Taiwan and overseas based on compliance with ethical corporate management related regulations and internal audit mechanisms each year. No corruption risks were found in 2023.	p.187	
205-2	Communication and training about anti-corruption policies and procedures	Business Integrity · Implement regular internal education and training sessions, and provide sufficient reporting channels and protection to cultivate professional ethics and legal compliance culture. · Completion of ethics and anti-trust training was both 100%	p.186	
205-3	Confirmed incidents of corruption and actions taken	Business Integrity - There was 1 corruption cases in 2023	p.187	
GRI 206 Anti-competitive Behavior				
206-1	Legal actions for anti-competitive behavior	None had occurred in 2023	p.187	
<b>Material Topics_R&amp;D and Innovation</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、44	
-*	*Note: There is no corresponding GRI standard. It is a self-defined material topic and voluntary disclosure item.	R&D and Innovation · R&D expenses accounted for 25.3% of revenue. R&D personnel accounted for 28.9% of employees, up 1.8% compared to 2022. · A total of 110 AI applications were developed as of 2023 and annual benefits reached NT\$380 million.	p.6	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
<b>Material Topics_Customer Service</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、168	
<b>GRI 418 Customer privacy</b>				
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Customer Service · We established the Confidential Information Management Procedure and use of related documents is authorized and distributed by the document control center. There were no violations of customer privacy in 2023.	p.191	
<b>Material Topics_Supply Chain Sustainability Management</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、135	
<b>GRI 204 Procurement Practices</b>				
204-1	Percentage of purchases from local supply chains	Sustainable Supply Chain Management - Local materials accounted for 31% of the procurement amount in 2023	p.137	
<b>GRI 308 Supply Chain Environmental Assessment</b>				
308-1	New suppliers that were screened using environmental criteria	Sustainable Supply Chain Management · The Supplier Code of Conduct requires suppliers to comply with environmental standards, and 100% of high risk suppliers were audited and required to make improvements	p.139	
308-2	Negative environmental impacts in the supply chain and actions taken	Sustainable Supply Chain Management · 100% of new suppliers signed the Supplier Code of Conduct (including business ethics, human rights, environment, and safety and health) and conducted risk assessments	p.139	
<b>GRI 414 Supply Chain Social Assessment</b>				
414-1	New suppliers that were screened using social criteria	Sustainable Supply Chain Management · 100% of new suppliers signed the Supplier Code of Conduct (including business ethics, human rights, environment, and safety and health) and conducted risk assessments	p.139	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
<b>Material Topics_Risk Management</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、168	
-	-	<p>Risk Management</p> <ul style="list-style-type: none"> <li>Nanya established the Sustainable Development Committee under the Board of Directors. The committee supervises the implementation of risk management, environmental protection, social responsibility, and corporate governance to help the Company achieve sustainable operation. The Sustainable Development Committee Charter stipulates that the committee shall have no less than 3 members, and half or more of all members must be independent directors. The committee is currently formed by 4 independent directors and 3 executive directors; all 7 members have an expertise in crisis management and risk management.</li> </ul>	p.172	
<b>Material Topics_Climate Change</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、102	
<b>GRI 305 Emissions</b>				
305-1	Direct (Scope 1) GHG emissions	Greenhouse Gas Inventory - Scope 1 emissions was 56,654 metric tons CO <sub>2</sub> e in 2023	p.107	
305-2	Energy indirect (Scope 2) GHG emissions	Greenhouse Gas Inventory - Scope 2 market standards emission was 373,670 metric tons CO <sub>2</sub> e in 2023	p.107	
305-3	Other indirect (Scope 3) GHG emissions	Greenhouse Gas Inventory - Scope 3 emissions was 816,878 metric tons CO <sub>2</sub> e in 2023	p.107	
305-4	GHG emissions intensity	430 kg-CO <sub>2</sub> e / thousand die > 14,395 kg CO <sub>2</sub> e / NT\$1 million in revenue	p.106	
305-5	Reduction of GHG emissions	<p>Reduction of GHG emissions</p> <ul style="list-style-type: none"> <li>In order to reduce the emissions of PFCs into the air, we formulated the acceptance criteria of PFCs reduction rate processed by Local Scrubber. The gas treatment efficiency of CF<sub>4</sub> should reach above 90%, and the reduction rate of processing C<sub>3</sub>F<sub>8</sub>, C<sub>4</sub>F<sub>6</sub>, C<sub>4</sub>F<sub>8</sub>, CHF<sub>3</sub>, CH<sub>2</sub>F<sub>2</sub>, and SF<sub>6</sub> should reach more than 95% while the reduction rate of NF should be over 99%.</li> </ul>	p.108	
305-6	Emissions of ozone-depleting substances (ODS)	The Company does not use ODS	-	Not applicable
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	<p>Air Pollution Prevention</p> <ul style="list-style-type: none"> <li>Main air pollutants are acidic and alkaline waste gas and organic waste gas, in which acidic and alkaline waste gas is processed in acid/alkaline scrubbers; Organic waste gas combustion efficiency rate reaches 99%; Volatile organic compounds (VOCs) emissions was reduced by 90% and above</li> <li>NOx emissions was 11.21 metric tons and SOx emissions was 1.66 metric tons in 2023</li> </ul>	p.126	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
<b>Material Topics_Green Products</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、102	
<b>GRI 302 Energy</b>				
302-1	Energy consumption within the organization	<p>Energy Management</p> <ul style="list-style-type: none"> <li>Energy consumption mainly included purchased electricity (accounted for 89.4% of the Company's energy consumption), natural gas (accounted for 6.4% of the Company's energy consumption), and steam (accounted for 4.2% of the Company's energy consumption).</li> <li>The Company purchased renewable energy(electricity) account for 3.2% of the company's energy consumption in 2023.</li> </ul>	p.109	
302-2	Energy consumption outside of the organization	-	-	Not applicable
302-3	Energy intensity	<p>Energy Management</p> <p>Electricity consumption per unit capacity was 0.77 MWh/NT\$1 million in 2023 (an increase of 13% compared to 2022), and natural gas consumption per unit capacity was 5.2 m3/NT\$1 million (an increase of 18% compared to 2022).</p>	p.109	
302-4	Reduction of energy consumption	<p>Energy Management</p> <ul style="list-style-type: none"> <li>A total of 36 energy conservation plans were completed in 2023, and saved an estimated 5,337 MWh.</li> </ul>	p.111	
302-5	Reductions in energy requirements of products and services	<p>Innovation- Green Products</p> <ul style="list-style-type: none"> <li>Nanya actively researches and develops low energy consumption products, and assist clients lower demand for energy during their usage of electronic products so that greenhouse gas emissions can be reduced.Energy consumption of mainstream process products in the current year compared with the previous generation will save more than 514.15 million kWh, or approximately 1,851 megajoules, and reduce greenhouse gas emissions by approximately 253,993 ton-CO<sub>2</sub>e in 2023.</li> </ul>	p.51	
<b>GRI 305 Emissions</b>				
305-6	Emissions of ozone-depleting substances (ODS)	The Company does not use ODS	-	
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	<p>Air Pollution Prevention</p> <ul style="list-style-type: none"> <li>Main air pollutants are acidic and alkaline waste gas and organic waste gas, in which acidic and alkaline waste gas is processed in acid/alkaline scrubbers; Organic waste gas combustion efficiency rate reaches 99%; Volatile organic compounds (VOCs) emissions was reduced by 90% and above</li> <li>NOx emissions was 11.2 metric tons and SOx emissions was 1.66 metric tons in 2023</li> </ul>	p.126	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
<b>Material Topics_Energy Management</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、102	
<b>GRI 302 Energy</b>				
302-1	Energy consumption within the organization	<p>Energy Management</p> <ul style="list-style-type: none"> <li>Energy consumption mainly included purchased electricity (accounted for 89.4% of the Company's energy consumption), natural gas (accounted for 6.4% of the Company's energy consumption), and steam (accounted for 4.2% of the Company's energy consumption).</li> </ul>	p.109	
302-3	Energy intensity	<p>Energy Management</p> <ul style="list-style-type: none"> <li>Electricity consumption per unit capacity was 0.77 MWh/NT\$1 million in 2023 (an increase of 13% compared to 2022), and natural gas consumption per unit capacity was 5.2 m<sup>3</sup>/NT\$1 million (an increase of 18% compared to 2022).</li> </ul>	p.109	
302-4	Reduction of energy consumption	<p>Energy Management</p> <ul style="list-style-type: none"> <li>A total of 36 energy conservation plans were completed in 2023, and saved an estimated 5,337 MWh.</li> </ul>	p.111	
302-5	Reductions in energy requirement of products and services	<p>Innovation – Green Products</p> <ul style="list-style-type: none"> <li>Nanya actively researches and develops low energy consumption products, and assist clients lower demand for energy during their usage of electronic products so that greenhouse gas emissions can be reduced.</li> <li>Energy consumption of mainstream process products in the current year compared with the previous generation will save more than 514.15 million kWh, or approximately 1,851 megajoules, and reduce greenhouse gas emissions by approximately 253,993 ton-CO<sub>2</sub>e in 2023.</li> </ul>	p.52	
<b>Material Topics_Water Management</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、102	
<b>GRI 303 Water (2018)</b>				
303-1	Interactions with water as a shared resource	<p>Water Resource Management</p> <ul style="list-style-type: none"> <li>Our main water source comes from the Shihmen Reservoir, and is channeled and processed through the Taoyuan Canal before being supplied as production water. The gravity flow is used to independently channel water without affecting the ecology of water resources and any other purposes of usage.</li> </ul>	p.113	
303-2	Management of water discharge-related impacts	<p>Water Resource Management</p> <ul style="list-style-type: none"> <li>All wastewater generated by Nanya is collected according to property classification and channeled into proper wastewater equipment for treatment. To ensure that the quality of discharged wastewater is in line with regulations, we and the Environmental Protection Department have monitored the quality of effluents via synchronous connections. In addition, off-line sampling, analysis, and detection are outsourced every quarter to improve the wastewater quality management and control.</li> </ul>	p.113	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
Material Topics_Water Management				
GRI 303 Water (2018)				
303-3	Water withdrawal	<p>Water Resource Management</p> <ul style="list-style-type: none"> <li>Nanya's total water withdrawal was 3,385 million liters in 2023, in which Taoyuan Canal is the main source of water, accounting for approximately 96.4% (3,265 million liters), followed by well water at approximately 2.8% (94 million liters), and tap water at approximately 0.8% (26 million liters). Rainwater was recycled and reused every year in the past, but was temporarily suspended in 2023 due to equipment changes of new fab expansion.</li> </ul>	p.114	
303-4	Water discharge	Water Resource Management - Total water discharge was 2,446 million liters in 2023, down 9.2% compared to 2022	p.114	
303-5	Water consumption	Water Resource Management - Total water consumption was 939 million liters in 2023	p.114	
Material Topics_Waste Management				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、102	
GRI 306 Waste 2020				
306-1	Waste generation and significant impacts related to waste	Waste Management - Includes sources of raw materials and related materials contained hazardous substances, extensive use of acid/alkaline chemicals, and extensive use of monitor wafers.	p.130	
306-2	Management of significant impacts related to waste	<p>Recycling</p> <ul style="list-style-type: none"> <li>Nanya established a Hazardous Substance Free (HSF) management system for materials, ensured that the produced wafers, rear-end IC packaging, and DIMM module products would conform to the international regulations and related specifications of clients towards HSF management.</li> <li>Recycled wastes in the plant, for example, copper sulfate waste liquid was directly converted to copper cakes for recycling.</li> <li>Acidic wastes were outsourced for recycling, such as sulfuric acid and phosphoric acid.</li> <li>Monitor wafers are reused 8-11 times.</li> </ul>	p.130	
306-3	Waste generation	Waste Management - Total waste was 22,403 metric tons in 2023, including 5,881 metric tons of general waste and 16,522 metric tons of hazardous waste	p.129	
306-4	Waste disposal and transfer	<p>Waste Management</p> <ul style="list-style-type: none"> <li>In 2023, 16,786 metric tons of waste was disposed of and transferred, accounting for 74.9% of total waste generated, in which 5 metric tons was "prepared for reuse," 16,780 metric tons was "reused," and 1 metric ton was "other recycling."</li> </ul>	p.129	
306-5	Direct disposal of waste	<p>Waste Management</p> <ul style="list-style-type: none"> <li>In 2023, Nanya directly disposed 5,618 metric tons of waste, in which 5,342 metric tons was reused after treatment, accounting for 23.85% of the total waste volume. The amount of waste directly incinerated was 185 metric tons, accounting for 0.8% of the total waste. The amount of waste buried after solidification and directly buried was 91 metric tons, accounting for 0.4% of the total waste. The quantity of other disposals (including physical treatment, recycling, purification, and reuse) is 4 metric tons, accounting for 0.2% of the total waste.</li> </ul>	p.129	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
<b>Material Topics_Employee Development</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、56	
GRI 404 Training and education				
404-1	Average hours of training per year per employee	<p>Talent Cultivation</p> <ul style="list-style-type: none"> <li>Training or learning and development activities organized by Nanya provided over 134,000 hours of training in 2023, and employees on average received 36.8 hours of training.</li> </ul>	p.82	
404-2	Programs for upgrading employee skills and transition assistance programs	<p>Talent Cultivation</p> <ul style="list-style-type: none"> <li>Even though Nanya did not provide assistance plans for "Employees separated due to retirement or termination of employment," Nanya has established a superior training and development system based on people, and continues to enhance employees' competencies and competitiveness. We encourage employees to pursue continuing education, and there are a total of 743 employees in on-the-job degree programs.</li> </ul>	p.87	
404-3	Percentage of employees receiving regular performance and career development reviews	Talent Cultivation - The ratio of employees subject to multi-aspect performance evaluations (180-degree evaluation, 360-degree evaluation) was 100% in 2023	p.88	
<b>Material Topics_Occupational Health and Safety</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、56	
GRI 403 Occupational Health and Safety (2018)				
403-1	Occupational safety and health management system	<p>Occupational Health and Safety</p> <ul style="list-style-type: none"> <li>Nanya obtained ISO 45001 management system certification and established the EHS Management Manual to protect all workers (including employees and non-employees). Occupational safety and health committee meetings are held every month at a regularity higher than what is required by the law. Labor representatives make up 41.7% of the committee members. They jointly review the performance of safety and health work and projects.</li> </ul>	p.98	
403-2	Hazard identification, risk assessment, and incident investigation	<p>Occupational Health and Safety</p> <ul style="list-style-type: none"> <li>Established accident investigation procedures and require the cause to be analyzed for occupational accidents, false alarms, and incidents that affect physical and mental health, including direct, indirect, and root cause, and require improvement and preventive measures to be proposed before closing the case.</li> <li>There were no major, severe, and disabling occupational accidents in 2023, but there were 3 occupational accidents, and accident investigation and analysis have been conducted, and 23 false alarms were still analyzed.</li> </ul>	p.98	
403-3	Occupational health services	<p>Occupational Health and Safety</p> <ul style="list-style-type: none"> <li>Operating environment monitoring, classified management of chemicals and exposure assessment, general and special hazard health examinations are periodically conducted each year, and we also formulated health management plans and provided on-site services (including ergonomic prevention, maternal health protection, and abnormal workload)</li> </ul>	p.98	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
<b>Material Topics_Occupational Health and Safety</b>				
GRI 403 Occupational Health and Safety (2018)				
403-4	Worker participation, consultation, and communication on occupational health and safety	Occupational Health and Safety · Opinion box, feedback during department meetings, SWAT, and Safety & Environment Event Tracking System (SETS) are used to collect proposals or recommendations from workers and create a culture in which all employees participate	p.98	
403-5	Worker training on occupational health and safety	Occupational Health and Safety · Hazards are controlled from the paths and workers that are exposed to hazards. Safety procedures were established and a total of 19,119 hours of safety and health training was provided to 1,818 participants in 2023 (in which 988 participants received 16,644 hours of training for certifications required by law and supervisors of special hazard operations); 56 emergency response drills were conducted to enhance employee training and response abilities.	p.97	
403-6	Promotion of worker health	Occupational Health and Safety - The Company arranges doctors to conduct interviews or provide guidance, and organizes dietary education and health promotion events (quitting smoking, weight loss).	p.59	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Health and Safety · Continue to propose clean room operating environment and medium and high risk improvement plans, which are divided into general operating environment risk descriptions and improvement plans and clean room risk descriptions and improvement plans.	p.97	
403-8	Workers covered by an occupational health safety management system	Occupational Health and Safety · Nanya is committed to providing employees with a safe, healthy and high-quality workplace, while maintaining the safety of contractors. Nanya established the EHS Management Manual to provide a safe, healthy, and high-quality work environment to all workers at the Company, so that all workers of the Company have the ability to recognize hazards and prevent occupational accidents when engaging business activities, in hopes of achieving zero occupational injuries and zero occupational disease.	p.97	
403-9	Work-related injuries	Occupational Health and Safety - In 2023, employees in the fab were involved in a total of 3 occupational accidents, all of which were physical injuries (falls, collisions).	p.99	
403-10	Work-related ill health	Occupational Health and Safety - There were no occupational disease cases in 2023.	p.99	
<b>Material Topics_Talent Retention and Employee Care</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、56	
GRI 202 Market Presence (Material topics)				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Talent retention · In 2023, the average salary of non-managerial full-time employees at Nanya was NT\$1,220 thousand, down 23% compared to 2022. The median salary of non-managerial full-time employees was NT\$1,054 thousand.	p.76	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
<b>Material Topics_Talent Retention and Employee Care</b>				
GRI 401 Employment				
401-1	New employee hires and employee turnover	<p>Employee Diversity</p> <ul style="list-style-type: none"> <li>There were 175 new employees in 2023, new employees accounted for approximately 4.8% of all employees</li> <li>The total turnover rate was 4.81% and voluntary turnover rate was 4.58% in 2023</li> </ul>	p.72	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	<p>Talent retention</p> <ul style="list-style-type: none"> <li>The Company adjusted the starting salary of unexperienced new recruits, made an annual salary adjustment for all managers and employees, and made structural adjustments to the salaries of special departments and specialists in July 2023. This allows employees to work in a happy and safe environment.</li> <li>The Company provides more frequent employee health examinations than required by law</li> </ul>	p.73	
401-3	Parental leave	<p>Employee Care</p> <ul style="list-style-type: none"> <li>In 2023, a total of 317 employees were entitled to take unpaid parental leave, and a total of 29 people had actually applied; reinstatement rate was 71.43% and retention rate was 100%.</li> </ul>	p.95	
<b>Material Topics_Community Involvement</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、152	
GRI 413 Local Communities (Material Topic)				
413-1	Operations with local community engagement, impact assessments, and development programs	<p>Community Involvement</p> <ul style="list-style-type: none"> <li>Participate in public affairs of nearby communities, environmental protection activities, and create a harmonious and mutually beneficial living circle by working with art and charity organizations, such as supporting the factory area (mountain area) environment cleaning activity and making donations to 8 social welfare foundations.</li> <li>Community communication (Improve road facilities for the benefit of 16,797 people for the surrounding neighborhood)</li> </ul>	p.155	
<b>Material Topics_Human Rights</b>				
GRI 3: Material topics in 2021				
3-3	Management of material topics	Materiality Analysis	p.26、152	

Information Disclosed	Corresponding Chapter		Page	Reason for Omission
<b>Material Topics_Human Rights</b>				
<b>GRI 406 Non-discrimination (Material topics)</b>				
406-1	Incidents of discrimination and corrective actions taken	<p>Employee Human Rights Protection</p> <ul style="list-style-type: none"> <li>All employees signed the labor and ethics policy, and took the courses "2023 Policy and Code of Conduct Training," "2023 Unsafe Workplace Behavior and Prevention Training," and "2023 Personal Data Protection Promotion"; all employees were required to take the courses, 100% of employees received training, and received a total of 10,947 hours of training.</li> </ul>	p.57	
406-1	Incidents of discrimination and corrective actions taken	Established 2030 long-term human rights goals / There were no incidents of discrimination in 2023	p.62	
<b>GRI 409 Forced or Compulsory Labor (Material topics)</b>				
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	<p>Employee Human Rights Protection</p> <ul style="list-style-type: none"> <li>Ensure there is no compulsory labor through RBA internal audits</li> <li>Sustainable Supply Chain Management</li> <li>The Supplier Code of Conduct requires suppliers to comply with the RBA. We also distributed SAQ to survey the human rights risk of suppliers, and also audited and required high risk suppliers to make improvements.</li> </ul>	p.186 P.139	
<b>GRI 200: Economic Series</b>				
<b>GRI 201 Economic Performance</b>				
201-1	Direct economic value generated and distributed	Business strategies and performance / Attracting and Retaining Talent / Appendix – Nanya Sustainability	p.22	
201-3	Defined benefit plan obligations and other retirement plans	Talent retention / Corporate Governance	p.171	
<b>GRI 203 Indirect Economic Impacts</b>				
203-1	Infrastructure investments and services supported	Social influence	p.129	
203-2	Significant indirect economic impacts	<p>Community Involvement</p> <ul style="list-style-type: none"> <li>1,229 people received design thinking creative integration education</li> <li>Donated NT\$1,000,000 in equipment for distance learning in rural elementary schools</li> <li>Donated 320 DDR4 32GB memory modules to the Advanced Semiconductor Technologies and Devices Laboratory of National Yang Ming Chiao Tung University</li> <li>Youth Empowerment Flight Scholarship supports 4 national athletes and 4 elite athletes</li> <li>Donated to 8 social welfare foundations</li> </ul>	p.155	

Information Disclosed		Corresponding Chapter	Page	Reason for Omission
GRI 300: Environmental Series				
GRI 301 Materials				
301-3	Reclaimed products and their packaging materials	Green Product Development	p.124	
GRI 400: Social Series				
GRI 402 Labor/Management Relations				
402-1	Minimum notice periods regarding operational changes	<p>Employee Diversity</p> <ul style="list-style-type: none"> <li>Under the human resource coordination system of the Formosa Plastics Group, employees are transferred first before they are made redundant. Transfer and redundancy of employees are announced and notified in advance in accordance with the Labor Standards Act and relevant laws, whereas department managers would also communicate fully with the employees in question.</li> </ul>	p.73	
GRI 405 Diversity and Equal Opportunity				
405-1	Diversity of governance bodies and employees	<p>Corporate Governance</p> <ul style="list-style-type: none"> <li>The Board of Directors consists of 12 members from different professional backgrounds, including 4 independent directors and 2 female directors. Board members have diverse backgrounds, including different industries and experience</li> <li>Employee Diversity</li> <li>Nanya had a total of 3,647 formal employees (including 86 interns) in Taiwan and overseas subsidiaries in 2023, and also hired employees from 16 different countries and employees with disabilities, creating a workplace with diversity.</li> </ul>	p.170	
405-2	Ratio of basic salary and remuneration of women to men	<p>Talent retention</p> <ul style="list-style-type: none"> <li>Female-to-male total salary + remuneration ratio of managerial roles was 95.30% Female-to-male total salary + remuneration ratio of non-managerial roles was 109.28%</li> </ul>	p.76	
GRI 415 Public Policy				
415-1	Political donations	<p>Business Integrity</p> <ul style="list-style-type: none"> <li>Nanya stipulates in the Business and Ethical Code of Conduct that it will not make donations other than to charity (such as political donations), in order to remain politically neutral</li> </ul>	p.186	
GRI 417 Marketing and Labeling				
417-2	Incidents of non-compliance concerning product and service information and labeling	None had occurred in 2023	p.186	
417-3	Incidents of non-compliance concerning marketing communications	<ul style="list-style-type: none"> <li>None had occurred in 2023</li> </ul>	p.186	

Note: The 2018 version is used for GRI 303 and 403, the 2020 version is used for GRI 306, and the 2016 version is used for all others

# 9.4 SASB Index

Topic	Code	Accounting Metric and Properties	Chapter	Page
Greenhouse Gas Emissions	TC-SC-110a.1	◆ 1. Scope 1 emissions 2. PFCs emissions	Greenhouse Gas Inventory	p.107
	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		p.108
Energy Management in Manufacturing	TC-SC-130a.1	◆ 1. Total energy consumed 2. Percentage of grid electricity 3. Percentage of renewable	Energy Management	p.109-110
Water Management	TC-SC-140a.1	◆ 1. Total water withdrawal and percentage accounted for by high water stress regions 2. Total water consumption and percentage accounted for by high water stress regions	Water Resource Management	p.115
Waste Management	TC-SC-150a.1	◆ Amount of hazardous waste from manufacturing, percentage recycled	Recycling Outside Plant	p.129
Employee Health & Safety	TC-SC-320a.1	◆ Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	Occupational Health and Safety	p.97
	TC-SC-320a.2	◆ Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations		-
Recruiting & Managing a Global & Skilled Workforce	TC-SC-330a.1	◆ 1. Percentage of foreign employees 2. Percentage of employees located overseas	Employee Diversity	p.65
Product Lifecycle Management	TC-SC-410a.1	◆ Nanya's products and services are wafer manufacturing, not an end product manufacturer, and there is no applicable content.		
Materials Sourcing	TC-SC-440a.1	◆ Description of the management of risks associated with the use of critical materials	Management of Conflict Minerals	p.147
Intellectual Property Protection & Competitive Behavior	TC-SC-520a.1	◆ Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	Status and Strategy of Intellectual Property	p.48

Topic	Code	Unit of Measure and Metric Content	Chapter	Page
Activity Metric	TC-SC-000.A	◆ Total production from own manufacturing facilities and production service contracts	Product and business performance	p.21
	TC-SC-000.B	◆ Percentage of production from owned facilities		p.21

◆ Quantitative ◆ Qualitative Description

# 9.5 Contents Corresponding to the UN Global Compact

Classification	Unit of Measure and Metric Content	Page
<b>Human rights</b>		
Companies should support and respect internationally recognized human rights	Nanya supports and respects internationally recognized human rights, complies with international human rights regulations, and established a human rights policy. Please refer to "Talent: Human Rights - Employee Human Rights Protection" in this report for details.	p.57
Companies should ensure that they are not involved in violations of human rights	Nanya established the Supplier Code of Conduct, which includes a code of conduct for suppliers/contractors, RBA, and regulations and requirements of conflict-free minerals. We also provide suppliers with comprehensive training. Please refer to "Responsible Procurement: Sustainable Supply Chain Management Process, Responsible Mineral Procurement Management" of this report for details.	p.139 p.147
<b>Labor Standards</b>		
The business sector should support freedom of association and recognize collective bargaining right	Nanya supports freedom of association and recognizes collective bargaining right, and explicitly includes freedom of association and collective bargaining in its human rights policy and Code of Business and Ethical Conduct. Please refer to "Talent: Employee Human Rights Protection" in this report for details.	p.57
Eliminating all forms of compulsory labor	Nanya prohibits all forms of forced and compulsory labor, and explicitly states that forced labor is prohibited in its Human Rights Policy, Code of Business and Ethical Conduct, and Labor and Ethics Policy. Please refer to "Talent: Human Rights - Employee Human Rights Protection" in this report for details.	p.57
Prohibiting child labor	Nanya prohibits all forms of child labor, and also explicitly prohibits child labor in its Human Rights Policy, Code of Business and Ethical Conduct, and Labor and Ethics Policy. Please refer to "Talent: Human Rights - Employee Human Rights Protection" in this report for details	p.57
Eliminating discrimination in hiring and against occupation	Nanya eliminates discrimination in employment and occupation, and explicitly states that it has zero tolerance for discrimination in its Human Rights Policy, Code of Business and Ethical Conduct, Labor and Ethics Policy, and Written Statement on Prohibition of Workplace Violence, establishing a number of grievance and whistleblowing channels. Please refer to "Talent: Human Rights - Employee Human Rights Protection, Employee Protection and Communication" in this report for details.	p.57 p.60
<b>Environment</b>		
Companies should take preventive measures in response to environment challenges	Nanya introduced the TCFD in 2018 and publicly signed the TCFD in 2021. Since 2022, Nanya has published TCFD reports in accordance with the Task Force on Climate-related Financial Disclosures Recommendation for two consecutive years. In addition, Nanya also pays attention to the value chain's nature-related dependencies and the scope of risk impacts. Therefore, Nanya became an early adopter of the TNFD in 2023, and actively established complete LEAP mechanisms to assess the nature and climate-related dependencies and risks of its own business locations, upstream supply chain, and downstream customers, and formulated corresponding strategies and actions, in hopes of reducing the impact of risks. Please refer to "Green: Nature and Climate Management" in this report for details.	p.103

Classification	Contents or Overview of Report	Page
<b>Environment</b>		
We take action to improve methods for becoming more responsible to the environment	Nanya implemented life cycle thinking and design for environment, and consider environmental impacts of procurement, manufacturing, transportation, product use, disposal, and recycling when developing new products, assisting customers with developing low-energy consumption products. Please refer to "Innovation: Green Product Development" of this report for details.	p.50
Encourage the development and promotion of eco-friendly technology	We actively manage all impacts on the environment incurred during operational processes. On the aspects of energy, resources, emissions, and waste, we adopt higher standards than regulations to avoid or reduce risks of the impacts, setting goals to review execution results of sustainability performance in order to fulfill our responsibilities for cleaner production and safeguard the natural environment. We also work with suppliers and assist them in energy conservation and carbon reduction plans, in order to lower the negative environmental impact of our overall value chain. Please refer to "Green" and "Responsible Procurement: Improve the Sustainability of Supply Chains" of this report for details.	p.101 p.144
<b>Anti-corruption</b>		
Companies should exert every effort to oppose all forms of corruption, including extortion and bribery	All Nanya employees must comply with the Code of Business and Ethical Conduct, and also complete anti-corruption education and training. Please refer to "Integrity and Transparency: Anti-corruption" of this report for details.	p.187

## 9.6 Table of Sustainability Indicators for Disclosure

No.	Indicator	Type of Indicator	Unit	Performance	Corresponding Chapter
1	Total energy consumption, percentage of purchased electricity, and renewable energy use	Quantified	Gigajoules (GJ), percentage (%)	1. Total energy consumption: $3.09 \times 10^9$ MJ 2. Percentage of purchased electricity: 89.4% 3. Renewable energy use rate <sup>Note</sup> : 2.9%	Green/Energy and Resource Management/ Energy Management
2	Total water withdrawal and total water consumption	Quantified	1,000 m <sup>3</sup>	1. Total water withdrawal: 3,385 m <sup>3</sup> 2. Total Water Consumption: 939 m <sup>3</sup>	Green/Energy and Resource Management/ Water Management
3	Weight and percentage of hazardous waste recycled	Quantified	Metric tons (t), percentage (%)	1. Weight of hazardous waste: 16,522 t 2. Percentage of hazardous waste recycled: 99.8%	Green/Environmental Pollution Prevention/ Waste Management
4	Describe the type of occupational accident, number of people, and percentage	Quantified	Percentage (%), quantity	1. occupational accident: A total of 3 occupational accidents occurred to employees in the fab, all of which were physical injuries (falls, collisions). 2. The frequency of employee disabling injuries (number of disabling injuries / million working hours) : 0.41 3. The disabling injury severity rate (number of work days lost/million working hours) : 18	Talent/Happy and Safe Workplace/ Occupational Health and Safety

Note : Renewable energy use rate=Renewable energy use / total energy use

No.	Indicator	Type of Indicator	Unit	Performance	Corresponding Chapter
5	Disclosure of Product Lifecycle Management: Includes the weight of scrapped products and electronic waste and the percentage recycled	Quantified	Metric tons (t), percentage (%)	Nanya's products and services are wafer manufacturing, not an end product manufacturer, and there is no applicable content.	Not applicable
6	Description of risk management related to the use of key materials	Qualitative description	-	The Company established complete risk management measures for key materials, see the contents for details.	Responsible Procurement/Sustainable Supply Chain Management/Sustainable Supply Chain Risk Management Process
7	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	Quantified	Reporting currency	0	Integrity and Transparency/Ethical Corporate Management/Antitrust
8	Quantity of Main Products by Category	Quantified	Varies with product category	Standard products: 867,343 thousand pieces Low Power Products: 41,432 thousand pieces	Business Strategies and Performance/Annual Output and Markets

## 9.7 climate-related Information of TWSE/TPEx Listed Companies

Risks and opportunities of the Company brought by climate change and response measures taken by the Company

Item	Corresponding Chapter	Item	Corresponding Chapter
1. Describe supervision and governance of climate-related risks and opportunities by the board of directors and management.	Chapter 5 Green-Nature and Climate Management <a href="#">TNFD·TCFD Report</a>	5. If scenario analysis is carried out to evaluate resilience to climate change risks, describe the scenarios, parameters, assumptions, analysis factors, and main financial impact.	Chapter 5 Green-Nature and Climate Management
2. Describe how the climate risks and opportunities identified affect the Company's business, strategies, and financial position (short-term, mid-term, long term).	Chapter 5 Green-Nature and Climate Management <a href="#">TNFD·TCFD Report</a>	7. If internal carbon pricing is used as a planning tool, describe the basis for pricing.	<a href="#">TNFD·TCFD Report</a>
3. Describe the impact of extreme weather events and transition actions on the Company's financial position.	Chapter 5 Green-Nature and Climate Management <a href="#">TNFD·TCFD Report</a>	8. If climate-related goals were set, describe the activities covered, scope of GHG emissions, schedule, and progress each year. If carbon offset or RECs are used to achieve goals, describe the source and amount of offset quota or the number of RECs.	Chapter 5 Green – Energy and Resource Management
4. Describe how the identification, assessment, and management process of climate risks is integrated in the overall risk management system.	Chapter 5 Green-Nature and Climate Management Chapter 8 Integrity and Transparency – Risk Management	9. Greenhouse gas inventory and assurance, reduction targets, strategies and specific action	Please refer to the following table
5. If scenario analysis is carried out to evaluate resilience to climate change risks, describe the scenarios, parameters, assumptions, analysis factors, and main financial impact.	Chapter 5 Green-Nature and Climate Management		

- GHG inventory and assurance

Item	2022	2023
Scope of data coverage/assurance	Nanya Technology Corporation Fab 3	Nanya Technology Corporation Fab 3
Direct GHG emissions (Scope 1)	59,788 metric tons/CO <sub>2</sub> e	56,654 metric tons/CO <sub>2</sub> e
Energy indirect GHG emissions (Scope 2)	381,166 metric tons/CO <sub>2</sub> e	373,670 metric tons/CO <sub>2</sub> e
Direct and energy indirect GHG emissions (Scope 1+2)	440,954 metric tons/CO <sub>2</sub> e	430,324 metric tons/CO <sub>2</sub> e
GHG emissions intensity	7.7 metric tons CO <sub>2</sub> e/NT\$1 million	14.4 metric tons CO <sub>2</sub> e/NT\$1 million
Certification body	SGS Taiwan	SGS Taiwan
Assurance standards	ISO 14064-3:2006	ISO 14064-3:2019
Assurance opinions	SGS carried out inspection procedures in accordance with the inspection criteria. The evidence shows that the GHG claim made by Nanya's Fab 3 is in compliance with current regulations of the competent authority, does not violate the material difference threshold, and meets the reasonable level of assurance recognized by the competent authority.	SGS carried out inspection procedures in accordance with the inspection criteria. The evidence shows that the GHG claim made by Nanya's Fab 3 is in compliance with current regulations of the competent authority, does not violate the material difference threshold, and meets the reasonable level of assurance recognized by the competent authority.

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

The Company plans to disclose the GHG reduction baseline year and its data, reduction targets, strategies, specific action plans, and achievement of reduction targets within the boundaries of the consolidated financial statements in 2025. Please refer to Chapter 5 Green - Climate Change Management for the current GHG reduction targets, strategies, and action plans of the parent company (all production sites).

# 9.8 Assurance Statement



## INDEPENDENT ASSURANCE OPINION STATEMENT

### Nanya Technology 2023 Sustainability Report

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

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

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

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

#### Scope

The scope of engagement agreed upon with Nanya Technology includes the following:

1. The assurance scope is consistent with the description of Nanya Technology 2023 Sustainability Report.
2. The evaluation of the nature and extent of the Nanya Technology's adherence to AA1000 Accountability Principles (2018) and the reliability of specified sustainability performance information in this report as conducted in accordance with type 2 of AA1000AS v3 sustainability assurance engagement.

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

#### Opinion Statement

We conclude that the Nanya Technology 2023 Sustainability Report provides a fair view of the Nanya Technology sustainability programmes and performances during 2023. The sustainability report subject to assurance is materially correct without voluntary omissions based upon testing within the limitations of the scope of the assurance, the information and data provided by the Nanya Technology and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are correctly represented. The sustainability performance information disclosed in the report demonstrate Nanya Technology's efforts recognized by its stakeholders.

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

#### Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- a review of issues raised by external parties that could be relevant to Nanya Technology's policies to provide a check on the appropriateness of statements made in the report.
- discussion with managers on Nanya Technology's approach to stakeholder engagement. Moreover, we had sampled 2 external stakeholders to conduct interview.
- interview with 26 staffs involved in sustainability management, report preparation and provision of report information carried out.
- review of materiality assessment process.
- review of key organizational developments.
- review of the extent and maturity of the relevant accounting systems for financial and non-financial reports.
- review of the findings of internal audits.
- the verification of performance data and claims made in the report through meeting with managers responsible for gathering data.
- review of the processes for gathering and ensuring the accuracy of data, followed data trails to initial aggregated source and checked sample data to greater depth during site visits.
- the consolidated financial data are based on audited financial data, we checked that this data was consistently reproduced.
- review of supporting evidence for claims made in the reports.
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness, and Impact as described in the AA1000AP (2018).

#### Conclusions

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

#### Inclusivity

In this report, it reflects that Nanya Technology has continually sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for the information of Environment, Social and Governance (ESG) in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the Nanya Technology's inclusivity issues and has demonstrated sustainable conduct supported by top management and implemented in all levels among organization.

#### Materiality

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

#### Responsiveness

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

#### Impact

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

#### Performance Information

Based on our work described in this statement, specified sustainability performance information such as GRI Standards disclosures disclosed in this report, Nanya Technology and BSI have agreed upon to include in the scope. In our view, the data and information contained within Nanya Technology 2023 Sustainability Report are reliable.

#### GRI Sustainability Reporting Standards (GRI Standards)

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

#### Assurance Level

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

#### Responsibility

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

#### Competency and Independence

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

For and on behalf of BSI:



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Peter Pu, Managing Director BSI Taiwan

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Statement No: SRA-TW-803150

2024-05-20

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