



GREEN MEMORY CREATES SUSTAINABILITY
SUSTAINABILITY REPORT

NANYA
2022



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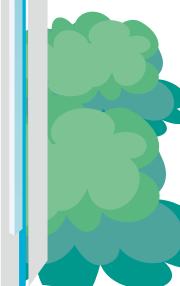
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President's Message

To all stakeholders of Nanya:

In 2022, The world has been impacted by a number of global uncertainties, including geopolitical conflicts in Europe, COVID-19 control measures in China, global high inflation, interest rate hikes, supply chain disruption and consumer spending weakness. As many industries have faced operating challenges, the DRAM sector has also experienced the worst setback in the last 15 years. Thanks to the collective efforts of our management teams and all employees, Nanya Technology has delivered its 10th consecutive profitable years successfully, and is deeply grateful for all the support and recognition from our customers and supply chains.

Corporate Sustainability with Innovation

Nanya has set a sustainability strategy to well position the company in the DRAM industry, pursuing innovation and self-developed technology. We have successfully transitioned our company into a technological autonomy by accumulating R&D experience and cultivating an outstanding technology team. Our R&D expenses and manpower tripled over the past five years, and we have built an R&D team with a thousand members. Innovative R&D results were significant in 2022 and the cumulative number of patents granted has surpassed 5,900, ranking the second in Taiwan. In the development of new generation processes and products, we have begun small-scale production of our first product, 8Gb DDR4, using our first generation 10nm process technology (1A); trial production of our second product DDR5 has also begun. The leading product using second generation 10nm-class process technology (1B) is currently in the piloting production stage, with the goal to begin small-volume production in 2023. We expect our customers will enjoy around 60% of energy efficiency improvement as we implement our fully self-developed new technology. Furthermore, Nanya has developed 90 AI applications and cultivated 400 AI specialists in 2022, which has comprehensively improved our process and production efficiency, and has made our factory, an “AI smart manufacturing” facilities.

In order to enhance the future competitiveness, and meet our long-term development needs, Nanya has committed to invest NT\$300 billion to build an advanced 10nm DRAM factory. The construction has formally begun in June 2022, is expected to create 2,000 employment opportunities when completed, and will drive significant economic and sustainability development in Taiwan.

Eco-friendly DRAM Products and Manufacturing

DRAM has become a critical component for the intelligence age. To best serve our customers, we have developed high performance and “eco-friendly products”. All of our products has integrated with the life cycle thinking and designs for the environmental sensitiveness. Furthermore, our Green Product Promotion Committee (GPPC) has been responsible for green product management. In 2022, our energy-saving products accounted for approximately 90% of our total revenue, and helped customers saving more than 600 million kWh of electricity over the year, allowing our innovative “green products” and technologies to make quantifiable contributions to the environment. Nanya is also actively implementing cleaner production practices and incorporating green management into our business operations. We implemented 25 energy-saving action plans in 2022, saving over 4.37 million kWh of electricity. With regard to renewable energy, we purchased 7.88 million kWh of electricity from onshore wind farms in 2022, and will continue to purchase renewable energy (e.g., solar power or offshore wind power). We expect that our renewable energy consumption will reach 250 million kWh within 10 years starting from 2023. Furthermore, we continue to dedicate efforts to obtain the green building label, and installed a water resource management system that recycles 92.9% of process water.

Nanya published its first TCFD report in 2022 and disclosed its climate change management strategy and actions. Our carbon reduction goals were formally certified by the SBTi, and we target to reduce carbon emissions by 25% in 2030 on our path towards net zero emissions.

Talent Development and Cultivation

“Talents” are the foundation of our company’s innovation, operation, and sustainable development. We have implemented various methods to deepen the company’s core values, which was designated as “integrity and responsibility”, “efficiency and innovation”, and “sustainable management”, to unite our employees, while building a business with pride. In 2022, we continued the implementation on the talent cultivation action plan [We Together, We Learn, We Grow], which aimed for the development of comprehensive talents so that their knowledge and creativity could sprout. The average number of training hours per employee reached 42.8 hours in 2022—the highest in the past four years. Furthermore, demand on talent has increased due to the rapid growth of the Taiwanese semiconductor industry. In response, Nanya signed an agreement with Chang Gung University to establish a master’s program on memory technology, and also established a Semiconductor Talent Cultivation College together with Taipei City University of Science & Technology, providing a site for internships, scholarships, and professional knowledge guidance. We hope to step up talent cultivation through industry-academia collaboration and create a win-win situation for industry, schools, and students. Nanya hopes to enhance the international competitiveness of Taiwan’s memory industry through talent cultivation, recruitment, introduction, gathering, and retention, and hopes to provide more learning support and planning options for students.



Together with our Sustainable Partners

Nanya has also collaborated with upstream and downstream partners and peers in the industry to move forward as one, towards sustainability. We have guided 295 suppliers towards the ideas of sustainability and 100% of our partners have co-signed the Nanya Corporate Social Responsibility Guarantee. We have completed the first three-year sustainability audit in 2022, and provided suppliers with guidance to make improvements, which have been completed across our supply chain. Meanwhile, we launched the Nanya Technology Corporation Sustainable Development Mutual Benefit Initiative, and invited dozens of suppliers to jointly declare their commitment to ESG during the annual supplier seminar, so that suppliers will take action to reduce carbon emissions and use clean energy to mitigate the impact of climate change. Suppliers also made the commitment to protect human rights and create friendly and safe workplaces. Procurements from key suppliers that participated in the first phase reached 70%, and transactions with participating contractors reached 96%. We are actively participating in ESG actions and semiconductor ESG initiatives of the SEMI international semiconductor consortium, and became a co-founder of the Semiconductor Climate Consortium (SCC), in hopes of staying up-to-date on trends and working towards mutual benefits through exchanges and learning.

We Care our Employees and Society

During the outbreak of COVID-19 since 2020 through 2022, Nanya's Epidemic Response Task Forces have implemented a variety of epidemic prevention and response measures to protect employee health and maintain a safe work environment in Taiwan and oversea. We have also taken a number of actions to help our neighbors and society, including our donation of 50,000 vaccines, and a number of medical and health supplies to New Taipei Government for our communities to jointly weather the storm. After the epidemic situation subsided in the second half of the year, many employee activities resumed, and Nanya expanded its positive influence through the Love Connection Project and volunteer activities, continuing to organize "Doing one thing for Tamsui River," "Earth Hour Event," "Fair Trade," and numerous events that feature local culture; the events had a total of over 10,000 participants. Nanya also participated in the Cross-school Distance Learning of New Taipei City Government, with the goal of using the power of technology to assist elementary schools in rural areas to create a new distance learning model across schools. To promote sustainability concepts within company, Nanya implemented benefits measures, such as providing subsidies for purchasing electric scooters, calling on employees to "Ride to be Green." and provides employees with a childbirth subsidy to lift the burden on employees caring for the next generation.

Sustainability Recognitions

As a responsible corporate citizen, Nanya continues to dedicate efforts to sustainable development; in fact, our performance has been recognized in Taiwan and overseas. Nanya has demonstrated a balanced development of its business performance and ESG. In terms of international recognition, Nanya once again included in Dow Jones Sustainability (DJSI) World Index, and Dow Jones Emerging Market Index for the fourth time in 2022, ranked No.1 among the global memory industry. We were recognized as the highest honor with "A List" in the CDP Water Security category, "A-, Leadership Level" in the CDP Climate Change category, and selected as a component of the FTSE4Good Emerging Markets Index for the 5th consecutive year. In terms of domestic recognition, Nanya received the National Enterprise Environmental Protection Award, Top 10 Sustainable Companies Award from the TCSA, Outstanding Professional Award in the GCSA, Classic Outstanding Enterprise in the New Taipei City Enterprise Classic Award, Work-Life Balance Award from the Ministry of Labor, selected as a component of FTSE4Good TIP Taiwan ESG Index for 5 consecutive years, and ranked in the top 5% of the Corporate Governance Evaluation for the 5th time.

Together, We are Stronger

The global challenges may continue, however, Nanya has proven that we have a competent, and confident team, to further improve our competitiveness in business and ESG. Nanya will utilize team wisdom to enhance innovation and R&D capabilities, and will strive to achieve ESG goals through three strategies: "Creating Shared Value," "Promoting Sustainable Mutual Prosperity," and "Achieving Sustainable Development." Our vision is to become the "Best DRAM Partner for a Smart Generation." We will work closely with our global partners and stakeholders to further strengthen our competitive advantages and leadership in the global semiconductor industry. We will also show our resilience in a volatile environment and work together towards a sustainable future with net zero emissions.

President



Sustainability Performance**The Best Partner for Our Customer****13.8%**

R&D expenses accounted for 13.8% of revenue and R&D personnel accounted for 27.1% of employees.

NT\$360 million

Benefits generated by 90 AI applications in a year

812 cases

Number of patents granted in 2022





Sustainability Performance

A Promoter of Shared Value

100%

Completed three-year sustainability audit of key suppliers

100% for 5 consecutive years

Completion rate of deficiency improvements in supplier sustainability audit

35 suppliers

Number of suppliers that supported the Sustainable Development Mutual Benefit Initiative in 2022

An Active Participant in Giving Back to Society

2,481 hours

Number of hours invested in social engagement

Donated 50,000 rapid test kits

Donation to a local government during the outbreak of COVID-19

Influential enterprise in fair trade

Recognized as an influential enterprise for supporting fairtrade for 5 consecutive years

A Trustworthy Company

Elevated sustainability governance

The Sustainable Development Committee was restructured from an internal management organization to a functional committee under the Board of Directors

Constituent stock of the DJSI World Index

Selected as a constituent stock of the DJSI World Index and Emerging Markets Index

Top 5%

Top 5% in the 9th Corporate Governance Evaluation of Public Companies



Recognition and Awards

DJSI

Member of
**Dow Jones
Sustainability Indices**
Powered by the S&P Global CSA

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

CDP



CDP Climate Change Leadership Level / Water Security A List Supplier Engagement Rating Leaderboard (A)

ISS ESG



Prime Status by the Institutional Shareholder Services (ISS) ESG's Corporate Rating

S&P Global



Top 5% S&P Global ESG Score

FTSE4Good



FTSE4Good Emerging Markets Index
FTSE4Good TIP Taiwan ESG Index

MSCI



MSCI All Country World Index (ACWI)



SBTi certification

The first memory company in the world to obtain SBTi certification



Corporate Governance

Top 5% in the 9th Corporate Governance Evaluation, Top 10% in listed company with a market value of more than 100 billion dollars.



Global Outstanding Professional Award



Talent Quality-management System (TTQS)

Gold Award (Enterprise Version)



Top 10 TCSA Model

Corporate Sustainability Report Top 50 /Information Security Leadership Award/Growth through Innovation Leadership Award / Circular Economy Leadership Award / Water Resource Management Leadership Award / Transparency and Integrity Leadership Award / Creative Communication Leadership Award



National Enterprises Environmental Protection Award

2022 National Enterprises Environmental Protection Award



New Taipei City Enterprise Classic Award

Classic Extraordinary Enterprise Award, Innovative R&D Award, and Investment Contribution Award



Responsible Business Alliance (RBA)

Validated Assessment Program (VAP) Platinum Certification



Work-Life Balance Award

Ministry of Labor Work-Life Balance Award – Employee Care Award

Recognition and
Accolades of
Nanya in 2022



01

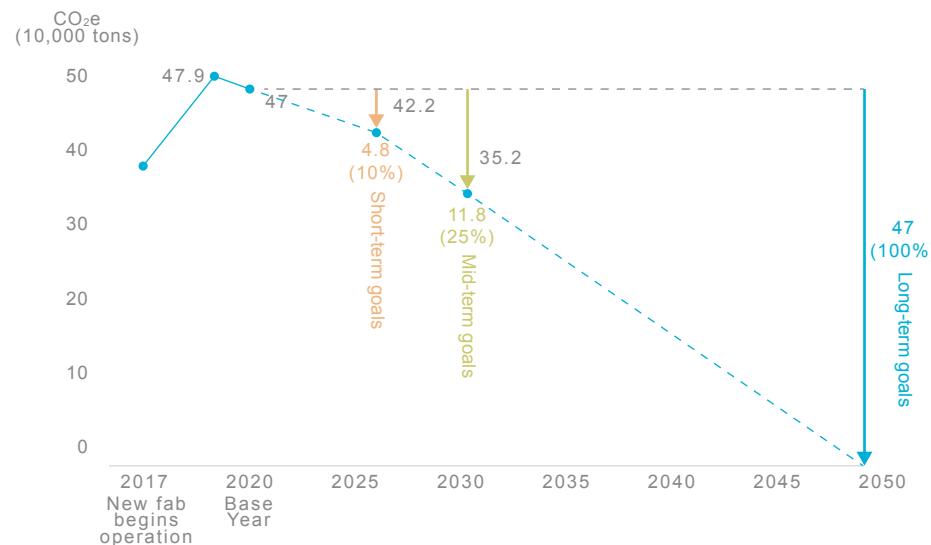
Feature Stories

Nanya Obtains SBTi Certification on the Path to Net Zero

Nanya actively takes action to reduce GHG emissions and set science based targets (SBT). Nanya obtained SBTi certification in 2022 and set a milestone for its carbon reduction action. The climate change strategy formulated based on the TCFD framework gradually achieves carbon reduction goals through operations of the internal management platform and external resource integration, in order to create a future with net zero emissions.

In response to the global trend of carbon reduction, Nanya began planning the carbon reduction path for its SBT in 2021, and submitted an application for certification at the end of the year. The Company set its carbon reduction path after referencing the WB2D (Well Below 2°C) scenario, and dedicates its efforts to reducing Scope 1 and Scope 2 emissions by 2.5% and reducing Scope 3 emissions per unit production by 2.7% a year. We plan to reduce Scope 1+2 emissions by 25% and Scope 3 emissions per unit capacity by 27% by 2030, and will dynamically adjust carbon reduction goals and path based on overall production capacity and expansion plans, in order to achieve net zero emissions by 2050.

Carbon reduction paths planned by Nanya



Note:

1. Achieve the SBT of Nanya by 2030 (WB2D scenario)

2. The goal is to achieve net zero emissions by 2050

3. Emission goals and path will be revised based on status of company operation and market changes

Nanya planned five climate change strategies based on the TCFD framework, and manages reduction measures based on the three scope of GHG emissions to ensure that its SBT are achieved as planned.

► Scope 1: Manage raw material use and install GHG abatement equipment

Nanya's Scope 1 emissions are mainly from the use of process gases for thin-film and etching manufacturing processes. Even though the use of process gases cannot be avoided, the Company has adopted "consumption reduction" and "Local Scrubber" to manage GHG emissions.

Consumption reduction

The Company is actively improving process efficiency and product yield to maintain competitiveness in the industry. The transition to the 20-nm process significantly increased production capacity, and therefore effectively reduces energy and resource consumption for per unit production. Furthermore, Nanya has introduced AI application to assist the operation of the factory to improve machinery scheduling, control raw materials inputs, and reduce the amount of waste generated. Results have gradually appeared under various raw material reduction plans.

Local Scrubber

Local scrubbers are installed at the end of Nanya's manufacturing process, and use combustion to break the chemical bond of gas molecules, while using cleaning solution to remove the majority of GHGs, such as PFCs, NF₃, and N₂O. At present, the removal efficiency of equipment used by Nanya is at 90% and above, reducing direct GHG emissions by approximately 600,000 tons CO₂e. We will continue to implement reduction equipment management strategies to improve reduction performance. Local scrubbers will also be installed in equipment of the new factory to minimize the impact on the environment.

Actions to reduce Scope 1 emissions have achieved a 33.8% reduction in 2022 compared to 2020.

► Scope 2: Low carbon and renewable energy use

Scope 2 emissions of Nanya are mainly from purchased electricity. The Company implements energy conservation management through ISO 50001, reduces electricity consumption by approximately 5 million kWh through energy conservation plans each year, and also actively uses low carbon energy.

Nanya supports the policy of local governments by purchasing steam generated from gas instead of coal combustion and cut the emission in half. With regard to renewable energy, we first installed solar panels on our factories, and obtained T-RECs on the trading platform. We had used 11 million kWh green electricity in 2021-2022, and will used at least 25 million kWh of renewable energy from 2023 (20MW solar power plant). Nanya continues to contact large renewable energy developers and plans to purchase electricity from sites with installed capacity reaching 100MW and above, in order for renewable energy to reach at least 25% of electricity use in 2030.

► Scope 3: Supply chain and product energy consumption management

Nanya's Scope 3 emissions mainly consists of two items, namely "purchase of raw materials from upstream supply chain" and "electricity consumption from downstream product use." We will continue to conduct supply chain sustainability audits for upstream supply chain management, and provide guidance for deficiency improvement. We

monitor the climate change goals and emissions of suppliers through reviews and communication, and jointly reduce carbon emissions with our suppliers. In 2022, Nanya will review emissions of suppliers and include emissions of packaging and processing plants in management. We will also engage in exchanges with key suppliers in sustainability topics. In the future, we will continue to encourage suppliers to use green electricity and implement cleaner production plans, in order to reduce the carbon footprint of their raw materials.

In the development of new generation processes and products, we have begun small-scale production of our first product using first generation 10-nm process technology (1A), 8Gb DDR4; trial production of our second product DDR5 has also begun. The pilot product using second generation 10nm-class process technology (1B) is currently in the trial production stage, with the goal to begin small-scale production in 2023. Once mass production begins, energy efficiency will improve by 60% and above. Furthermore, we are also actively developing and carrying out the mass production of low-power products, in which the power consumption of new generation DDR5 products is 16% or more lower than DDR4 products.

Climate change is a challenge for all of humanity, and Nanya takes action on climate change response strategies and GHG reduction methods. Meanwhile, we have closely followed developments of clean energy technologies, as well as the opportunities and impacts brought by market tools, such as carbon transaction and carbon credits, and will use a variety of reduction tools to achieve our goal and contribute to the Earth.



► Nanya joined the Taiwan Alliance for Net Zero Emission

02

Feature Stories

Bringing Together the Semiconductor Industry Towards a Sustainable Future

The pandemic, geopolitics, and inflation in 2022 forced industries around the world to change their strategy, and turned supply chain resilience into an issue that companies cannot avoid if they want to do business sustainably. Meanwhile, issues such as global climate change, human rights protection, and information security risks require a different supply chain management model from the past, which focused on technology, quality, services, delivery, and cost, and highlighted the sustainability of supply chains, bringing supply chain risk management and their connections closer than ever before.

Milestones of Nanya's Sustainable Supply Chain Management

Nanya implemented supply chain risk management and provides guidance for making improvements, gradually achieving a sustainable supply chain.



Nanya included sustainability performance in supplier evaluations, and began organizing the Sustainable Supply Chain Conference in 2020, communicating the importance of sustainability issues with suppliers through various channels. We also achieved excellent results in jointly implementing projects with suppliers for the human rights of migrant workers, energy conservation, and Earth Hour.

▶ Connecting Industries to Jointly Implement Corporate Sustainability

Nanya began actively participating in operations of sustainability associations and organizations in the industry at the end of 2021 in response to developments in the international situation. We hope to leverage the associations to drive the entire semiconductor industry on the path towards sustainability. For example, we participated in the Taiwan Alliance for Net Zero Emission and semiconductor sustainability ESG initiative to share and explore sustainability issues and information.

Direction for cooperation



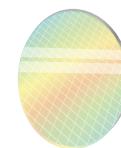
Outsourcing, contractor

- Green factory experience sharing
- Promotion of renewable energy use



Gas, chemicals

- Alternative products or solutions with low carbon and environmental footprint
- Optimization of partial shipment and storage tank cleaning



Wafer

- Green factory experience sharing
- Promotion of renewable energy use

In response to the issuance of the TCFD Report starting in 2022, Nanya reexamined the connections in its supply chain from the perspective of Scope 3 GHG emissions, and reviewed the methodology and database. Starting in the second half of the year, we arranged exchanges between senior managers of Nanya and suppliers, and prioritized suppliers with high transaction amounts and (relatively) high emissions. The first batch of suppliers included in the exchanges cover nearly one third of our procurement amount. In the process, Nanya learned about how different raw materials suppliers, such as fabs, chemicals, and gas suppliers, respond to sustainability issues, and provided customers with solutions for potential dilemmas in sustainable development. We also hope to discuss solutions and invited major electricity users, such as commissioned OSAT company to jointly use clean energy.

With the feedback from exchanges with suppliers, Nanya co-founded the Semiconductor Climate Consortium (SCC) with other members of the global semiconductor industry before COP27 at the end of 2022, working together with the industry in GHG inventory, education, innovative technologies, and policy to achieve net zero emissions. Nanya began serving as the chairman of SEMI Sustainable Manufacturing Committee in 2022, integrating industry resources and jointly planning the vision for the semiconductor industry.

► Nanya Initiative for Sustainable Development

Nanya announced the “Initiative for Sustainable Development” during the Sustainable Supply Chain Conference in 2022 based on the preliminary consensus of suppliers. Nanya invited suppliers to jointly declare that they will continue to promote sustainable development in the future, and that they will continue their efforts in climate change and human rights protection. Nanya will continue to encourage suppliers to set renewable energy, energy conservation, and carbon reduction goals to achieve net zero emissions. We will evaluate and implement sustainable processes proposed by suppliers to jointly promote cleaner production! We will also promote the human rights program that advocates zero crimes against humanity, zero forced labor, and zero discrimination, and create a workplace that promotes the happiness and safety for employees through the supply chain.



The purpose of sustainable development goals emphasizes “Leave no one behind.” Hence, the 17th goal is partnerships. Nanya hopes that its experience will help even more suppliers, and will continue to integrate industry resources by working with associations, so that the semiconductor industry will work towards a sustainable and mutually prosperous future.

03

Feature Stories

Implanting the DNA of ESG Through Education to Build Competencies for Sustainability

Seeing the attention drawn by sustainability issues, Nanya realized that awareness and understanding of ESG, corporate sustainability, SDGs, and climate change will become competencies needed by all employees in the future. As such, Nanya has systematically implanted the DNA of ESG into every employee, stakeholder, and global citizen through a top-down, inside-out approach in its complete training and development system and education!

Raising sustainability awareness by leading through example

To increase the visibility of sustainability issues, managers of Nanya reached a consensus in 2018 to develop corporate sustainability capabilities on the basis of the existing system, and capability building plans were formulated for the Board of Directors, managers and all employees:



Board of Directors level

Sustainability issues are periodically scheduled for discussion, and functional committees that reviews the Company's sustainability strategies, goals, and performance were established in coordination with the trend of corporate governance (Risk Management Committee and Corporate Sustainability Committee). The ratio of ESG-related courses was gradually increased for continuing education of directors, e.g. climate change-related courses accounted for approximately 40% of courses in 2021.



Management level

The Company has several management committees for managing ESG-related goals and performance review, such as sustainability, innovation, and talent. Furthermore, performance and remuneration mechanisms for managers are also linked to ESG to ensure that the spirit of ESG is incorporated into the management of various departments. As for courses, elements of ESG and SDGs were incorporated into the strategy camp for senior managers and management team building course in 2019, so that managers will have a comprehensive understanding of related trends.



All employees

The Company plans a variety of ESG-related training courses for all employees, and employees are all required to take the courses and pass the tests, including risk management training, ethical corporate management training, RBA-training, and green product training. Meanwhile, ESG courses are also included in new employee training camp, so that employees will understand the context in which the Company is promoting corporate sustainability, in hopes that they will be able to apply concepts and the spirit of sustainability in the workplace. Furthermore, we have implemented many ESG-related incentive measures, such as the "Green Trade Secrets Contest," which encourages employees to propose innovative measures that offer environmental benefits, and also include ESG-related indicators in employee evaluations, in hopes of inspiring employees to set more quarterly goals related to corporate sustainability.



Promoting SDGs during the senior manager consensus camp



Encouraging employees to participate in the volunteer service team and Love Connection Project

▶ Encourage employees to become involved in communities and build connections

In addition to internal activities, the Company also plans community involvement activities to build connections with communities, e.g. setting up the Fair Trade Pantry, organizing charity markets, or planning environmental protection camps for parents and children, promoting SDGs in every corner of the Company.

Nanya established a volunteer service team and implemented the Love Connection Project in 2021, encouraging employees to join community involvement actions, such as "Earth Hour" and "Doing One Thing for Tamsui River," 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. Combined with the Company's incentives system, this will drive even more employees to participate and gradually expand the influence of the volunteer team and Nanya. The volunteer team currently has 87 people and the number of community involvement hours is gradually growing at a rate of 10% a year.

Furthermore, the Company is also providing subsidies and benefits related to ESG. Employees receive information on the environmental impact of their actions in this process. For example, if employees trade-in their scooter for an electric scooter to commute to work, they will receive a subsidy of NT\$10,000. Every scooter that is traded in for an electric scooter will on average reduce carbon emissions by 2.3 tons. A total of 102 people submitted applications and received subsidies last year, and it has reduced carbon emissions by approximately 234.6 tons.

▶ Connecting CSR X USR to increase synergies of education taking root

Nanya strives to create mutual benefits and mutual prosperity based on the four themes of community involvement "talent cultivation," "humanistic care," "environmental conservation," and "good neighbor." Taiwan's semiconductor industry has flourished in recent years and has been competing for talent. Nanya must expand talent recruitment and provide more in-depth memory education to pursue sustainable development. Nanya thus began cooperating with universities in Northern Taiwan to offer memory courses, such as the Layout programs, the master's program in memory established with Chang Gung University in 2022, or the Semiconductor Talent Cultivation College established with Taipei City University of Science & Technology, providing professional teachers, internship site, and scholarships so that students will have different career choices.

Apart from expertise in memory, Nanya also considers the key competencies needed by next generation talent, including SDGs, CSR, and ESG. Hence, we combined efforts with USR for sustainability concepts to take root in campuses. We thus engaged in numerous industry-academia collaboration cases, including the design of animations on Nanya's sustainability image together with Fu Jen University, and jointly implementing the Creative Art Co-creation Project with Ming Chi University of Technology.

Nanya began participating in the three-year project "Design Thinking, Creative Integration" planned by Ming Chi University of Technology in 2022. The project incorporates the spirit of SDGs into design thinking courses, and allows the roughly 1,200 freshmen, sophomores, and juniors engage in cross-disciplinary, cross-departmental exchanges and discussion, so that they will find even more solutions for local cultural or social issues from the

perspective of sustainability. Nanya's managers participated in this process and engaged in cross-generation sustainability exchanges. Nanya hopes that this model can be expanded or duplicated on other campuses, so that even more possibilities will be created for corporate sustainability.

Nanya Technology Corporation x Ming Chi University of Technology, Design Thinking x Creative Integration

Phase 1 Design Thinking

Nearly 900 freshmen from various departments formed mixed groups, so that students will understand SDGs, climate change, and other trends, and learn design thinking concepts to develop solutions for local issues

Nanya's role

Serves as the course's lecturer and introduces key trends in sustainable development, the context of Nanya's corporate sustainability, and related examples.

Phase 2 Creative Integration

Encourage students to transform concepts into actions; 300 students from the College of Management and Design used their creativity to jointly think about examples of ESG practices, and accumulate capabilities for community empowerment and placemaking.

Nanya's role

Serves as the course's lecturer and introduces how Nanya utilizes its expertise and social influence to resolve problems and implement corporate sustainability.

Phase 3 Business Ethics

Guide students to think about ESG from different perspectives and interact with stakeholders. Over a hundred students were divided into groups and participated in a competition to inspire their creativity. The process was filmed into a microfilm. Lay the foundation for internships and career development.

Nanya's role

Serves as the course's lecturer and judge, and provides professional feedback for students' ideas based on its experience and from the perspective of corporate practices, which builds their mind and capabilities before entering the workplace.

Understanding corporate sustainability and staying up-to-date on key trends seems to have become a required subject. Nanya continues to embed the culture of ESG through internal training, and also 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 campuses and NGOs.



04

Feature Stories

Building Positive Energy in Society Through Creativity and Communication

Nanya's vision is to become the best memory partner in the era of AI. Innovation is our core value and stakeholders are our partners in sustainability. By sharing innovative concepts, diverse information, and ESG topics, we jointly push forward on the path to sustainable development. Over the past few years, we planned and implemented creative communication methods in hopes of bringing us closer to stakeholders, and to address material ESG topics. We established transparent and open communication platforms for diverse interactions, including our official website, ESG website, dedicated mailbox, official YouTube account, and official Facebook account. These platforms allow us to listen to internal and external recommendations and respond to stakeholders' questions and opinions, improving the efficiency and quality of communication.

Nanya achieves immediate and effective communication with stakeholders in an interesting way through a variety of innovative platforms and contents. We also share sustainability topics with partners in different sectors, actively maintain communication internally and externally, and work together in building positive energy in society. Meanwhile, we ponder on how we can make students and future generations care more about environmental issues and take circular economy seriously. We worked with campuses in utilizing creative design thinking courses to incorporate concepts of the SDGs (Sustainable Development Goals), and launched the "Copper Together" project, expanding creative communication from within the Company to schools and customers, in order to jointly make sustainable living.

To achieve immediate, effective and compelling communication with our stakeholders, The Company promotes innovative communication based on three themes "creative integration projects," "diverse Internet platforms," and "mutual benefits with partners."

Creative Integration Project: Copper Together

Inspiration for the "Copper Together" project was from the Company's hopes to draw public attention to circular economy and environmental sustainability in an interesting and creative way. Hence, we used the copper foil recycled from process wastewater and worked together with campuses and local artists to organize a series of design and art activities. Nanya formally launched the "Copper Together" project at the end of 2021, and promoted circular economy and environmental sustainability through "Industry-academia Collaboration" and "Local Art Creation".

1. Industry-academia collaboration

With regard to industry-academia collaboration, the creative design contest "Copper Together - Transformation of Copper Sulfate Waste" co-organized by Nanya and Ming Chi University of Technology used waste copper recycled from process water, and guided college freshmen to show their creativity and developed their practical capabilities by integrating the environmental concepts of SDG 13 (Climate action), SDG 14 (Life under water), and SDG 15 (Life on land) and the research model of design thinking. The recycled copper was designed into gifts featuring environmental sustainability, and the final results not only showed the importance of industry-

academia collaboration and increased participants' awareness of SDGs, but also allowed teachers and students to experience Nanya's corporate philosophy.

During the design contest, we conducted physical and virtual meetings with professors of the Department of Industrial Design from Ming Chi University of Technology, and proposed directions for improvement and strategy recommendations for the planning and implementation of design thinking and SDGs courses, student practices, design proposals, selection indicators, and event planning. In terms of communication effects, managers of Nanya promoted concepts of the SDGs on campus, and nearly 900 students participated. Design thinking courses were implemented during the semester and freshmen proposed 53 design gifts made using recycled copper. The design gifts were judged by 357 employees of Nanya and professors of Ming Chi University of Technology. Finally, the 8 winning design works were selected and exhibited in the Company's lobby for 2 months with approximately 500 visitors a day. Nanya began filming a documentary since the project was launched. Combined with creations of students of Ming Chi University of Technology, a total of 4 promotional videos were released, 2 of which were uploaded to the official YouTube channel and 3 were posted on Facebook, reaching 2,491 people with 313 interactions and sharing over 13 press releases.

A student who participated in the "Copper Together" project said: "The design contest allowed me to gain a deeper understanding of the hazards of global warming to the environment, and I began to think about ways to make the environment better." "Design thinking allowed me to understand how users feel. I then expand my search to focus on products that are suitable for copper, in order to find value in waste copper." We expect to make the public and younger generation take climate change and environmental protection more seriously through this design contest, and bring green technology and environmental sustainability concepts into campus, as well as advocating the importance of CSR and USR for a positive influence.

"Copper Together" Gold Award



Design Project: Melting

The design idea is showing that every time we use a tissue, the melting of iceberg will cause the ocean to rise continuously. The purpose is trying to draw people's attention to the impact of our actions may have on our environment.

► Communicating Sustainability with Visuals



Where does “Copper Foil” come from?

A short film to share the ideas of recycling scrap copper foil for other purposes



What can we use “Copper Foil” for?

Engaging with our team members to build sustainability part of work culture



Ways to recycle scrap copper

Recording the process of turning scrap copper into numerous uses so that more people can embrace the ESG thinking in their daily lives



► The design thinking course in Ming Chi University of Technology

2. Local art creation



Another theme of “Copper Together” is local art creation. Nanya collaborated with local New Taipei City artist, Mr. Ching Tai Chuang to transform a droplet into an artwork under the theme to cherish water resources. It was produced into a art gift in 2023, and embeds sustainability concepts into recycled materials together with artists. Finally, the gift, an artwork made using recycled copper, is used as a medium for partners to jointly cherish water resources, jointly combat climate change, and take environmental topics seriously.

► Artwork "Origin of Life", designed by local artist, Mr. Ching-Tai Chuang

Through industry-academia collaboration and local connections, the “Copper Together” Project allows stakeholders to understand the value of circular economy within the shortest time possible through diverse communication channels, such as social media, in-person seminars, courses, and exhibitions. The artwork jointly created with artist, Mr. Ching-Tai Chuang, will eventually be made into a copper gift, and will continue to have positive influences by using recycled raw materials.

► Multiple Internet platforms

Nanya hopes to interact with stakeholders through different communication methods via the Internet. We mainly engage in two-way communication with stakeholders through our official website, dedicated mailbox, customer service hotline, official Facebook account, and official YouTube channel.

ESG website

Nanya began optimizing the official [ESG website](#) in 2019, and communicates topics that stakeholders are concerned about in a simple, clear, and interesting way through a friendly interface and interactive media, thus achieving creative communication. The "Interactive Map on Energy Conservation and Carbon Reduction Benefits" was added on the official ESG website in 2021, and shows the energy conservation and carbon reduction of smart generation DRAM product applications through animations or interactive methods. As a result, energy conservation data are no longer hard number, but rather environmental protection practices for smart lifestyles.

Nanya's ESG website announces the latest news on sustainability each quarter, provides a subscription function, and irregularly sends e-newsletters to achieve immediate communication. Based on quantitative data, the ESG page of the old official website was clicked an average of roughly 5,000 times a month in 2017. After the website was optimized, the number of clicks grew to an average of 15,000 times each month in 2021 and 2022, showing that the creative communication results of the company website has attracted the attention and gained the recognition of stakeholders.



► Nanya Technology Corporation ESG Website

YouTube platform

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. Vlogs use a lively and interesting first person perspective to give viewers a glimpse of Nanya's participation in environmental conservation actions, including beach cleaning and removing the exotic species Mikania micrantha. In the presentation of animations, we have engaged in industry-academia collaboration with Fu Jen Creative Design Center to introduce Nanya in a warm way. 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. Another film "Best DRAM Partner for Smart World" shows how Nanya uses innovation as the foundation for the Company's growth and seeks to make innovative breakthroughs in process technology, successfully developing 10-nm DRAM technology.

Nanya's YouTube channel currently has 22 videos that cover innovative processes, green manufacturing, community involvement, happy enterprise, and corporate image. The most viewed video had 1,373 views. Nanya will continue to make breakthroughs and continue to produce high quality videos to better communicate with the public and younger generation.



| Nanya Technology Corporation YouTube platform

► Mutual Benefits with Partners

Nanya creates synergies through response, appeals, and mutual benefits with government agencies, associations, schools, and suppliers.



Government

Nanya was invited by the Ministry of Science and Technology in 2021 to share green technologies through an online video forum coorganized with Business Today, enhancing Nanya's competitiveness through ESG. We were invited by New Taipei City Government the same year to participate in the CommonWealth Future City Summit – Innovative New Taipei City, co-organized with CommonWealth Magazine, exploring industrial development and future opportunities of New Taipei City from the perspective of companies and government. Nanya is also participating in the Development Base of Engineering Talents Project of the Industrial Development Bureau, Ministry of Economic Affairs, and was invited to join the Podcast of CommonWealth Magazine "Listen

to CommonWealth – Innovative Breakthrough", during which we shared plans for human resources under the topic "Cross-sector Collaboration in Talent Cultivation, Industry-Academia-Research Institutes Protecting the Nation's Foundation, as well as how industry, academia, and research institutes work together to cultivate and recruit talent.



Association

Nanya participated in the 2021 SEMICON Taiwan held by SEMI, and showed its green products and manufacturing results through the online forum and green innovation exhibition hall. Nanya also participated in the 2022 SDGs Asia organized by TCSA, participating in a total of 3 online ESG forums with a total of 2,562 views. Nanya also participated in 1 physical exhibition the same year – SEMICON Taiwan 2021" with a total of 34,674 visitors.



School

In addition to the "Copper Together" Project implemented together with Ming Chi University of Technology and the animations produced with Fu Jen University, Nanya also collaborated with Macronix International Co., Ltd., ESMT, and Etron Technology, Inc., established a master's program in memory with Chang Gung University, and jointly established the Nanya Semiconductor Talent Cultivation College with Taipei City University of Science & Technology to cultivate talent for Taiwan's memory industry.



Supply chain

Nanya has supported Earth Hour for 5 consecutive years starting in 2018, and began inviting suppliers to join the initiative in 2021, in which 52 partners responded. Nanya organized the 3rd Nanya Sustainable Supply Chain Seminar and Sustainable Development Mutual Benefit Initiative in 2022, inviting dozens of suppliers and contractors to participate in efforts to achieve sustainable development. We also led 295 suppliers that supported our sustainability concepts and in signing the Nanya Corporate Social Responsibility Commitment, which was signed by 100% of suppliers. Nanya seeks to create a positive impact on ESG through creative communication, and share the value chain of corporate sustainability with partners.

Nanya is the world's 4th largest DRAM company. In the future, we will continue to fulfill our duty of communication and actively provide our knowledge and capabilities to society, including working with campuses and local communities, organizing industry-academia collaboration and local art placemaking activities, and calling on the public to take circular economy seriously. As for communication via the Internet, we have established a variety of interactive communication platforms, including official website, ESG website, dedicated mailbox, and official social media accounts, interacting with stakeholders through a wider range of communication methods via the Internet. This allows us to immediately respond to the questions and opinions of stakeholders, and improves the efficiency and quality of our communication. We are also working with the government, schools, and associations, and creating synergies in ESG issues through diverse channels, including forums, exhibitions, video planning, and Podcasts. Nanya shares innovative information on sustainability issues with partners in different sectors, building positive energy to jointly create a positive and sustainable society without any communication issues.

1

Business strategies and performance

1-1 About Nanya

1-2 Major Products and Operating Performance



1 -1 About Nanya

Focusing on DRAM

Nanya Technology holds innovation as our core value which is realized in the company's dedication to research and develop, design, manufacture, marketing, and sales of Dynamic Random Access Memory (DRAM). Nanya's commitment to research and development has enabled the company to accumulate extensive DRAM expertise and intellectual property. As a true leader in corporate citizenship, Nanya has proactively implemented green manufacturing technology. Nanya has harnessed the power of artificial intelligence (AI) to significantly upgrade production capacity and efficiency. The result is a company that provides industry leading DRAM solutions in a way that is environmentally friendly to our planet.

Being the Best DRAM Partner for Smart World

DRAM is a critical component of the smart world. Smartphones and servers used in data centers have been the primary drivers of DRAM development and demand. In the 5G and AI era, demand will continue to grow as the applications of DRAM use further diversify with the boom of various smart-connected devices.

Providing value added products and services to customers is imperative at Nanya. Nanya's focus on innovation resulted in the successful development of 10nm class DRAM process technologies which will enable the next three generations of DRAM solutions including DDR5 and LPDDR5 products. The first-generation 10nm class process technology's leading product (1Anm), an 8Gb DDR4 chip has begun small-volume production. Meanwhile, the second product DDR5 has begun pilot production. The development of the second-generation 10nm class process technology (1Bnm) and its leading product have begun pilot production and expected for small-volume production in year 2023. Combined, Nanya will provide customers with a complete product lineup to meet the rising needs in the 5G era and smart world.

Nanya's vision is to become the best DRAM Partner for Smart World. With accumulating R&D experience and cultivating excellent technology team, we successfully transformed into a self-development process technology IDM company.

Nanya's new fab groundbreaking ceremony was held in 2022. Nanya planned to invest approximately NT\$360 billion to upgrade the existing fab and build an advanced fab with a double-deck cleanroom. This new fab will allow Nanya to implement several generations of self-developed

10nm-class process technology and adopt AI technology to improve manufacturing performance. The investment plan will take three phases to reach approximately 45,000 wafer capacity per month, the DRAM bit growth will achieve 120% upon completion and create estimated NT\$70 billion annual production value. The construction is scheduled to be completed by 2025. The project will eventually create 3,000 new high-tech jobs while supporting thousands of additional indirect job opportunities, enhancing Nanya's international competitiveness as Taiwan's DRAM leader and push Nanya to the next level as a key memory provider for the globe.

Creating Positive Influence on ESG

Nanya has built a strong constitution with a sustainable spirit and is committed to enhancing corporate governance; complying with regulations; creating value for shareholders; maximizing employee benefits; actively participating in social welfare; promoting green technology and environmental sustainability; striving for sustainable development. In 2022, Nanya's consolidated revenue amounted to NT\$56.95 billion with a net income of NT\$14.62 billion, equivalent to earnings per share of NT\$4.72.

As one of the key members of the semiconductor industry, Nanya deeply understands the impact of environmental disasters and water shortages on company operations. In 2022, Nanya released its first TCFD Report and the company's emission reduction goals validated by the Science Based Targets initiative (SBTi), making the company the first DRAM company in the world to be validated. Through the integration of green management, Nanya has enhanced climate resiliency, reduced carbon emissions for renewable energy to reach at least 25% of electricity use in 2030, launched various energy saving projects and deployed a sophisticated water recovery and recycling process. This is just the beginning. Nanya will continue to contribute our innovation and strength to pursue the sustainability of the environment.

Furthermore, Nanya participates in the SEMI Taiwan Sustainable Manufacturing Committee and joins the Semiconductor Climate Consortium (SCC) as founding member, and engages with supply chains to promote sustainable partnership programs and move towards net zero. Together, making contribution to a more sustainable world.

Employees are the most valuable assets for our sustainable business. Nanya implements systematic and multidimensional talent cultivation programs; provides support for employee career development; establishes a wide range of incentives to attract and retain excellent talent. To fortify the development of long-term semiconductor expertise, Nanya enables industry-academia collaboration, high-tech talent cultivation, seminars and lectures, internships and other education programs.

Nanya's dedication in Environment, Social, and Governance (ESG) areas has resulted in awards and recognitions. In 2022, Nanya once again included in Dow Jones Sustainability (DJSI) World Index, and Dow Jones Emerging Market Index for the fourth time, ranked No.1 among the global memory industry. We were recognized as the highest honor with "A List" in the CDP Water Security category, "A-, Leadership Level" in the CDP Climate Change category, CDP Supplier Engagement Rating Leaderboard (A). We also honored with GCSA Outstanding Professional Award, TCSA Top 10 Taiwanese Companies Sustainability Model Award, National Enterprise Environmental Protection Award, FTSE4Good TIP Taiwan ESG Index, and Top 5% in the Corporate Governance Evaluation of Taiwan Stock Exchange Corporation, affirming the path to sustainable development.

Nanya will continue to put our three strategies



Company locations (including overseas branch offices)



● 12-inch Wafer Fabrication Plant

● Sales Office & FAE

● Design Center

Nanya Global Sales Regions: US, Europe, Japan, China, Taiwan, and Asia-Pacific Region.

Note: Nanya did not have any merger and acquisition plans or transactions in the past three years (2020-2022).

Participation in Associations and Non-profit Organizations

As a member of the global semiconductor industry, Nanya not only pursues the greatest achievement on its core business, but also actively participates in external exchange activities related to its core business and sustainable development in order to cooperate with other enterprises in the industry in moving towards common good. To this end, we have conformed to changes in the international situation and in the industrial chain, establishing a Public Affairs Participation Group under the **Sustainable Development Steering Center of Nanya**. The group is responsible for assessing and reviewing decisions on company's participation in public affairs. Moreover, we execute policy formulation of all participation in related industries and participation in industry unions or chambers of commerce in accordance with the "**Nanya Public Affairs Participation Guidelines**" to ensure the Company's rights and obligations.

Membership fees of associations and non-profit organizations

Unit: thousand NTD

	2022	2021	2020	2019
Taiwan Semiconductor Industry Association	320	320	320	320
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	-	-	-
Semiconductor Climate Consortium (SCC) (Joined in 2022)	469(US\$15,000)	-	-	-
Founding Member				

Under the Regulations Governing Nanya's Participation in Public Affairs, we are actively participating in evaluations and initiatives of sustainability institutions, showing our effort and ambition in sustainability issues. We are exerting our influence upstream and downstream in the supply chain, and jointly move forward on the path to sustainability together with supply chain partners, contributing to our planet as a global citizen.

Member of
Dow Jones
Sustainability Indices
Powered by the S&P Global CDP



Dow Jones Sustainability Index (DJSI)

S&P Global

- Invited to participate since 2018
- Selected into the Emerging Markets Index in 2018-2019 and selected into the World Index and Emerging Markets Index in 2021-2022

Carbon Disclosure Project (CDP)

CDP

- Began actively participating in the CDP Climate Change Questionnaire in 2018, and actively participated in the CDP Water Security Questionnaire in 2020
- Leadership level in climate change for 5 consecutive years
- Leadership level in water security for 3 consecutive years

Science Based Targets (SBT)

SBTi

- We support the SBTi and signed the commitment in 2021
- Passed the SBTi WB2D carbon reduction path and plan certification in 2022

TCFD Supporter

TCFD

We support the TCFD and began implementing climate change management based on the TCFD framework in 2018, becoming a supporter in 2021

SEMI Sustainable Manufacturing Committee

SEMI

- We participated in the SEMI Sustainable Manufacturing Committee in 2022, and Vice President Wu Chih-Hsiang serves as the chairman of the committee.
- Contents of participation in the Committee's initiative
 - Face sustainability challenges of the semiconductor industry
 - Learn sustainability measures from experienced members in industries related to the semiconductor industry
 - Implement collaboration projects in the semiconductor manufacturing process
 - Jointly promote energy conservation, carbon reduction, and sustainability activities with the supply chain

Semiconductor Climate Consortium Initiative

Semiconductor Climate Consortium (SCC)

- Participated in the SCC and became a founding member in 2022
- The SCC is committed to achieving the following goals:^{Note 1}
 - Collaboration – Align on common approaches, technology innovations and communications channels to continuously reduce greenhouse gas emissions
 - Transparency – Publicly report progress and Scope 1, 2 and 3 emissions annually
 - Ambition – Set near- and long-term decarbonization targets with the aim of reaching net zero emissions by 2050

Taiwan Alliance for Net Zero Emission

Taiwan Net Zero Emissions Association

- Participated and served as a director in the Taiwan Alliance for Net Zero Emission in 2021
- Contents of participation in the Association's initiative
 - Nanya strives to achieve net zero emissions
 - Lead the trend of net zero emissions in Taiwan through action by participating in the association, and assist the government in achieving Taiwan's goal of carbon neutrality

1-2 Major Products and Operating Performance

Product Information

Nanya is one of the key suppliers in DRAM industry, and its main products include standard DRAM, consumer DRAM, mobile DRAM, automotive / industrial-grade DRAM, and customized DRAM. Nanya insists on the core value of technological innovation as its main growth momentum and will invest even more R&D resources to accelerate the development of 10nm process technologies and new-generation DDR5 products to enhance its competitiveness.

- For our 20nm products, we will continue to optimize the application of low power products on the basis of existing consumer application customers and will increase the speed of products for use in high-end in-vehicle systems and high-end TV sets. With regard to 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.
- The main business strategy for 2023 is the promotion, mass production, and sales of the products using our first-generation 10nm-class process technology (1A). We have completed customer verification of the lead product, an 8Gb DDR4, and began small-volume production, which in turn reduced the production of 30nm products. We also prepare for the next generation of DDR5 products.
- Pilot run of the lead product using our second-generation 10nm-class process technology (1B) has already begun, and mass production is expected at the end of 2023. We are currently researching and developing new products and will subsequently begin pilot production.

DRAM Market Mainstream



Market Overview

The Russo-Ukrainian War continued to rage in the first quarter of 2023. Inflation in Europe and America has not shown signs of improvement. China's domestic demand has yet to recover despite COVID restrictions have been lifted, which was compounded by the US's expanding technology sanctions. DRAM customers were still digesting their inventory on hand, and DRAM market may remain sluggish in the first half of 2023.

DRAM is a key component in a wide range of electronic products, including servers, data centers, personal computers, smartphones, and a number of consumer electronics, and is critical for all electronics to become smart.

In 2023, overall demand growth for DRAM may be lower than the long-term average. However, DRAM is a key component of smart electronic products. As many smarter electronic products are introduced in the future, 5G, AI, smart cities, smart factories, smart automobiles, smart homes, smart wearable devices, and AR / VR / MR will drive the development of diverse DRAM applications, and market demand is expected to gradually improve each quarter in 2023. The long-term bit demand is expected to maintain 10-20% growth each year.

Trends in DRAM Applications

Servers

- Artificial intelligence, machine learning, and 5G continue to drive demands on cloud / edge computing, and server shipments are expected to grow steadily in the long-term. However, the overall economy has not shown clear signs of recovery in the short-term, and with impact of large enterprises and cloud service providers continuing a conservative strategy of cutting operating costs, server shipments are only expected to remain the same or grow slightly in 2023.
- DRAM demands rise from cloud hyperscalers' continuous investment in infrastructure of new data centers and the launch of new computer processors. Also, DRAM content per server will keep growing along with new server CPU using DDR5 in the first half of 2023 to fulfill high bandwidth, low latency and high performance required by 5G and AI.



Mobile Devices

- Global smartphone shipments declined drastically in 2021 due to the COVID-19 pandemic. 5G smartphone shipments continued to gain share in 2022 and pushed up the DRAM content to grow. However, the macro uncertainties such as inflation, geopolitics, and supply disruptions are the key factors to drag down the demand recovery.
- The mainstream of DRAM content per mobile phone will stay at the level of 6-8GB and Apple iPhone follows the demand trend to adopt 6GB in its flagship models.



Personal Computers

- Due to the pandemic ending and the impact of global inflation and sluggish economy, the demand on personal computers is expected to decline in 2023.



Consumer Electronics

- Disposable income of individuals decreased due to global inflation, and a portion of their spending has shifted to travel and food after the pandemic ended. Hence, sales of consumer electronics, such as game consoles, video streaming devices, network communication, video and surveillance systems, and smart speakers, are expected to remain the same or slightly decline in 2023. In-vehicle systems, smart watches, VR headsets, and smart glasses are expected to show steady growth due to 5G and metaverse.



Business Development Plan

Short-term Plan

- Optimize the 20nm product portfolio, continue to promote 4Gb / 8Gb LPDDR3 / DDR4 and 2Gb / 4Gb / 8Gb LPDDR4 / 4X products, and obtain a certain market share in the consumer applications, smartphones, smart wearable devices, smart speakers, low-power notebook computers, and SSD markets.
- Continue to cooperate with the first-tier data center providers to increase the proportion of shipments to the server market.
- Launch 20nm low-power automotive products, obtain customer verification and start shipping.



Long-term Plan

- Besides promoting current product lines, we will add product lines for proprietary DDR5 and 1A and provide high-density 16GB and more diverse product portfolios to meet customer demand in low, medium, and high-density markets.
- In order to enhance our long-term competitiveness, we plan to complete pilot run of the products using 1B and pilot run of a functional testing chip using our third-generation process technology (1C) in 2023. In addition, we will begin mass production of the products using 1B and pilot run of the products using 1C in our current fab starting in 2024. 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 Markets

Nanya's main markets include China (44.5%) and Taiwan (36.1%). Please see page 44 of the Company's [2022 consolidated financial report](#) for details on sales breakdown by market.

2022

Standard products	1,216,594 (thousand pieces)
Low power products	53,107 (thousand pieces)
Total production	1,269,701 (thousand pieces)
Local content rate (%)	100%

► Operating Performance

Nanya's consolidated revenue was NT\$56.95 billion in 2022, a decrease of approximately 33.5% compared to NT\$85.6 billion in 2021. Net profit was NT\$14.62 billion with a net margin of 25.7%, a decrease of 36% compared to NT\$22.85 billion in the previous year. Earnings per share was NT\$4.72.

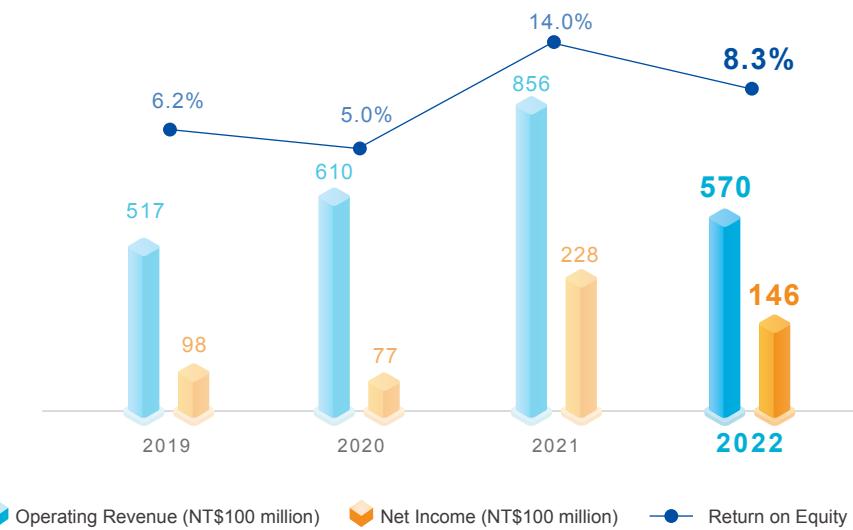
In 2022, a number of global uncertainties have impacted the world economics, including geopolitical conflict between Russia and Ukraine, energy crisis, and inflation. Many countries have adopted interest rate hikes and monetary tightening policies to fight inflation. Additionally, China's zero-COVID policy and the US-China trade war impacted the industry's overall supply chain and China's domestic demand, leading to a decline in consumer confidence and lower capital expenditures in various industries. Since the second quarter, DRAM demand for consumer electronics, such as mobile phones, notebook computers, tablet PCs, and TVs, has been poor. There has been an imbalance between DRAM supply and demand, causing both prices and shipments to decline quarterly. In 2022, overall yearly shipments and average selling prices declined from 2021, leading to a decrease in yearly revenue and profits.

Nanya continues to focus on diversified product applications, devotes to the product technology development, implements corporate sustainability, and strives to maintain a stable dividend policy. The cash dividend for 2022 was approximately NT\$2.1 per share, and the Company has distributed cash dividends for nine consecutive years.

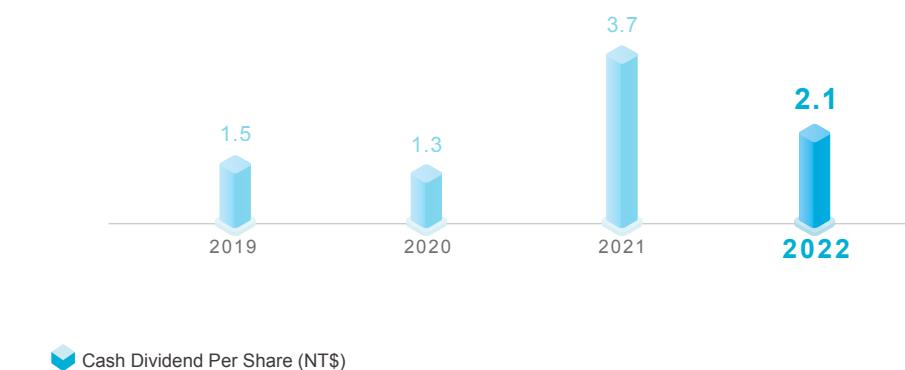
Financial Performance During the Last Four Years

	2022	2021	2020	2019
Market Capitalization (NT\$100 million) ^{Note 1}	1,586.2	2,418.7	2,685.2	2,563.2
Operating Revenue (NT\$100 million)	569.5	856.0	610.1	517.3
Operating Income (NT\$100 million)	110.0	271.9	84.3	95.2
Net Income (NT\$100 million)	146.2	228.5	76.9	98.2
Return on Equity (%)	8.3	14.0	5.0	6.2
Total Cash Dividend (NT\$100 million) ^{Note 2}	66.0	114.7	40.0	46.0
Cash Dividend Per Share (NT\$) ^{Note 2}	2.1	3.7	1.3	1.5
Employee Welfare Expenses (NT\$100 million)	67.7	73.0	58.6	57.6

Financial Performance



Cash Dividend



Note: 1.Calculation based on the stock price at the end of each year

2.Dividends are disclosed based on the year to which they belong and are 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.

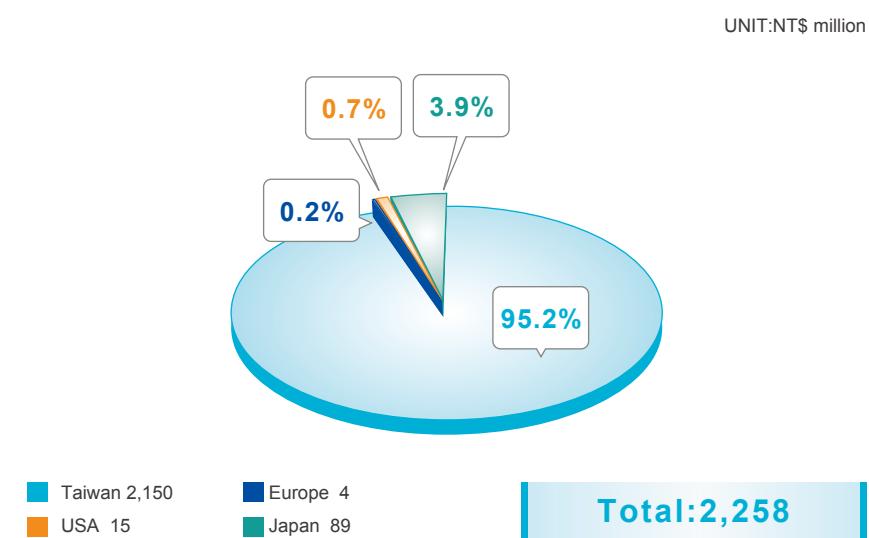
Nanya Tax Policy

-  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 Four Years

	2022	2021	2020	2019
Net income before tax (NT\$ million)	16,877	27,767	8,991	11,225
Income tax expense (NT\$ million)	2,258	4,918	1,305	1,401
Effective tax rate (%)	13.38	17.71	14.51	12.48
Payment of income tax (NT\$ million)	3,583	1,223	1,484	2,019
Cash tax rate (%)	21.23	4.40	16.51	17.99

2022 income tax expense by country



2

Corporate Sustainability

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2-1 Sustainable Governance and Organization

Since Nanya established its Sustainable Development Committee as an internal management organization in 2018, we have been pushing forward activities related to sustainable development step by step, becoming a solid partner in improving the challenges faced by the world. The Company values sustainable development and formally restructured the Sustainable Development Committee into a functional committee under the Board of Directors in August 2022. Governance functions of the Risk Management Committee were merged into the Sustainable Development Committee, and the internal management organization that was originally the Sustainable Development Committee was subsequently changed to the Sustainable Development Steering Center.

The Sustainable Development Committee is formed by the chairman, 4 independent directors, and 2 executive directors. Members of the committee selected the president as the convener. The committee reviews the Company's sustainable development strategies, vision, goals, implementation guidelines, and results twice a year. The Sustainable Development Committee charged the Sustainable Development Steering Center (Director: Vice President) and Risk Management Steering Center (Director: Executive Vice President) to implement sustainability and risk management work, and a dedicated organization, the Sustainability and Risk Management Division, was established under the President's Office to serve as the Secretariat, 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. Please refer to the chapter on "[Integrity and Transparency](#)" for the duties of Nanya's Sustainable Development Committee and operations in 2022.

In 2022, Nanya established the Sustainable Development Committee under the Board of Directors, and included the Risk Management Committee that was established by the Board of Directors in 2020. The committee continues to work on three main aspects, i.e., sustainable development work planning, risk management assessment, and legal and regulatory response. In the meantime, the committee reported projects to the Board of Directors for discussions to strengthen internal reforms and move towards the vision of sustainable development.

The Board of Directors charged the Sustainable Development Steering Center with the responsibility of managing internal sustainability affairs. In regard to risk management, a material sustainability topic, the Board of Directors deeply realized that risk events, including the international political and economic situation, climate change, regulations, and diseases, were volatile, so it charged the Risk Management Steering Center with the responsibility of identifying, reviewing, and managing risks in complex situations. As such, controllable risks are included in daily operations, and uncontrollable risks are monitored for preparation and response, thereby minimizing Nanya's overall operational risks.



Work items of the Sustainable Development Committee in 2022

Sustainable development work planning(Sustainable Development Steering Center)

- Improved wastewater recycling rate
- Evaluated the purchase of offshore wind power in 2025-2030, and purchased green energy in accordance with the Use and Purchase of Green Energy Plan for 2020-2025 formulated in 2019
- Deepened ISO 50001 Energy Management System, and promoted energy action management improvement projects
- Continue to implement the GHG inventory plan and implement 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, and conduct key supplier audits every 3 years and provide guidance
- Truly executed customer satisfaction evaluation through a third party
- Continue to improve corporate governance
- Continue to participate in domestic and international sustainability evaluations, such as DJSI, CDP, and Taiwan Corporate Sustainability Awards
- Continue to participate in sustainability evaluations organized by the government, such as the National Enterprises Environmental Protection Award



Formulate risk management assessment and response measures(Risk Management Steering Center)

- | | |
|---|---|
| <ul style="list-style-type: none"> • Sales and marketing risks • Risks of wafer manufacturing and back-end packaging and testing • Operation supporting risks • Human resources risks • Privacy management risks | <ul style="list-style-type: none"> • Information Security Risk • Quality risks • Environmental health and safety risks • Corporate strategy and finance risks • Emerging Risks |
|---|---|



Compliance review and response(Compliance platform)



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

The Sustainability and Risk Management Division, which is a dedicated unit under the President's Office of Nanya, serves as the secretariat and reports the sustainability-related work carried out by the Sustainable Development Steering Center to the Sustainable Development Committee and Board of Directors at the start of each year. This allows the Board of Directors to fully understand the Company's progress in sustainability work, goals for material issues in the new year, implementation status of goals in the previous year, highlights, and stakeholder engagement. Key points of the report are shown in the table below.

Highlights of Sustainable Development Work in 2022

- Selected as a constituent stock of the DJSI World Index and Emerging Markets Index; Top 5% S&P Global ESG Score
- Ranked in CDP's A List for Water Security and Leadership Level for Climate Change
- GCSA Outstanding Professional Award
- TCSA Top Ten Sustainable Companies Award and 6 individual leadership awards

Sustainable development organization and sustainability strategies

Risk management organization, risk identification, and preventive measures

An overview of sustainable performance, recognition, and awards in 2022

Results of 2022 and goals for 2023

Promoted participation in the DJSI evaluation, Taiwan Corporate Sustainability Awards, Common Wealth Magazine Sustainable Citizen Award, and National Enterprises Environmental Protection Award

Internalized the DJSI evaluation, and reinforced corporate operations

2-2 Materiality Analysis

Materiality analysis is a key preparation for writing the sustainability report each year. Nanya established a systematic analysis method, listens to stakeholders' concerns about ESG issues, considers the attributes of its operations, and identifies material ESG issues, which lay the foundation for compiling sustainability reports and implementing ESG projects.

► Materiality Analysis Process

Nanya Technology Corporation conducts materiality analysis every year, and follows GRI 3: Material Topics 2021, including the impacts on the economy, environment, people, and human rights. 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 Technology Corporation's operations, and topics of high concern to stakeholders, which are defined as material sustainability topics, and formulated corresponding long-term sustainability goals.



1

Identification and selection

The main purpose of this stage is to identify Nanya's main stakeholders and select ESG topics. With regard to identification of major stakeholders, we followed the GRI Standards and the AA 1000 Stakeholder Engagement Standard (SES), and identified seven major categories of stakeholders, including: employees, shareholders, customers, suppliers, government, society, and media. We considered ESG topics from both external and internal perspectives, and identified operations-related issues of Nanya, including international sustainability regulations and standards, industry-specific issues, sustainability ratings, communication with stakeholders, and internal business goals, summarizing 21 ESG topics of Nanya. Compared with the previous year, we added the topic "Biodiversity."



2

Deciding priority

Nanya Technology Corporation periodically surveys stakeholders' level of concern. To gather representative samples, we conducted a survey among the seven categories of stakeholders through online questionnaires on their level of concern. Under the concept of double materiality, Nanya Technology Corporation assesses the impact of each topic on operations, specifically the impact on revenue, customer satisfaction, employee engagement, brand image, and cost. For the impact on sustainable development, we used impact valuation to define positive and negative impacts on Nanya Technology Corporation to determine the materiality of a sustainability issues. Please refer to the chapter on sustainability impact for detailed methods.



3

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, 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.



1

Identification and selection

Identification of 7 major categories of stakeholders

We adopted the AA 1000 Stakeholder Engagement Standard (SES), and held the CSR consultation meetings to identify seven major categories of stakeholders, including: employees, shareholders, 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 corporate social responsibility.

Selection of 21 ESG topics

To display the complete sustainability context, we gathered 21 ESG topics through various channels, including: communication processes of stakeholders, international guidelines/regulations/trends (GRI Standards, SBSC, SDGs), industry-specific topics (RBA, SASB), sustainable investment evaluations (DJSI, CDP, MSCI Sustainability Indexes, FTSE4GOOD Emerging Index), and internal goals of organizations.



2

Deciding priority

Distribution of 3,379 questionnaires to investigate level 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. At last, we collected a total of 3,379 valid questionnaires, analyzing the topics concerning each category of stakeholders.



3

Confirmation and review

Confirmation of 15 material topics

Based on the analysis results in the Stage 2, we understood the distribution of sustainability topics in the materiality matrix. Our management team discussed these topics and finally decided 15 material topics, completing the Nanya materiality matrix of 2022. The following procedure was to further decide the boundary of information disclosure and the planning of management policies.

Confirmation of 19 material themes

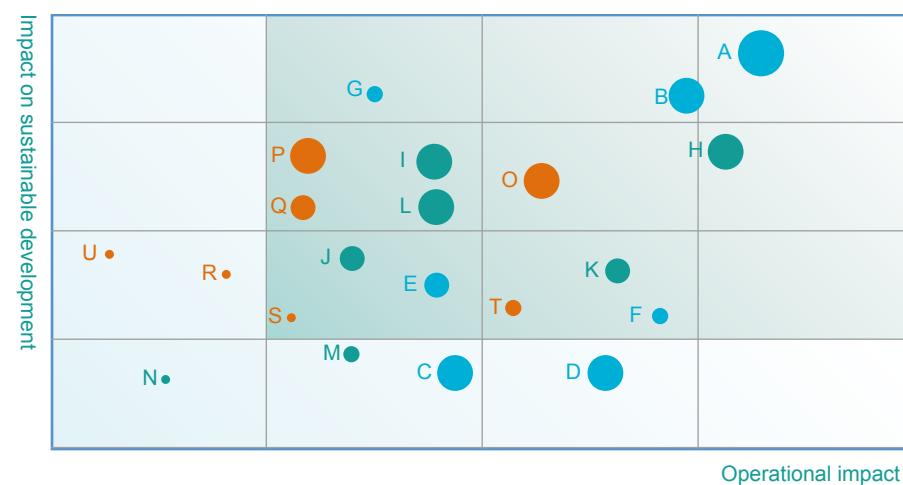
According to the 15 material topics, our employees internally decided the stages that each topic might have significant impact on within the Nanya's value chain. These 15 material topics corresponded to the 17 topics in the GRI Standards and two specific topics belonging to Nanya, making a total of 19 main themes to be the basis for report compilation.

Nanya's material topic matrix

Stakeholders' degree of concern		Impact on operations			Impact on sustainable development				
Extremely High	High	Employee Development							
Concerned / Impact	Business Integrity	Information Security	Employee Development	Business Integrity					
	R&D and Innovation	Economic Performance		R&D and Innovation					
	Talent Retention and Employee Care	Occupational Health and Safety		Customer Service					
	Green Products	Energy Management	Employee Development	Information Security	Energy Management	Business Integrity			
	Climate Change	Sustainable Supplier Management		Economic Performance	Talent Retention and Employee Care	R&D and Innovation			
	Waste Management	Customer Service		Green Factory	Community Involvement	Risk Management			
	Risk Management	Talent Recruitment	Employee Development	Risk Management	Human Rights	Green Products	Business Integrity		
	Water Management	Human Rights		Water Management	Employee Development	R&D and Innovation			
	Green Factory	Community Involvement		Climate Change	Talent Recruitment	Risk Management			

Economic aspect Environmental aspect Social aspect

Nanya's material topic matrix



- | | | |
|------------------------------------|-----------------------------|--------------------------|
| A. Business Integrity | H. Green Products | O. Talent Retention and |
| B. R&D and Innovation | I. Climate Change | P. Employee Care |
| C. Information Security | J. Waste and recycling | Occupational Health and |
| D. Economic Performance | K. Energy Management | Q. Safety |
| E. Sustainable Supplier Management | L. Water Management | Employee Development |
| F. Customer Service | M. Green Factory | R. Talent Recruitment |
| G. Risk Management | N. Green Product Management | S. Human Rights |
| | | T. Community Involvement |
| | | U. Employee Diversity |

■ Economic aspect ■ Environmental aspect ■ Social aspect

Stakeholders' Degree of Concern :

- Not concerned ● Slightly concerned ● Regular
- Concerned ● Highly concerned

Nanya Technology Corporation Double Materiality

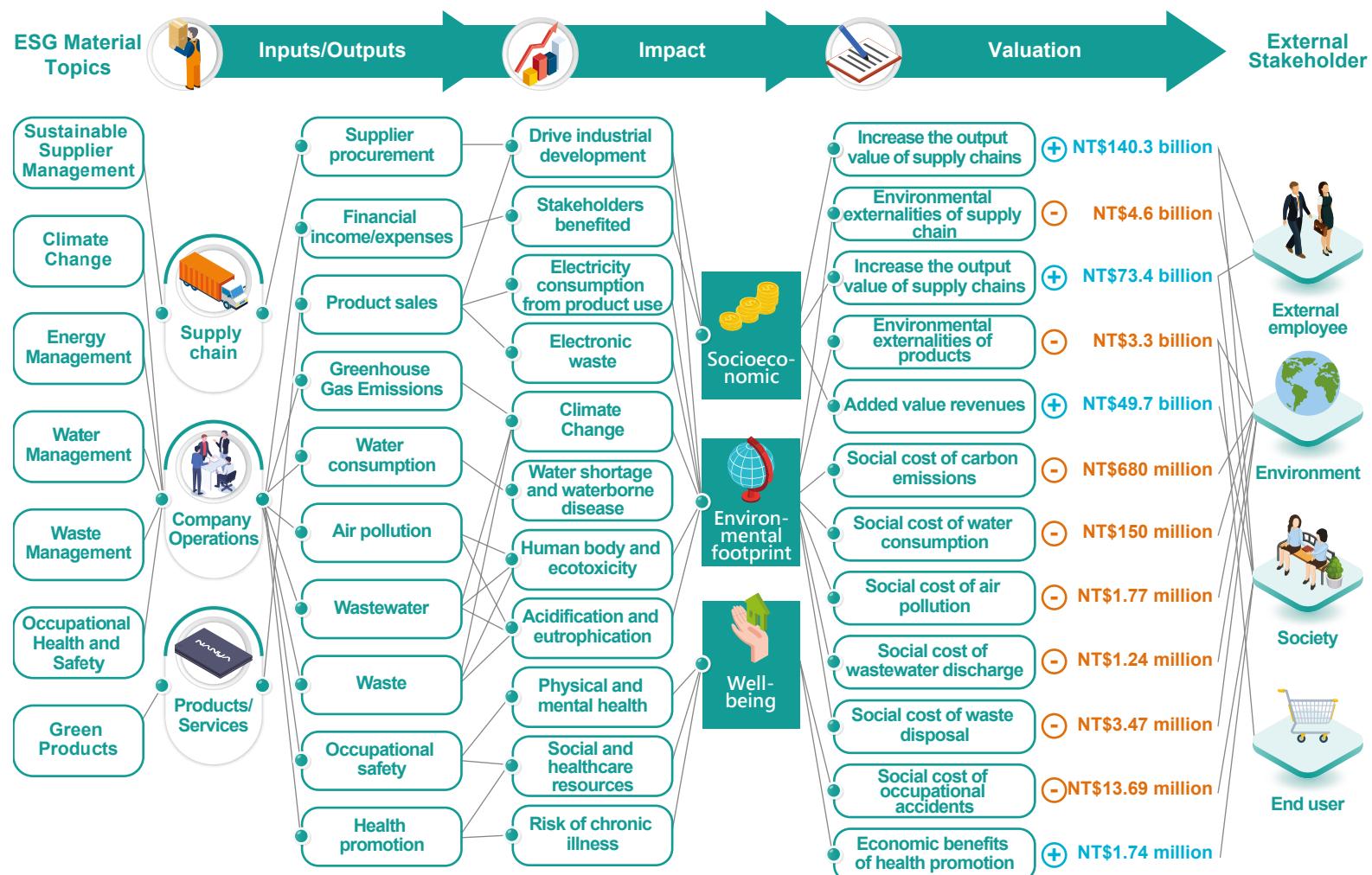
● : Material Topics Impact

Aspects	Material Topics	Impact on operations					Impact on sustainable development				
		Revenue growth	Customer satisfaction	Costs	Employee engagement	Reputation and image	Industry technology development	Create upstream output value	Product environmental benefits	Resource consumption and pollution	Health and safety hazards
Economic aspect	Business Integrity	●	●	●	●	●					
	R&D and Innovation	●	●	●	●	●	●				
	Customer Service	●	●				●				
	Sustainable Supplier Management						●	●	●	●	●
	Risk Management	●									
Environmental aspect	Climate Change					●			●	●	
	Green Products								●	●	
	Energy Management			●		●					●
	Water Management	●	●							●	
Social aspect	Waste Management									●	
	Employee Development				●	●					
	Occupational Health and Safety										●
	Talent Retention and Employee Care	●	●	●							
	Community Involvement					●					
	Human Rights										●

Material Topics and Risk Assessment

Aspects	Material Topics	Risk factor	Severity Frequency	Mitigation measures
Economic aspect	Sustainable Supplier Management	Information security threat	High	<ul style="list-style-type: none"> Conduct on-site audits for key high-risk suppliers Design a self-evaluation form for suppliers to evaluate the current status of their information security
Environmental aspect	Energy Management	Abnormal power supply	High	<ul style="list-style-type: none"> The plant has set up emergency power generators and Dynamic Uninterruptible Power Supply (DUPS), and adopts a double-circuit design for power supply Set electricity-saving plans and reduce overall electricity consumption Schedule regular drills according to a recent abnormal power supply to prepare for rapid response in case of abnormal situations
Social aspect	Occupational Health and Safety	Infectious diseases, earthquake, fire	High	<ul style="list-style-type: none"> The Epidemic Response Team held meetings weekly. The Team also encourages employees to be vaccinated. Enhance equipment anti-seismic performance Regular fire drills to increase resilience and choose fire-resistant and flame-retardant materials.
	Talent Retention and Employee Care	Employee resigned and poaching	High	<ul style="list-style-type: none"> Set project bonuses, employee remuneration and annual salary adjustments to improve salary competitiveness. Formulated the talent development plan and strengthen teamwork to cultivate key talents. Optimize employee welfare, set up counselors, staff dormitory, transportsations, and subsidize electric motorcycles

Material Topics and External Impact



Material topics, GRI topics, and impact boundaries

Material topics	Corresponding section	Risk and management approach for the topic	Corresponding GRI topic	Value chain				
				Product Design	Procurement	Manufacturing	Testing	Customers
Business Integrity	Integrity and Transparency	We will build a sound 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)	▲	●	●		
R&D and Innovation	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*	●				
Customer Service	Innovation	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)			▲		
Sustainable Supplier Management	Innovation	We will 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)	▲				
Risk Management	Integrity and Transparency	We will establish and maintain effective risk management mechanisms 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*	●	●			
Climate Change	Green	We will include 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 Products	Green	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)	●	▲	●	●	▲
Energy Management	Green	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)	●	●			
Water Management	Green	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)	●	●			
Waste Management	Green	We will recycle waste to improve the effective use of resources and reduce other problems deriving from pollution. Moreover, we will provide waste to other industries for reuse, achieving the advantages of environmental impact reductions and circular economy development.	Waste (306)	●	●			
Employee Development	Talent	As a human-oriented company, we establish an advantageous training and development system, reinforcing our employees' core technological capabilities to achieve the Company's annual strategic goals, and cultivate outstanding high-tech semiconductor talent.	Training and Education (404)	●	●			
Occupational Health and Safety	Talent	Employees are our important assets. Through continuous improvements in providing employees with a safe and healthy working environment, we aim to enhance the awareness of safety culture, strengthen self-inspection, and reduce employee occupational accidents.	Occupational Health and Safety (403)	●	●			
Talent Retention and Employee Care	Talent	Employees are our important assets. We will continue to recruit high potential talent, and provide a friendly workplace, so our employees may continue to contribute to the Company while growing within the organization. Thus, we will maintain our competitive advantages.	Market Presence (202) and Employment (401)	●	●			
Social Engagement	Common Good	Based on our core competencies and values, we gather internal resources, invest in diverse aspects, and cooperate with upstream and downstream partners to convey the power of beauty and benevolence, and help create a better society.	Local Communities (413)	○	○			
Human Rights	Talent	Value basic human rights, implement a human rights culture and training, establish principles of risk mitigation and compensation, and create a working environment that protects human rights.	Non-discrimination (406), Forced or Compulsory Labor (409)	▲	●	●		

*Specific topics of Nanya

Economic aspect Environmental aspect Social aspect

Degree of involvement: ● Direct relation ○ Indirect relation ▲ commercial relation

2-3 Communication with Stakeholders

Stakeholder/
Significance to Nanya

Employees



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.

Reference section : Talent (Ch4)

Shareholders



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.

Reference section : Integrity and Transparency (Ch8)

Customers



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.

Reference section : Integrity and Transparency (Ch8)

Communication method

- **Internal announcements**
- **Meetings:** Convene regular meetings, such as all-hands meetings (every half year)/executive meetings (quarterly)/production line operator meetings (quarterly)/various training and education courses
- **Two-way communication platforms:** Life Space, Nanya newsletter, and feedback
- **Electronic questionnaires:** Course satisfaction, activity satisfaction, and Employee Engagement Survey
- **Communication meetings with union representatives:** Discussions on labor and management issues

Communication frequency

- Immediate
- All-hands meetings are held twice a year; executive meetings and production line operator meetings are held quarterly.
- Other meetings are held whenever necessary.
- Two-way communication platforms: Electronic newsletters are sent quarterly, and feedback is replied within five days.
- Communication meetings with union representatives are to be held, if needed.

Topic of concern

- Talent Retention and Employee Care
- Employee Development
- Economic Performance

2022 outcome of communication

- Meetings were held online due to the pandemic in the first half of 2022, and were held in person with video conferencing at the same time in the second half. Held a total of 2 times
- Four executive meetings were held. Two meetings were split online due to the pandemic
- Four production line operator meetings were held in person
- A total of 4 Nanya newsletters were sent
- One in-person communication meeting with union representatives was held, and a diversity of channels were used for communication

Regular shareholders

- A shareholders' meeting is held annually
- The annual report is disclosed according to regulations each year
- Shareholders are able to contact the Company via phone or e-mail

Institutional shareholders

- Institutional investor conferences and global conference calls are held quarterly.
- Participation in domestic and overseas seminars held by investment institutions
- Participation in investor forums held by brokers irregularly
- Institutional investor visits on site or via phone

- Market Observation Post System - Updated from time to time
- Shareholders' meeting - at least once a year

- Economic Performance
- Green Products
- Business Integrity

- Updated information on the Market Observation Post System (MOPS): Over 300 items
- Held 1 annual general meeting
- Held four online institutional investor conferences
- Participated in 25 forums and seminars
- A total of 60 irregular institutional investor visits on site or via phone

- Institutional investor conferences – Held once every quarter
- Participation in forums or seminars twice every quarter
- Irregular institutional investor visits via phone or on site

- Immediate
- Once in one or two months per customer
- Once in one or three months per customer
- Once a year
- Immediate

- Sustainable Supplier Management
- Human Rights
- R&D and Innovation

- Completed 950 cases of customer platform parameter measurement service and 31 joint product verification services for customers
- Completed 115 sessions of customer technical exchanges and courses
- Completed customer satisfaction survey with 100% coverage of customers, and the score of satisfaction reached 94.8 points

Stakeholder/
Significance to Nanya**Suppliers**

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.

Reference section : Responsible Procurement (Ch6)

Government

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.

Reference section : Green (Ch5) · Integrity and Transparency (Ch8)

Society

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.

Reference section : Green (Ch5) · Common Good (Ch7)

Media

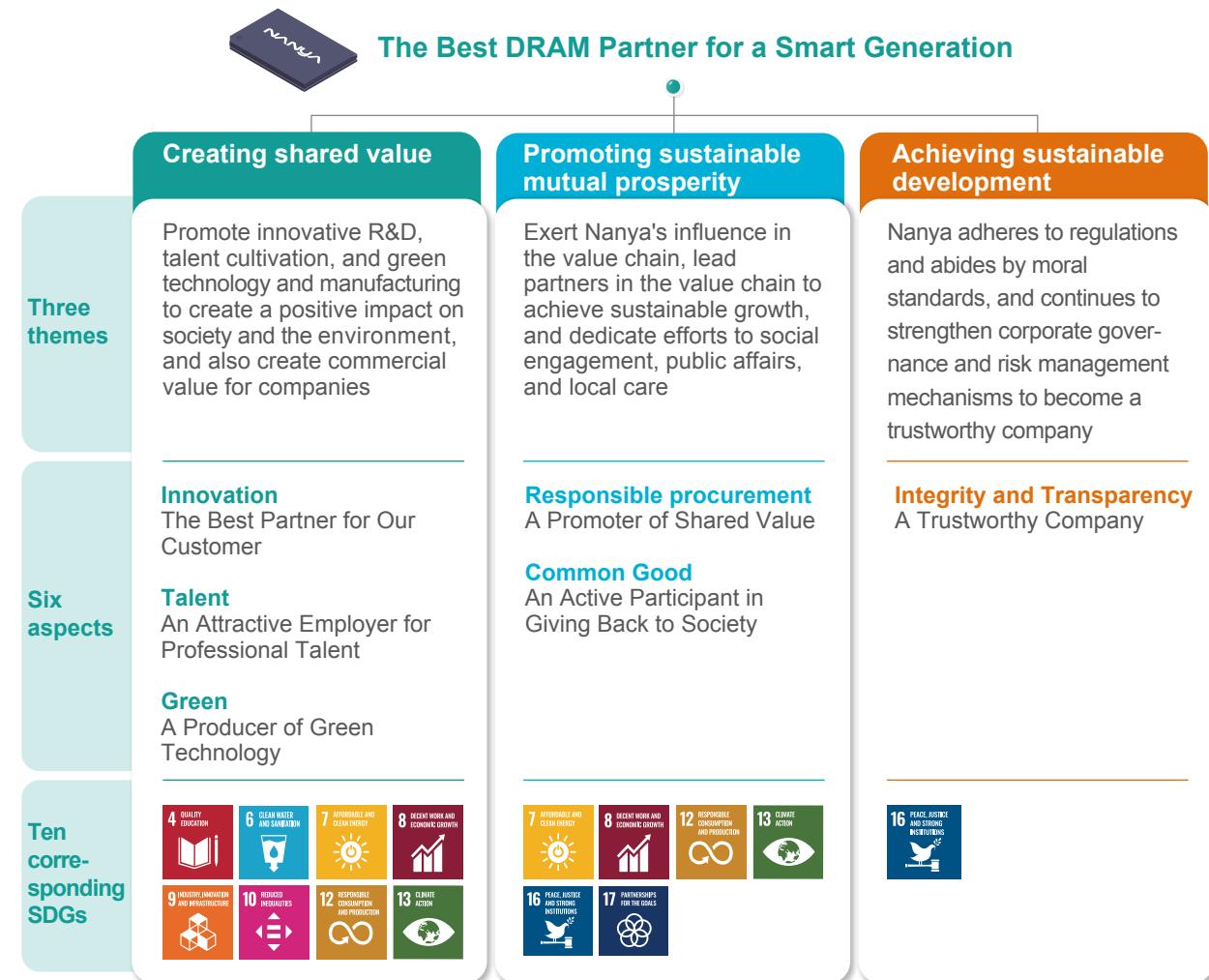
The media is an important channel for the Nanya's external communication, so we have a spokesperson and an agent system. Moreover, we have set up a dedicated unit for public relations. Multiple communication channels and consistency in conveying the corporate messages to the media allow the media professionals who care about the Company to understand the latest information.

Reference section : Common Good (Ch7) · Integrity and Transparency (Ch8)

Communication method	Communication frequency	Topic of concern	2022 outcome of communication
<ul style="list-style-type: none"> ► Real-time supplier information platform ► Regular face-to-face review reports or meetings ► Supplier surveys, audits, and consultation are held in January, April, July, and October each year. ► Annual evaluation of suppliers' stability of delivery and product quality 	<ul style="list-style-type: none"> ► In addition to the regular audits in January, April, July, and October each year, irregular communication is conducted when necessary. 	<ul style="list-style-type: none"> ► Green Factory ► Occupational Health and Safety ► R&D and Innovation 	<ul style="list-style-type: none"> ► In regards to delivery and stock management, regular and irregular review meetings were held every month - 80 key material suppliers. 202 non-critical material suppliers ► Collected 282 SAQ questionnaires with 100% response rate ► Audited 20 suppliers with high risk, and the improvement rate reached 100%
<ul style="list-style-type: none"> ► Documents ► Legal and regulatory briefings ► Financial reports ► Submit related reports or responses as required by the competent authorities and regulations ► Communicate with the competent authorities through the industrial park, computer associations, etc. 	<ul style="list-style-type: none"> ► Submit reports to the competent authorities as required, basically around once per month 	<ul style="list-style-type: none"> ► Climate Change ► Business Integrity ► Employee Development 	<ul style="list-style-type: none"> ► Periodically submitted related reports or responses in accordance with regulations of the government ► Actively responded to the policies proposed by the government and made recommendations through associations.
<ul style="list-style-type: none"> ► Talent cultivation: Conform with the education system and cultivate outstanding semiconductor talent. ► Environmental Conservation: Connect different types of NPOs and promote environmental protection ideals. For example, promoting the Earth Hour Event, doing one thing for the Tamsui River, and cleaning the beach ► Humanistic care: Improve social welfare by working with local art and charity groups. ► Good neighbor: Participate in public affairs in the neighborhood communities and build a harmonious and mutually beneficial living sphere. 	<ul style="list-style-type: none"> ► On average, monthly participation in various community involvement and activities ► Communicate and assist when necessary 	<ul style="list-style-type: none"> ► Business Integrity ► Occupational Health and Safety ► Talent Retention and Employee Care 	<ul style="list-style-type: none"> ► Held 36 campus activities and seminars with industry experts with a total of 2,937 participants ► Donated to 7 social welfare foundations ► Supported 1 potential athlete ► Interacted with 10,307 participants of neighborhoods (including mountain environment cleaning activities, community art activities, etc.)
<ul style="list-style-type: none"> ► Press releases ► Quarterly press conferences ► Nanya's official website ► Interviews with the spokesperson 	<ul style="list-style-type: none"> ► About once per month 	<ul style="list-style-type: none"> ► Business Integrity ► Economic Performance ► Climate Change 	<ul style="list-style-type: none"> ► 31 press releases ► Held 5 press conferences ► Updated the official website from time to time

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 Generation.” 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.





Creating shared value

Management Indicator	2022 Goals	2022 Implementation performance	2023 Goals	2025 Goals	Management mechanism	Management Indicator	2022 Goals	2022 Implementation performance	2023 Goals	2025 Goals	Management mechanism
Innovation											
R&D and Innovation											
10nm DRAM technology R&D progress	Complete the verification of 10nm DRAM technology for product shipment	First generation 10nm DRAM process and 8Gb DDR4 products reached standards for shipment	Second generation 10nm DRAM process and 8Gb DDR4 products completed product specifications and yield certification	(1)Second generation 10nm DRAM process and 8Gb DDR4 products reach standards for shipment (2)Complete design of second generation 10nm 16Gb DDR5 products and produce wafers on a trial basis	Third generation 10nm DRAM process and 16Gb DDR5 products reached standards for shipment	R&D and Innovation	Percentage of employees that are key talents	≤ 4%	5.5%	≥ 5.7%	≥ 6%
Cumulative number of intelligent systems developed	90 items	90 items	110 items	Established high-performance production lines with AI-assistance and developed 150 AI application development	Nanya Smart Factory	Internal employee substitution rate for job openings	≥ 62%	85.9%	≥ 65%	≥ 65%	Attracting and Retaining Talent
Accumulated number of 400 engineering personnel trained with AI theories and practical technological capabilities	400 people	400 people	450 people			Annual planned course	≥ 100%	178.5%	≥ 100%	≥ 100%	Talent Cultivation
Green Products											
Percentage of products that conform to hazardous substance free regulations and customers' specifications	100%	100%	100%	100%	Green Product Development	Percentage of employees that received training on human rights policies and procedures	100%	100%	100%	100%	Employee Human Rights Protection
Percentage of products that completed the product life cycle inventory	100%	100%	100%	100%		Results of external audits or labor inspections	No major deficiencies	No major deficiencies	No major deficiencies	No major deficiencies	
Percentage of raw materials that do not contain PFOA related substances	100%	100%	100%	100 %		Unlawful workplace harassment cases	0 cases	0 cases	0 cases	0 cases	
Ratio of 20nm and other advanced processes	≥ 88%	88.5%	≥ 96%	≥ 96%		Frequency of disabling injuries	<0.2	0	<0.19	<0.17	Occupational Health and Safety
Goal achieved Goal not achieved											

Note 1: External pull on talent with a background in engineering has increased due to the rapidly growing market demand, and it has affected employee turnover. We have already included the situation in our risk management and assessed the overall competitiveness of our salaries.



Creating shared value

Management Indicator	2022 Goals	2022 Implementation performance	2023 Goals	2025 Goals	Management mechanism	Management Indicator	2022 Goals	2022 Implementation performance	2023 Goals	2025 Goals	Management mechanism
Green											
Climate Change											
GHG emissions per unit production capacity (lower compared to 2017)	38%	33% ^{Note2}	31%	Cumulative greenhouse gas reduction: GHG emissions in 2030 are 25% lower compared with the baseline year 2020; achieve net zero emission in 2050 (already obtained SBT certification)	Climate Change Management	Green	Accumulated water consumption per unit production capacity since 2018 (lower compared to 2017)	38.5%	38.5%	>38.5%	39%
Reduction rate of PFCs emissions from processes	≥ 93%	93%	≥ 93 %	≥ 93 %		Water Management	Annual average process waste water recycling rate	≥ 90%	92.9%	≥ 93%	≥ 93%
PFCs emissions per unit production capacity (lower compared to 2015)	30%	29.6% ^{Note3}	30%	23%		Waste Management	Number of wafers lost in production caused by restricted water supply	0	0	0	0
Number of days production was suspended due to climate change disasters	Maintained at 0 days	0 days	Maintained at 0 days	Maintained at 0 days		Waste Management	Rate of auditing and coaching waste disposal contractors on-site	>90%	98%	>98%	>98%
Energy Management											
Total energy saved from energy conservation measures (since 2017)	≥ 64,000 MWh	63,228 MWh ^{Note4}	≥ 67,500 MWh	≥ 75,000 MWh	Energy Management	Energy Management	Non-compliance with environmental laws and regulations cases	0 cases	0 cases	0 cases	0 cases
Renewable energy use in the entire year	≥ 7,880 MWh	7,880 MWh	≥ 25,000 MWh	≥ 25,000MWh (The goal is for renewable energy use to reach 25% of total electricity consumption in 2030)		Energy Management	VOC emissions per unit production capacity (lower compared to 2017)	46%	38.8% ^{Note5}	40%	46%

Achieved Partially achieved

Note 2: Due to trial production of the 1A/1B process and adding 89 new machines, electricity consumption in 2022 increased 2.2% compared to 2021, and an increase in the electricity carbon emission factor of Taiwan Power Company by 1.4% caused an increase in GHG by 2.6%.

Note 3: The increase in PFCs was mainly due to trial production of 1A/1B processes and the newly purchased machines; 5 TF/NF3 machines were added and usage increased 5.7%; die output decreased 3% compared with 2021.

Note 4: Two energy conservation management plans were implemented in 2022 and reduce energy consumption by an estimated 2,960MWh/year. Completion of the project was delayed to 2023 due to production capacity allocation.

Note 5: Process VOC emissions increased 19% compared with 2021, and die output decreased 3% compared with 2021.



Promoting sustainable mutual prosperity

Management Indicator	2022 Goals	2022 Implementation performance	2023 Goals	2025 Goals	Management mechanism
Responsible procurement					



Sustainable Supplier Management

Percentage of non-conflict minerals used in wafer product lines	100%	100%	100%	100%	Responsible procurement
Percentage of Significant suppliers that completed the self-evaluation questionnaire	100%	100%	100%	100%	
Completion rate rate of deficiency improvements by suppliers with high sustainability risk in audits	100%	100%	100%	100%	
Percentage of suppliers that signed the Supplier Code of Conduct	100%	100%	100%	100%	
Completion of audits and guidance for Key Suppliers (once every 3 years)(New)	100%	100%	100%	100%	
Supplier sustainability counseling cases (New)	Conducted 2 or more	2 cases	Conducted 2 or more	Conducted 2 or more	

Common Good



Social Engagement

Annual growth of resources invested in community involvement (person-hours)	10%	14.9%	10%	≥ 10%	Society Participation
Number of volunteers in the service team	≥ 100 people	87 people ^{Note 6}	≥ 100 people	As a percentage of total employees ≥ 5%	
Accumulative semiconductor talent cultivated (since 2021)	≥ 450 people	532 people	≥ 750 people	≥ 1,500 people	Talent Cultivation

Achieved Partially achieved



Achieving Sustainable Development

Management Indicator	2022 Goals	2022 Implementation performance	2023 Goals	2025 Goals	Management mechanism
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Integrity and Transparency



Business Integrity

Material violations of regulations	0 cases	0 cases	0 cases	0 cases	Business Integrity
Corruption cases	0 cases	0 cases	0 cases	0 cases	
Employees' labor ethical training completion rate	100%	100%	100%	100%	
Employees' antitrust training completion rate	100%	100%	100%	100%	
Antitrust cases	0 cases	0 cases	0 cases	0 cases	
Violation of trade secrets	0 case	0 cases	0 cases	0 cases	



Risk Management

Number of regular quarterly meetings and annual reports to the Board of Directors	46 items	6 items	6 items	6 items	Risk Management
Items of the emergency response plan completed each year	55 items	67 items	55 items	55 items	
Stress test items executed each year	7 items	8 items	7 items	7 items	
Percentage of employees that received risk management training	100%	100%	100%	100%	



Customer Service

Customer satisfaction score	≥ 91 points	94.7	≥ 91 points	≥ 91 points	Customer Service
Number of customer platform parameter measurement services	930 cases	950 cases	935 cases	950 cases	
Number of joint product verification services for customers	24 cases	31 cases	24 cases	25 cases	
Number of customer technical exchange and courses	88 sessions	115 sessions	92 sessions	96 sessions	

Note 6 : We established a volunteer service team at the beginning of 2021, and continued to recruit volunteers after the outbreak of COVID-19, but subsequent events were suspended. We plan to revise the regulations for volunteer services and measures for participation by senior managers, and increase incentives and a sense of honor for participants.

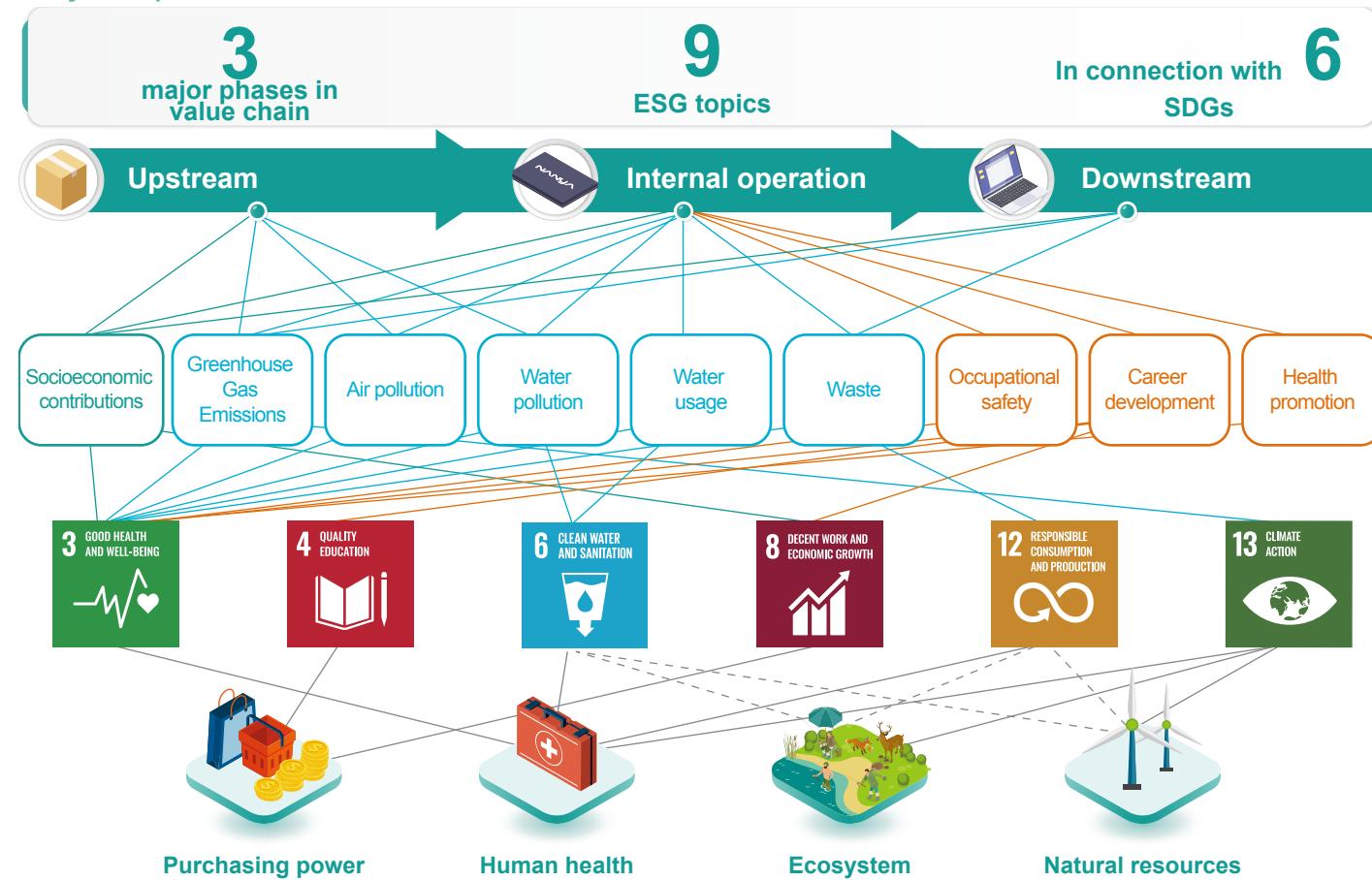
2-5 Sustainable Impact Valuation

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 2022, Nanya generated NT\$57 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\$13.59 million in social cost (since there were no occupational accidents in 2022, this social cost is only from traffic accidents when employees were commuting to work), and the environmental footprint and resource consumption of our production process incurred NT\$840 million in environmental cost. Besides creating NT\$140.3 billion in output value in the upstream supply chain, we also incurred NT\$4.6 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\$73.4 billion in output value in customers' industries, but incurs NT\$3.3 billion in environmental costs in the terminal products and waste stage. The increasing demand for memory products drove the industrial chain development of electronic products. In addition, new generation DRAM products with low power consumption reduced the energy consumption in the use stage of end products. Therefore, a total of NT\$254.6

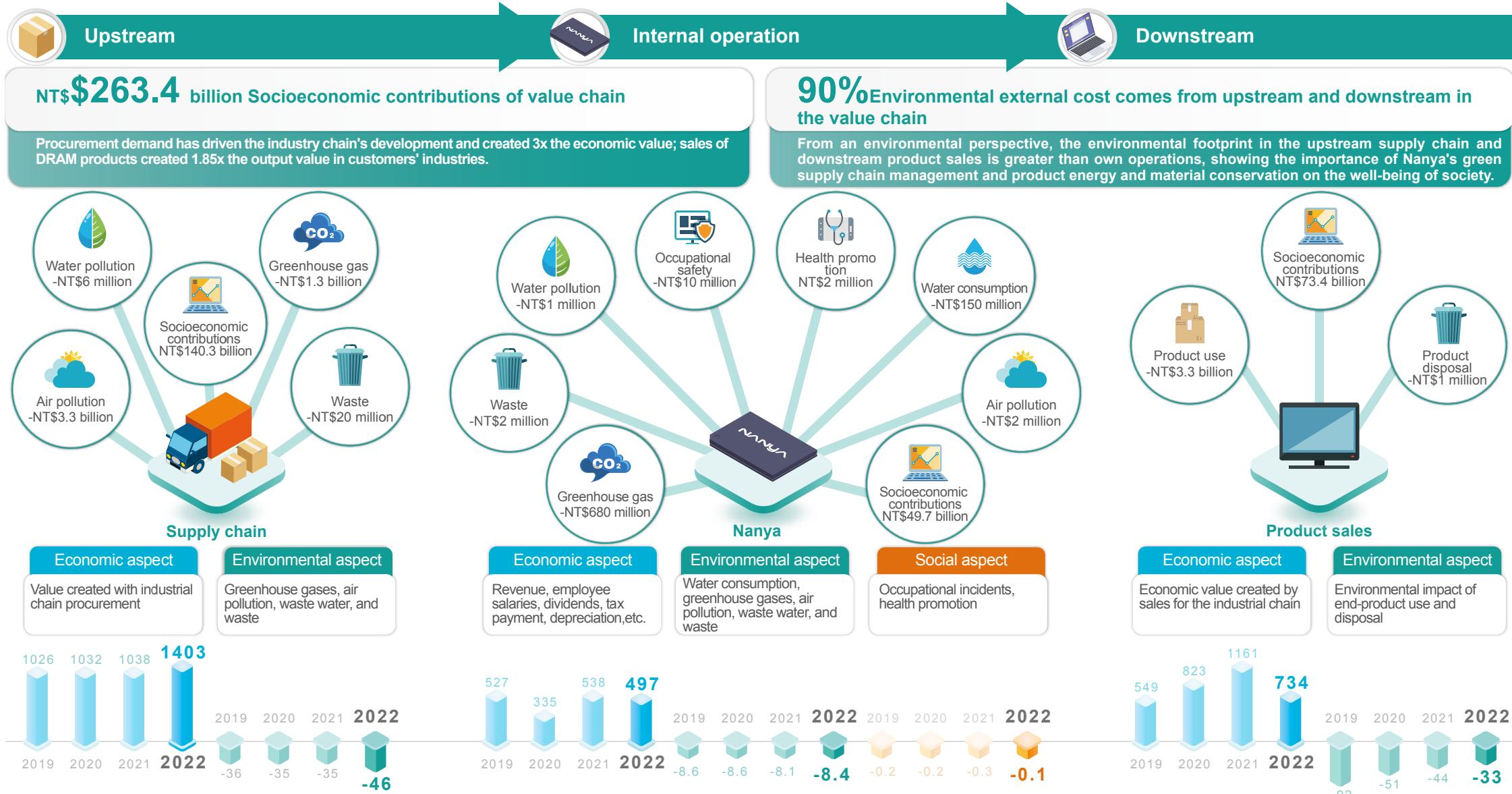
billion Net Positive Impact^{*1} was created in 2022. Nanya will continue to improve and strengthen the management framework of sustainable impact valuation to measure and manage the contributions to social welfare brought by business operations and value chain activities.

Note*1: Net Positive Impact = Positive Impact - Negative Impact

Nanya's Impact Valuation Framework

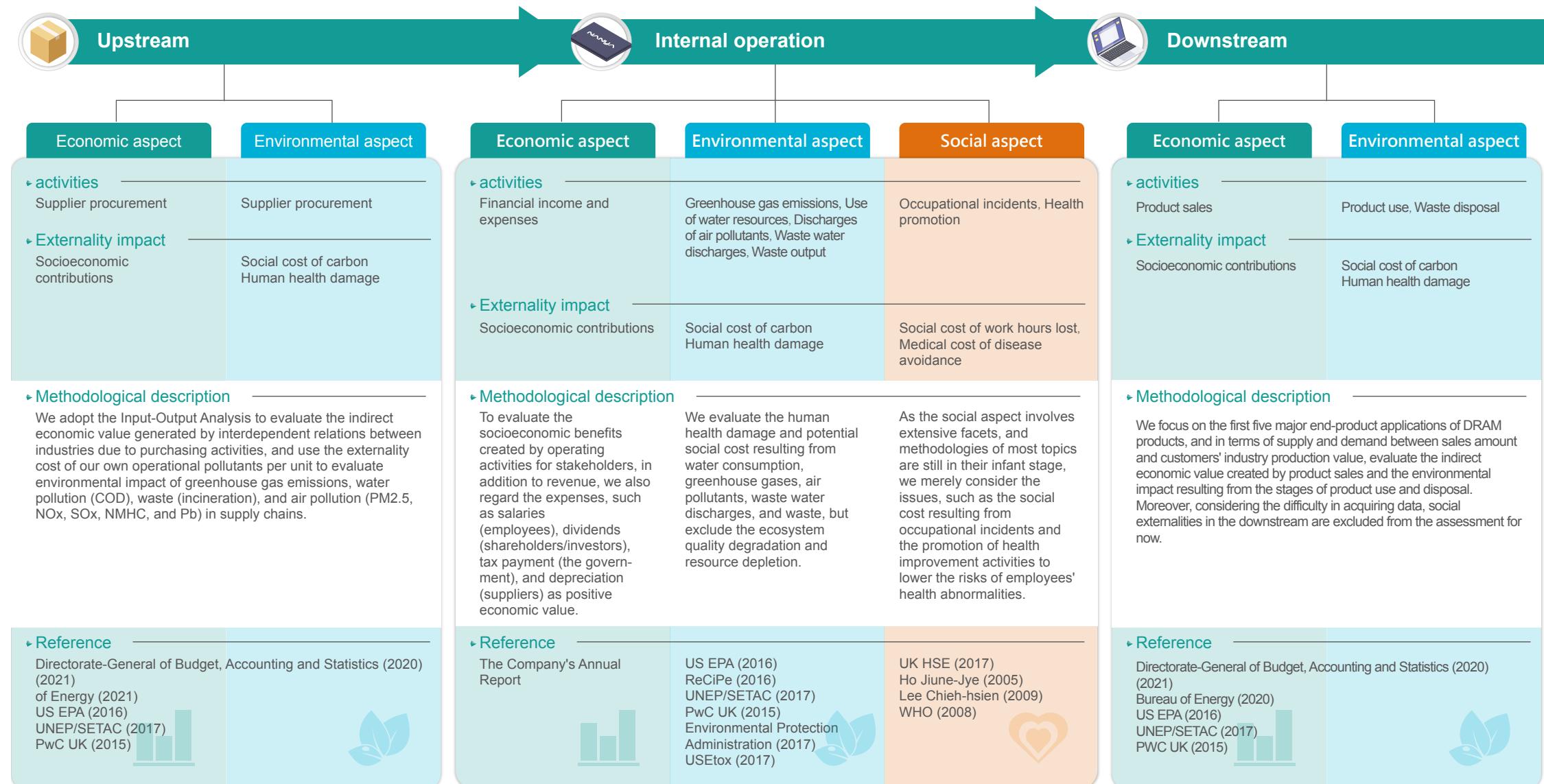


2022 Nanya sustainable impact valuation results



Note*1 : Global raw materials prices significantly increased due to the Russo-Ukrainian War and global inflation. The Company also made strategic adjustments to the safety stock of raw materials; the increase in stock resulted in a significant increase in procurement amount.

Note*2 : Mainly due to weakening demand in the second half of 2022 and customers' high stock level; the excessive supply of DRAM resulted in a decrease in bit sales.



Note*1 : The methodology mainly referenced the valuation framework of the Value Balancing Alliance (VBA).

Note*2 : Currency value conversion all considers the inflation coefficients of 2017, and the exchange rates of New Taiwan Dollar against foreign currencies.

3 Innovation

The Best Partner for
Our Customers

3-1 R&D and Innovation

42

3-2 Green Product Development

46

"Innovation" is one of the driving forces for Nanya'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.

13.8%

R&D expenses accounted for 13.8% of revenue and R&D personnel accounted for 27.1% of employees. These demonstrate Nanya's focus on technological development.

NT\$ 360 million

A total of 90 AI applications were developed as of the end of 2022 and the annual benefits reached NT\$360 million.

812 cases

A total of 812 patents were granted in 2022, an increase of 347 cases or 75% compared to 2021





Strategy and Performance of Material Topics

R&D and Innovation

- Strategy**
- 1.Design new next-generation products
 - 2.Develop 10nm process technologies
 - 3.Entered the high-density server module market
 - 4.Smart factory

2022 Goals	2022 Performance	2023 Goals
Complete the verification of 10nm DRAM technology for product shipment	<ul style="list-style-type: none"> ● 1.1.First generation 10nm DRAM process 8Gb DDR4 products reached shipment verification standards ● 1.2.Second generation 10nm DRAM process 8Gb DDR4 products completed product specifications and yield certification 	<ul style="list-style-type: none"> 1.1.Second generation 10-nm DRAM process 8Gb DDR4 products reach shipment verification standards 1.2.Complete design of second generation 10nm 16Gb DDR5 products and have pilot-run wafers outputs
Cultivate a total of 400 engineers with AI theories and development capabilities	<ul style="list-style-type: none"> ● Cultivated a total of 400 engineers with AI theories and development capabilities 	Cultivate a total of 450 engineers with AI theories and development capabilities
Complete 90 items for AI application development	<ul style="list-style-type: none"> ● Completed 90 items for AI application development 	Complete 110 items for AI application development

Eco-friendly products

- Strategy**
- 1.Technology improvements: Research and develop advanced and highly efficient products to assist consumers in lowering energy consumption and reducing carbon emissions during the usage of products
 - 2.Consider product life cycle: Improve the environmental friendliness of products on the environment
 - 3.Hazardous substance management: Continue to promote replacement plans for hazardous substances in the production process

2022 Goals	2022 Performance	2023 Goals
Ratio of 20nm and other advanced processes accounted for 88% and above	<ul style="list-style-type: none"> ● 88.5% 	Ratio of 20nm and other advanced processes accounted for 96% and above
Complete product life cycle inventory on 100 percent of products	<ul style="list-style-type: none"> ● 100% 	Complete product life cycle inventory on 100 percent of products
100 percent of products conform to hazardous substance free regulations and customers' specifications	<ul style="list-style-type: none"> ● 100% 	100 percent of products conform to hazardous substance free regulations and customers' specifications
100 percent of materials contained zero perfluorooctanoic acid (PFOA) or related substances	<ul style="list-style-type: none"> ● 100% 	100 percent of materials contained zero perfluorooctanoic acid (PFOA) or related substances

Exceeded Achieved Partially achieved

3-1 R&D and Innovation

Smart products have been completely improving the quality of life for human beings and helping energy conservation and carbon reduction. Therefore, every year, Nanya invests large amounts of resources in technological development of new types of DRAM products, next generation processes, and advanced 3D stacked packaging. The developments provide customers with value-added services, reinforce protection for intellectual property and trade secrets, and accelerate the move towards product diversification and smart factory. Moreover, we have set a vision for innovative development to introduce the second generation 10nm DRAM process into mass production in 2025, develop the third generation 10nm DRAM process and the next-generation DDR5 and LPDDR5 products, and manufacture 16Gb high density products at large scale so as to enter fast-growing markets (artificial intelligence (AI), data centers, automotive and the Internet of Things), and set up high-efficient production lines with an AI-aided system.

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. The committee periodically convenes meetings to examine the progress of important projects, including management indicators of open innovation projects, product innovation projects, and process innovation projects. Goals for material topics were all completed in 2022, such as: First generation 10nm DRAM process 8Gb DDR4 products reached shipment verification standards, and second generation 10nm DRAM process 8Gb DDR4 products completed product specifications and yield certification. In AI applications, we cultivated a total of 400 engineers with AI theories and development capabilities, and developed 90 AI applications between 2019 and 2022.



Investment in Innovative R&D

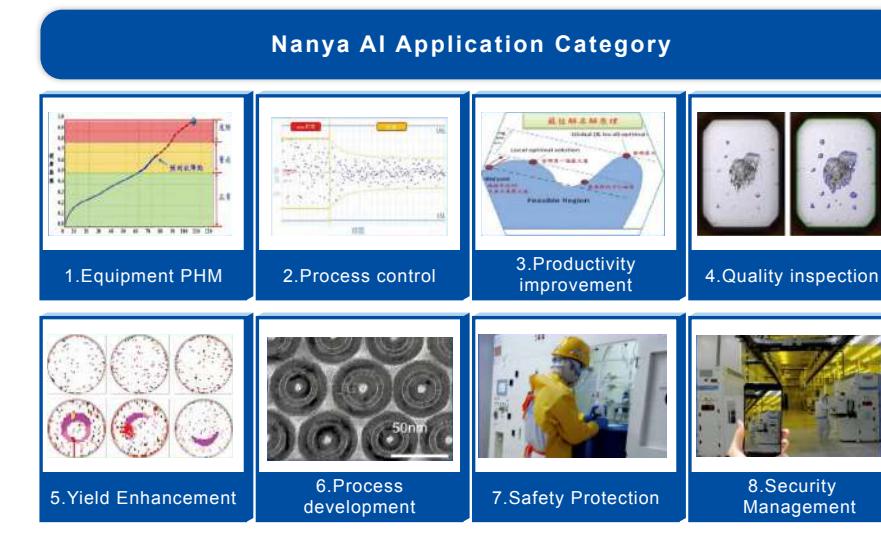
	2019	2020	2021	2022
Operating revenue (A) 100 Million NTD				
517	610	856	570	
R&D and innovation expenses (B) 100 Million NTD				
49.3	51.4	75.0	78.4	
R&D expenses as a percentage of operating revenue (B/A)				
9.5%	8.4%	8.8%	13.8%	
Total number of employees (C)				
3,307	3,542	3,554	3,685	
Total number of R&D personnel (D)				
639	922	953	1,000	
R&D personnel as a percentage of all employees (D/C)				
19.3%	26.0%	26.8%	27.1%	

Nanya Smart Factory

Smart Factory Infrastructure and Applications

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, Safety Protection, and Security 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, and wafer pattern recognition. These applications can effectively enhance overall operation efficiency, and make important contributions to manufacturing key indices - Yield, Quality and Output.



Infrastructure



AI Development Benefits and Promotion

By the end of 2022, Nanya has completed 90 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. Annual benefits reach NT\$360 million. As we continue to develop new AI applications, we expect total benefits to reach NT\$2 billion in the next 5 years (up to 2027).

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, RNN, object detection), and edge computing technologies.

AI education platform



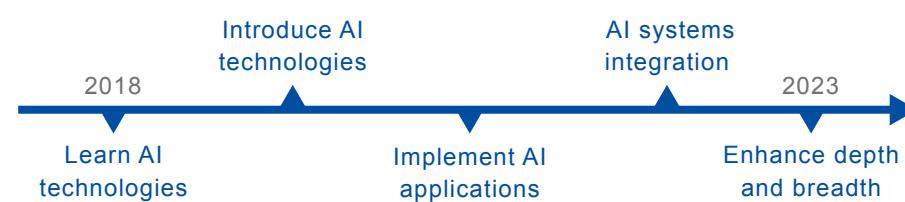
AI training courses were conducted by internal and external instructors, and trained a total of 400 engineers with AI theories and practical technical abilities.

1.CNN: Convolutional Neural Networks

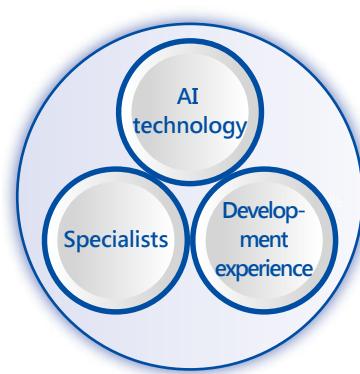
2.RNN: Recurrent Neural Networks

► AI Application Development Plan

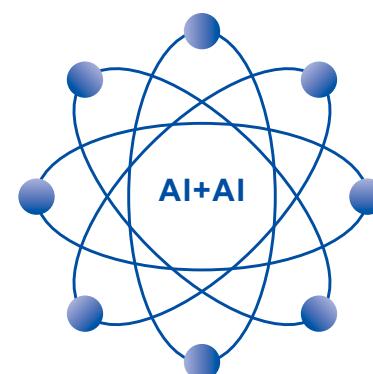
Nanya established an AI applications team in 2018, learned and introduced AI technology, gradually implemented AI in various departments, and connected more smart systems, such as yield enhancement system, smart production system, and general image recognition system that can make production line operate 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.



Accumulate development ability



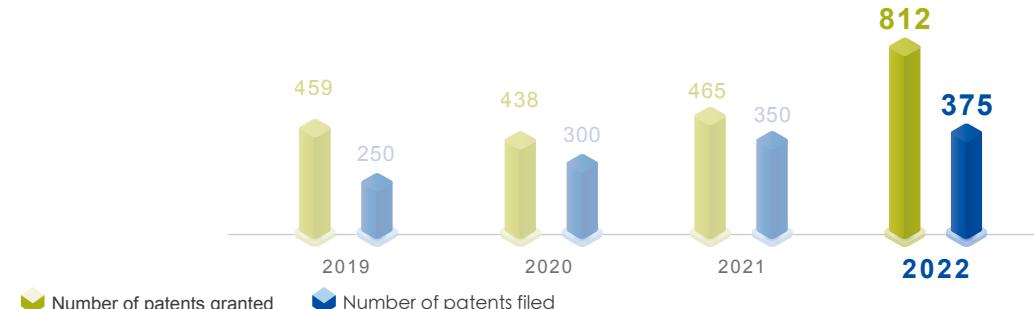
Connect AI systems



► Status and Strategy of Intellectual Property

Besides working with world class talent 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 2022, Nanya has accumulated over 5,900 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.

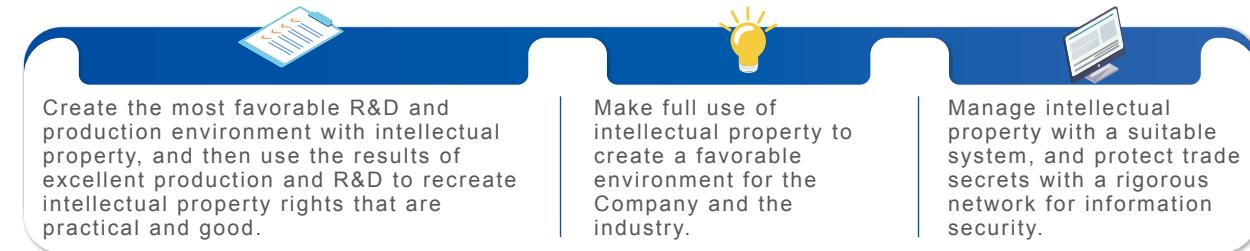
Nanya's patent performance



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

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.

Nanya intellectual property strategy



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.



*Note: The number declined in 2021 due to the change of archive rules.

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, Nanya holds annual innovation competitions, offers patent rewards and rewards for improvement proposals, and organizes essay competitions and the best team competitions. We recognize and reward innovative ideas proposed by each employee, hoping that all employees will internalize the spirit of innovation.

Incentive innovation mechanism

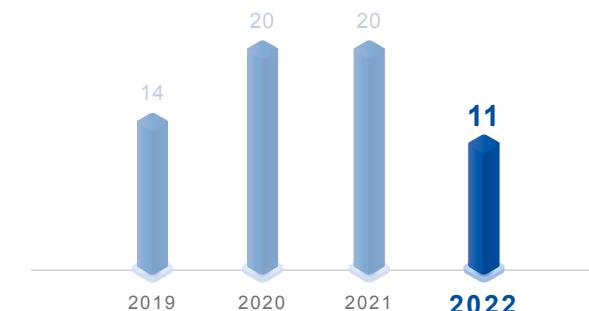


Results of innovative activities

	2019	2020	2021	2022
Patent rewards: Number of patents granted				
	459	438	465	812
Rewards for improvement proposals: Number of proposals				
	225	207	207	212
Rewards for improvement proposals: Actual annual benefit(NT\$)				
	368,721,600	1,583,318,400	882,517,200	756,744,060
Technological essay competitions: Number of entries				
	65	79	93	103
Best team competitions: Number of entries				
	15	17	13	17

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, Chang Gung University, Industrial Technology Research Institute, and testing equipment suppliers. We have also partnered with manufacturers of masks and machinery in joint development of 10 nm 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



Number of cases

3-2 Green Product Development

Nanya and clients both aim to protect a green planet. 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 management and Conflict-free minerals and Responsible Mineral Sourcing 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

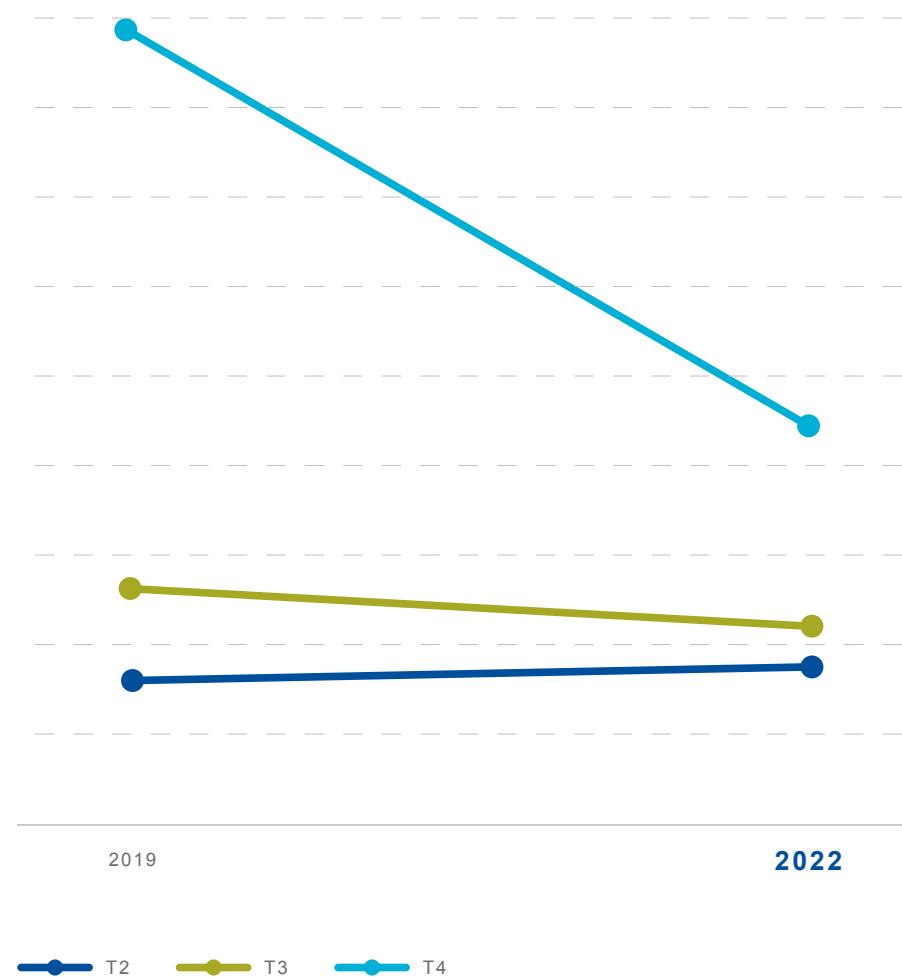
	Procurement	Manufacturing	Transportation	Product use	Disposal and recycling
Energy efficiency	●	●	●	●	
Greenhouse Gas Emissions	●	●	●	●	
Material reduction	●	●	●		
Responsible Mineral Sourcing Management	●				
Hazardous substances	●	●		●	
Waste reduction		●		●	
Water resources reduction		●			

Life Cycle Assessment

In response to the EU's new wave of requirements for environmental issues, 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/TS 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 2021 product life cycle assessment are as follows:

Electricity use	Use 12-inch production wafers	Liquid oxygen
<p> Percentage of product carbon footprint 82.86%</p> <p>Improvement plan Implement energy conservation improvement plans</p> <p>2022 Operation result</p> <ul style="list-style-type: none"> Completed 25 energy conservation management plans under ISO 50001, energy conservation benefits: 4378 MWh Purchase 7.88 million kWh of renewable energy <p>Direction for further improvement</p> <ul style="list-style-type: none"> Continue to implement the ISO 50001 Energy Conservation Plan Continue to purchase renewable energy according to plan 	<p> Percentage of product carbon footprint 3.18%</p> <p>Improvement plan Require foundries to implement energy conservation and carbon reduction management plans</p> <p>2022 Operation result</p> <ul style="list-style-type: none"> Completed the energy conservation plan and saved 5,355 MWh Suppliers joined the SBTi and plan to reduce Scope 1+2 emissions by 25% in 2030. <p>Direction for further improvement</p> <ul style="list-style-type: none"> Continue to require foundries to implement energy conservation and carbon reduction management plans 	<p> Percentage of product carbon footprint 1.70%</p> <p>Improvement plan Require liquid oxygen suppliers to implement energy conservation and carbon reduction management plans</p> <p>2022 Operation result</p> <p>Suppliers joined the SBTi and plan to reduce Scope 1+2 emissions by 25% in 2030.</p> <p>Direction for further improvement</p> <ul style="list-style-type: none"> Continue to require liquid oxygen suppliers to implement energy conservation and carbon reduction management plans

Product's Carbon footprint by processes

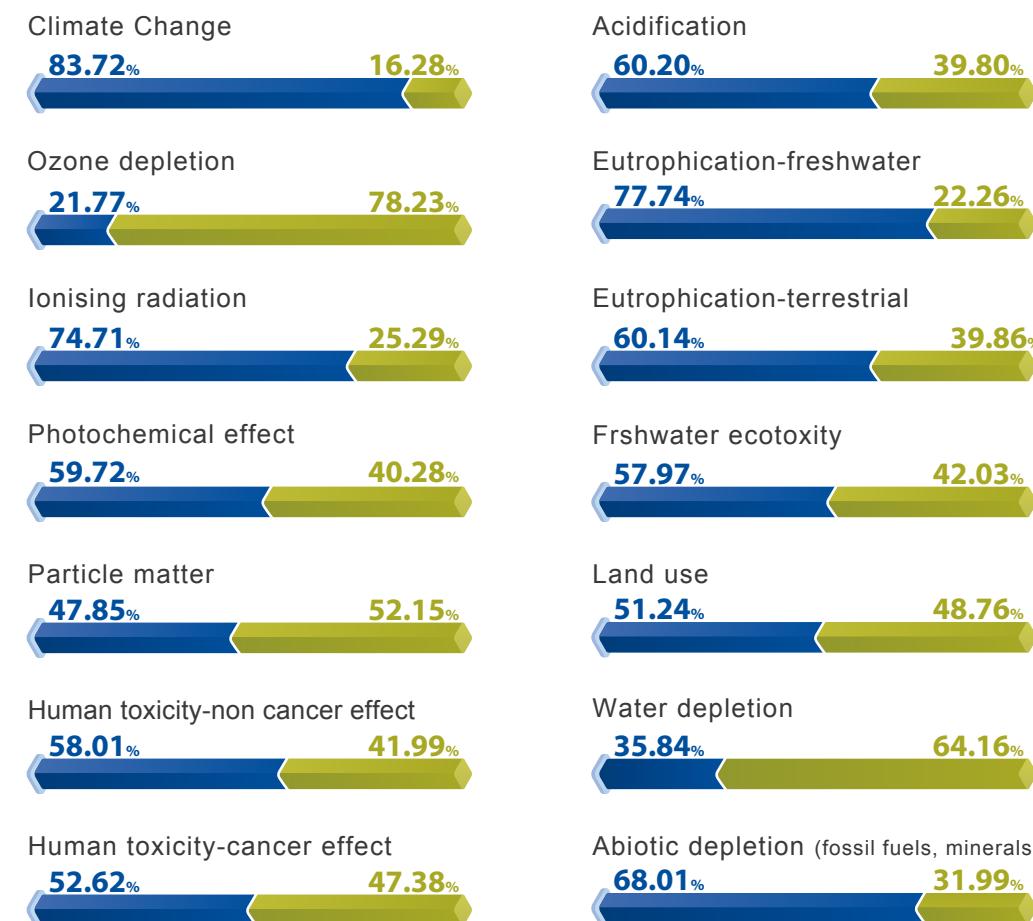


Advanced process T2 has a benefit of lower carbon footprint than T3/T4 process

Stages of raw materials and manufacturing process of SA30

Product life cycle inventory for 2022 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 83.8% of greenhouse effect, and procurement of raw materials accounted for around 16.2% of greenhouse effect.

Ratio chart of product(SA30)'s 14 items of environmental footprints in stages of raw materials and manufacturing process



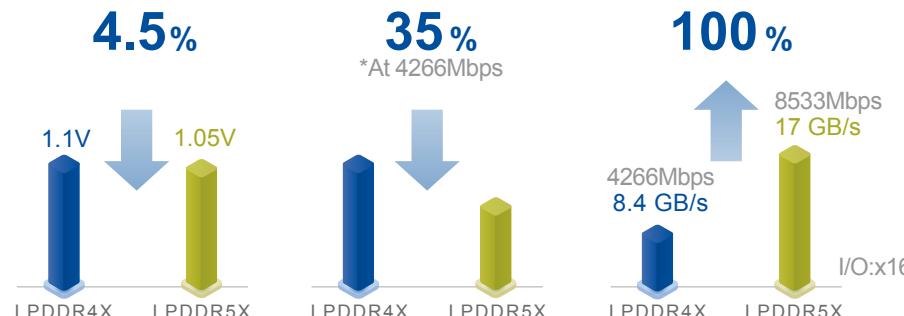
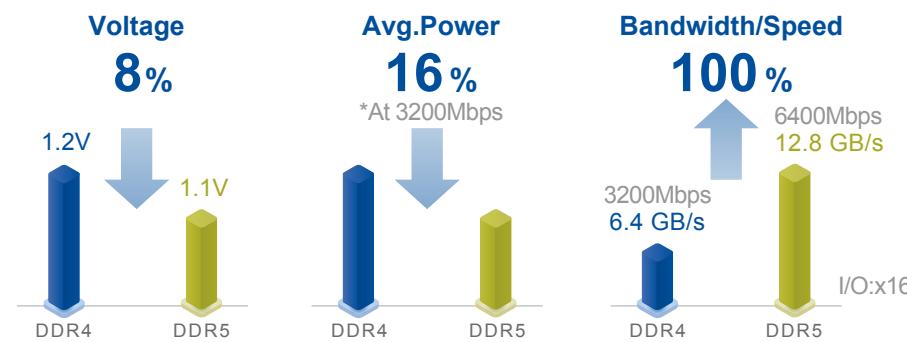
► Green Product Design

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-nm and 1B-nm technologies in 2017, and planned to develop 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-nm technology is expected to be completed in 2022. This is the first 10nm DRAM technology of a Taiwanese company, and proves 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.

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.

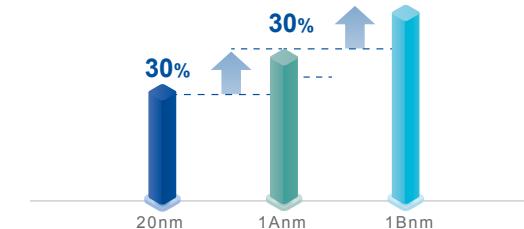
DDR5&LPDDR5X provides specifications that save more electricity with high bandwidth/high speed



Nanya has focused on the development of advanced processes, and began independently developing 1A-nm process technology in 2017; trial production began in 2022. 1A-nm 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-nm process technology in 2019 and expect to begin small-scale production in 2023. 1B-nm process technology further shrunk chips made using 1A-nm 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

To enable 30% productivity gain per technology node



**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 assist clients lower demand for energy during their usage of electronic products so that greenhouse gas emissions can be reduced.**

**Over 621.69 million kWh of electricity saved**

Product:
low power DRAM and 20nm consumer DRAM

Scope:
total sales volume of 2022

Calculation:
Based on the quantity of products sold in one year, and compared the energy consumption of the aforementioned DRAM products with that of the previous generation

Benefits:

Saved the annual electricity consumption of 172 thousand households ^{Note 1} and reduced greenhouse gas emissions by 316,440 ton-CO₂e ^{Note 2}, which is the equivalent of 814 times the carbon absorption of Daan Forest Park in an entire year ^{Note 3}.

Note 1: Estimated based on the actual monthly electricity consumption of 3,619 kWh/year by housing units in the statistics for housing units and small stores on the website of Taiwan Power Company (2023/1/16)

Note 2: The carbon emission factor of electricity is based on the announcement of the Bureau of Energy in 2021: 0.509 kg CO₂e/kWh

Note 3: According to the Bureau of Energy, Ministry of Economic Affairs: The CO₂ absorption of Daan Forest Park used for calculation is 389 tons per year

R&D Policy for Low Energy Consumption Products

Nanya continues to develop advanced manufacturing processes, so the energy consumption of new generation products developed with new processes is reduced by 15% compared with the previous

Nanya cooperates with major chip customers, adopting the method of multi chip package (MCP) to reduce back-end assembly and testing as well as energy consumption

Nanya strengthens the development of low energy consumption product lines and enlarges product portfolios in order to satisfy the need of various mobile devices and electronic products

Hazardous Substance Free Product Management

In 2005, Nanya established the Green Product Promotion Committee (GPPC) to promote hazardous substance free (HSF) management. During the product manufacturing process, we continued to prevent pollution, save energy, reduce wastes, and avoid hazardous substances. Through concatenating suppliers and subcontractors to well managed of raw materials, manufacture process materials, package assembly materials, DIMM Module materials and packaging materials, Nanya built an effectively green product supply chain to managed raw material provider, process material provider, back-end assembly house subcontractor and shipment packing material provider and its materials to meet green product policy and conform to the laws and regulations of current global environmental protection trend. Through the GPPC, we referred to laws and regulations of the EU and countries in other regions and the hazardous substance management specifications of major international customers to stipulate the General Rules of Environmental Management Substances for Components and Materials, continuing to effectively control and manage the

sources of raw materials and related materials in order to achieve standards of green products and mitigate impacts on natural environment during manufacturing process of products. We followed the General Rules of Environmental Management Substances for Components and Materials and all products are required to comply with international regulations and customer requirements. Through the establishment of a HSF management system for materials, we ensured that the wafers, IC packaging, and DIMM module products comply with international regulations and related specifications of clients towards HSF management.

Green products are defined by Nanya as products that comply with the following requirements of BNDCU-0012 General Rules of Environmental Management Substances for Components and Materials:

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

Substance Name	RoHS Restriction
1. Cadmium and its compounds	<100ppm
2. Lead and its compounds	<1000ppm
3. Mercury and its compounds	<1000ppm
4. Hexavalent Chromium and its compounds	<1000ppm
5. Poly-brominated Biphenyls (1-10 PBBS)	<1000ppm
6. Poly-brominated Diphenyl Ethers (1-10 PBDEs)	<1000ppm
7~10. 4 Specific Phthalates (DBP,BBP,DEHP,DIBP)	<1000ppm

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

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

Complies with requirements of EU Directive 94/62/EC PPWD

Substance Name	PPWD Restriction
1.Cadmium and its compounds	
2.Lead and its compounds	
3.Mercury and its compounds	
4.Hexavalent Chromium and its compounds	Total sum of 4 heavy metals <100ppm

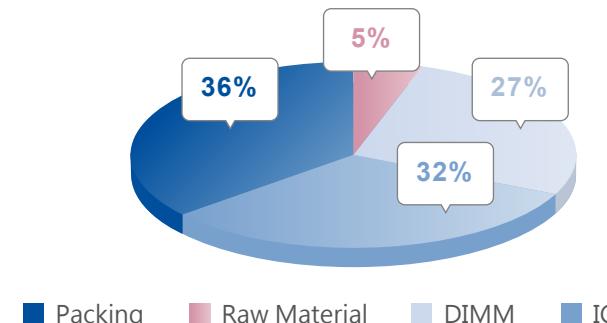
Comply with requirements set forth in Section 6(h) of the U.S. Toxic Substances Control Act to not use 5 PBT (Persistent, Bio-accumulative, and Toxic) substances

Substance Name	CAS No.	Applied Materials Field
Decabromodiphenyl ether (DecaBDE)	1163-19-5	Flame retardant, used in plastics, textiles, communication or electronic equipment wires and other products of TV, computer, audio-visual equipment and other products
Phenol, Isopropylated Phosphate (PIP)(3:1)	68937-41-7	As plasticizer, flame retardant, anti-wear agent, anti-com pression fluid, applied or added to hydraulic oil, lubricating oil, industrial coatings, adhesives, plastic products, etc.
Pentachlorothiophenol (PCTP)	133-49-3	Intermediates or reactants of processing or formulations that may be present in additives such as fuels, gasoline or lubricating oils
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	Applied in rubber process to make it more flexible

Comply with requirements of other customers/prohibitions in the law/restricted substances, such as prohibited or restricted substances of concern in homogeneous material or finished products in the scope of EU REACH SVHC/EU POP/GADSL

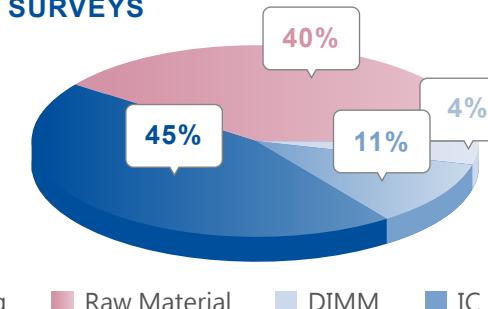
In order to complete the relevant requirements, a total of 1,414 RoHS reports will be reviewed in 2022, and EU REACH SVHC regulatory compliance investigations (once every 6 months) and customer hazardous substance investigations will be conducted 4 times. Complete as follows:

2022 TEST REPORTS



- 100% reviewed 1414 RoHS test reports that collecting from 7 subcontractors and 49 raw material suppliers.

2022 HS SURVEYS



- Two versions of REACH SVHC V.26 & V.27 survey (HS Survey V.43 & V.45) were completed while 158 HS survey reports were reviewed. The completion rate was: 100%.
- Completed 2 versions of HS survey (HS Survey V.46 & V.47) required by clients, while 40 HS survey reports were reviewed. The completion rate was 100%.
- Completed 2 versions of responsible mineral sourcing survey (HS Survey V.44 & V.48), while 38 HS survey reports were reviewed. The completion rate was 100%.

4

Talent

An Attractive Employer for
Professional Talents

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In order to create momentum for growth even amid continuous changes in the external environment, Nanya uses talent retention and cultivation to preserve competitive advantages. We also accept employee opinions to create a safe, human rights-based, and harmonious workplace and fulfill our business targets.

76.2 %

Employee Engagement Survey reached the average approval rate of 76.2%, up 4.2% compared to 2021.

85.9 %

The Company encourages employees to receive on-the-job training for personal development, and the employee substitution rate for internal job openings reached 85.9%, up 1.7% compared with 2021.

Full score of 200 points

RBA VAP Verification Plan





Strategy and Performance of Material Topics



Talent Cultivation and Development

Competency improvement: Formulate annual training and development plans, and plan diverse learning courses and channels

Key talent: Strengthen key talent development and increase the percentage of key talent

Personal development: Establish self-learning and employee individual development mechanisms to increase the employee substitution rate for internal positions

2022 Goals	2022 Performance/ Target achievement status	2023 Goals
Annual planned course completion rate $\geq 100\%$	178.5%	Annual planned course completion rate $\geq 100\%$
Key talent as a percentage of all employees $\geq 4\%$	5.5%	percentage of all employees $\geq 5.7\%$
Internal employee substitution rate for job openings $\geq 62\%$	85.9%	Internal employee substitution rate $\geq 65\%$
TTQS Talent Development Quality Gold Award	Received the Talent Development Quality Gold Award	Talent Development Leader Award



Human Rights

Compliance with laws: Comply with international human rights standards and apply relevant policies and standards in practice.

Protect equality: Build workplace equality by establishing risk management and precautionary measures as well as designing diversified communication and complaint channels.

2022 Goals	2022 Performance/ Target achievement status	2023 Goals
No major deficiencies are found in external audits or labor inspections	No major deficiencies	No major deficiencies are found in external audits or labor
Workplace violence: 0 cases	0	Workplace violence: 0 cases
Human rights policies and procedures training completion rate: 100%	100%	Human rights policies and procedures training completion rate: 100%

Exceeded

Achieved

Partially achieved



Talent Retention and Employee Care

Manpower stabilization: Implement talent retention plans to stabilize outstanding employees and increase the retention rate of key talents.

2022 Goals	2022 Performance/ Target achievement status	2023 Goals
Retention rate of key talent $\geq 98\%$	99.5%	Retention rate of key talent $\geq 98\%$
Voluntary turnover rate*1 $\leq 5\%$	8.8%	Voluntary turnover rate $\leq 6\%$
Average approval rate inf Employee Engagement Survey $\geq 75\%$	76.2%	Average approval rate inf Employee Engagement Survey $\geq 75\%$



Occupational Health and Safety

Early diagnosis and early improvement: Continuous PDCA improvements for the occupational health and safety system

Safety culture: Build employees' safety awareness and establish a high-quality safety culture

Cross-inspection: Cross-inspection by internal and external institutions to strengthen independent inspections

2022 Goals	2022 Performance/ Target achievement status	2023 Goals
Frequency of disabling injuries*2 < 0.2	0	Disabling frequency rate < 0.19
Severity of disabling injuries*3 < 6.8	0	Disabling severity rate < 6.5
In-plant self-inspection rate*4 > 93.8%	94.1%	In-plant self-inspection rate > 93.9%
Number of proposals engaging all employees for safety and health > 920	1050 cases	Number of proposals engaging all employees for safety and health > 1,150
Occupational diseases caused by chemical exposures maintained at 0 cases	Maintained at 0 cases	Occupational diseases caused by chemical exposures maintained at 0 cases

4-1



Attracting and Retaining Talent

Employee Diversity

Employees are the most important partners of Nanya Technology Corporation, and also the key to maintaining corporate sustainability and innovative R&D. We strive to create a humane and comfortable office environment where new employees are subjected to systematic training and have access to diverse learning resources to help them quickly accumulate professional knowledge and skills for the semiconductor industry, and receive reasonable compensations in return. The Company also has an Employee Welfare Committee that organizes exciting and interesting recreation activities on a yearly basis to maintain employees' work-life balance as well as physical and mental well-being, and create a sustainably healthy workplace.

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 : Voluntary turnover rate includes employees in Taiwan and overseas

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

*3 : Severity of disabling injuries (SR) = (total days lost to disabling injuries $\times 10^6$)/total work hours

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

*5 : External pull on talent with a background in engineering has increased due to the rapidly growing market demand, and its has affected employee turnover. We have already included the situation in our risk management and assessed the overall competitiveness of our salaries.

Diversified recruitment policy

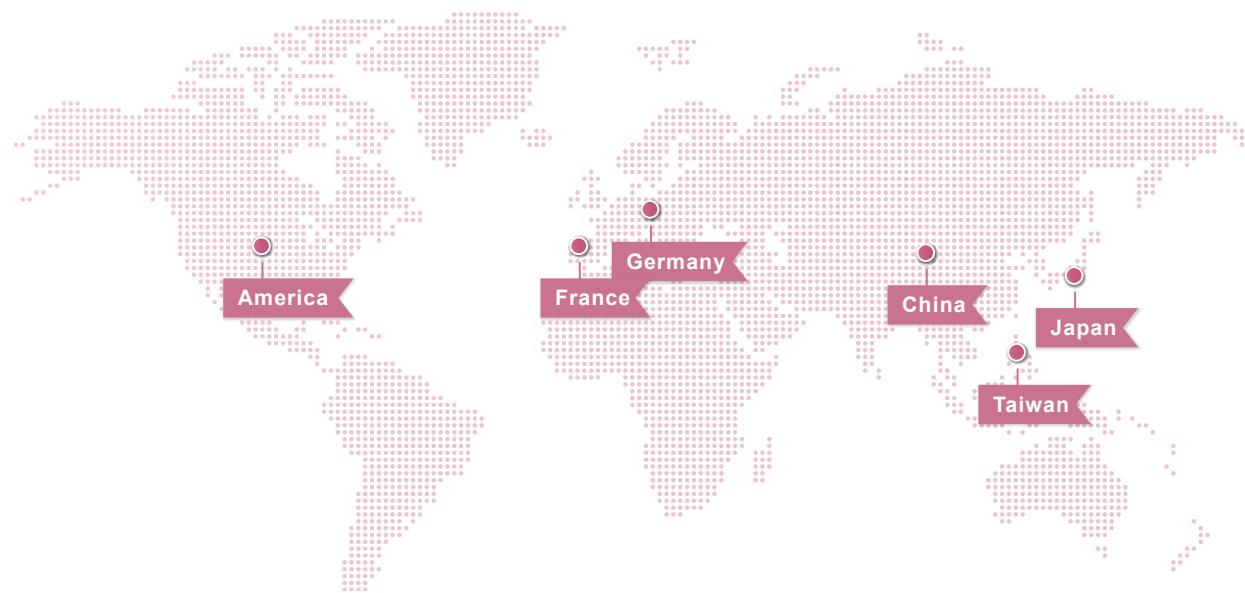
Since Nanya Technology Corporation has business operations based in Taiwan and overseas, the nationalities of the Company's employees are quite diverse. In addition to Taiwanese staff, employees of the following 15 nationalities were also hired in 2022: Chinese, French, German, Japanese, American, Thai, Vietnamese, Burmese, Italian, Kenyan, Korean, Turkish, British, Indonesian, and Malaysian. Our employees form an internationally diversified workplace. We had 111 foreign employees in 2022, accounting for 3.01% of all employees. Taiwanese nationals accounted for the largest proportion of employees in management levels, at 91.18%. In descending order, the top five nationalities of foreign managers were American, Chinese, Japanese, German, Indonesian, and Malaysian. Employees with these five nationalities made up 6.89% of all employees in management levels.

Nanya Technology Corporation also supports the government's policies of hiring people with disabilities as part of its workplace friendly diversity initiative. As of December 2022, Nanya Technology Corporation hired a total of 36 employees with disabilities into Taiwan operations, which represented 1.01% 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.

Year	Nationality count	Percentage of foreign employee(%)	Number of employees with disabilities	Percentage of employees with disabilities (%)
2022	16	3.01%	36	1.01%
Nationalities				
Taiwanese, Chinese, French, German, Japanese, American, Thai, Vietnamese, Burmese, Italian, Kenyan, Korean, Turkish, British, Indonesian, and Malaysian				
2021	15	3.26%	36	1.05%
Nationalities				
Taiwanese, Chinese, French, German, Japanese, American, Thai, Vietnamese, Burmese, Italian, Kenyan, Korean, Turkish, British, and Indonesian				
2020	15	3.56%	36	1.05%
Nationalities				
Taiwanese, Chinese, Turkish, Japanese, Indonesian, French, Kenyan, USA, British, Malaysian, Indonesian, Italian, German, Burmese, Korean				
2019	11	2.96%	26	0.81%
Nationalities				
Taiwanese, Chinese, German, Italian, Japanese, Korean, British, USA, French, Turkish, Singaporean				

Note: The percentage of employees with disabilities is calculated based on the 3,579 formal employees in Taiwan.

Top five nationalities of managers and employees as a percentage of total employees at the level in 2022



Top five nationalities of managers and employees as a percentage of total employees at the level in 2022

Taiwanese	American	Chinese	Japanese	German	Indonesia	Malaysia	Other nationalities
Number of Managers							
331	13	3	6	3	0	0	7
As a Percentage of Total Managers							
91.18%	3.58%	0.83%	1.65%	0.83%	0.00%	0.00%	1.93%
Number of people							
3574	59	21	8	4	3	3	13
As a percentage of total employees							
96.99%	1.60%	0.57%	0.22%	0.11%	0.08%	0.08%	0.35%

► 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 Technology Corporation has a very stable workforce structure. As of 2022, the Company has a total of 3,685 permanent employees in Taiwan and in overseas subsidiaries (including 89 interns), in which 86.62% are specialists^{Note 1}. The Company has also hired 53 informal employees^{Note 2}. Overall, the Company has a competitive, healthy and growing talent base to support development of innovative production procedures, technologies and products. Nanya Technology Corporation has 3,579 formal employees in Taiwan, accounting for 97.12% of all employees; overseas subsidiaries have 106 formal employees, accounting for 2.88% of all employees. Formal male employees totaled 2,670 (accounting for 72.5%), whereas formal female employees totaled 1,015 (accounting for 27.5%), representing a gender ratio of 2.63 (male) : 1 (female). The average age of the Company's employees was 37.86 years old. The majority of employees was in the 30-50 year old age group, representing 67.41% 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 2022 and 100% of its employees worked on a full-time basis.

Note1: Professional personnel refer to non-production line operators
 Note2: Informal employees include consultants, fixed-term contract-based employees, and part-time workers

Statistics of employees in Taiwan and overseas subsidiaries in 2022 by age

	Taiwan				Overseas subsidiaries			
	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 male employees
Under 30								
Formal employees	171	17.22%	612	23.67%	3	13.64%	23	27.38%
Informal employees	13	100.00%	26	65.00%	0	0.00%	0	0.00%
30-50 years old								
Formal employees	737	74.22%	1707	66.01%	11	50.00%	29	34.52%
Informal employees	0	0.00%	7	17.50%	0	0.00%	0	0.00%
Over 50								
Formal employees	85	8.56%	267	10.32%	8	36.36%	32	38.10%
Informal employees	0	0.00%	7	17.50%	0	0.00%	0	0.00%

	Total				
	Female	As a percentage of total female employees	Male	As a percentage of total male employees	Male and Female
Under 30					
Formal employees	174	17.14%	635	23.78%	809
Informal employees	13	100.00%	26	65.00%	39
30-50 years old					
Formal employees	748	73.69%	1736	65.02%	2484
Informal employees	0	0.00%	7	17.50%	7
Over 50					
Formal employees	93	9.16%	299	11.20%	392
Informal employees	0	0.00%	7	17.50%	7

In 2022, Nanya Technology Corporation had 19 female mid-level managers, which accounted for 20.00% of all mid-level managers; there were also 3 female senior-level managers, representing 4.29% of all senior-level managers. Due to the special nature of the semiconductor industry and realities concerning talent supply, males still dominated the management roles. As for managers of production and revenue related departments, 116 are female, accounting for 37.66%.

Number and Percentage of Female Staff in the Last 4 Years

2019		2020		2021		2022	
Number of females	Percentage of females	Number of females	Percentage of females	Number of females	Percentage of females	Number of females	Percentage of females
Total employees							
930	28.12%	973	27.47%	982	27.63%	1015	27.54%
Senior manager (A)							
3	5.17%	3	4.35%	3	4.35%	3	4.29%
Mid-level manager (B)							
15	18.29%	15	16.30%	15	15.63%	19	20.00%
Entry-level manager (C)							
8	12.50%	8	9.20%	9	9.38%	7	9.59%
Head of revenue-generating department (management level)*							
106	39.55%	108	37.11%	114	36.89%	116	37.66%
Females working in STEM-related positions							
360	14.84%	411	15.54%	428	15.92%	459	16.34%

*Managerial role refers to senior managers (plant manager, director and above), mid-level managers (department manager), and entry level managers (section manager).

*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 2019-2020 was revised, but the statistical method was not changed.

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.

The Company hired a total of 373 engineers in Taiwan in 2022. The Company recruits entry-level engineering talents through factory sites and campus recruitment programs. The Company approaches renowned local colleges each year to recruit engineering talents with various skill levels and matches them to open positions on-site. We invested approximately NT\$1.3 million in recruiting in 2022, averaging NT\$2,337 per person. As the COVID-19 pandemic gradually subsided, the number of college recruitment events increased to 15 in 2022. The Company approached campuses and engaged young students in a series of interaction, communication and discussion based on the theme "You be the Leader of the Future". It is our hope to encourage all willing students to pursue a dream career in the high-tech industry and contribute to semiconductor development in Taiwan. 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 2019 to 2022

2019	2020	2021	2022
Total recruitment costs (NTD)			
2,118,234	820,261	1,286,210	1,304,183
Total number of recruits			
309	483	360	558
Average recruitment cost per person (NTD)			
6,855	1,698	3,573	2,337



| Nanya talent recruitment video

Campus recruitment photos



In order to promote the development of the semiconductor industry and company operations, Nanya Technology Corporation proactively recruits new employees into the Nanya big family. Company employees work cooperatively to move forward together. New recruits accounted for approximately 11.18% of the Company's total employees in 2022. Gender distribution of new recruits was approximately 4.02 (male) : 1 (female).

Statistics on new recruits of Taiwan and overseas operations from 2019 to 2022

2019	2020	2021	2022
Number of new recruits			
238	374	270	412

Statistics on new recruits in Taiwan and overseas in 2022

	Female Number of people	Female Percentage Note 2	Male Number of people	Male Percentage Note 3	Total Number of people	Total Percentage Note 4
New recruits^{Note 1}						
By region						
Taiwan	80	8.06%	318	12.30%	398	11.12%
Overseas subsidiaries	2	9.09%	12	14.29%	14	13.21%
Age group						
Under 30	66	37.93%	243	38.27%	309	38.20%
30-50 years old	15	2.01%	85	4.90%	100	4.03%
Over 50	1	1.08%	2	0.67%	3	0.77%
Management level						
Senior manager	0	0.00%	0	0.00%	0	0.00%
Mid-level manager	0	0.00%	0	0.00%	0	0.00%
Entry-level manager	0	0.00%	0	0.00%	0	0.00%
Total new recruits	82		330		412	
As a percentage of formal employees	2.23%		8.96%		11.18%	

Note 1: New recruits refer to personnel hired and remained employed in 2022 (excluding those who resigned during the year)

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

4-2 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.

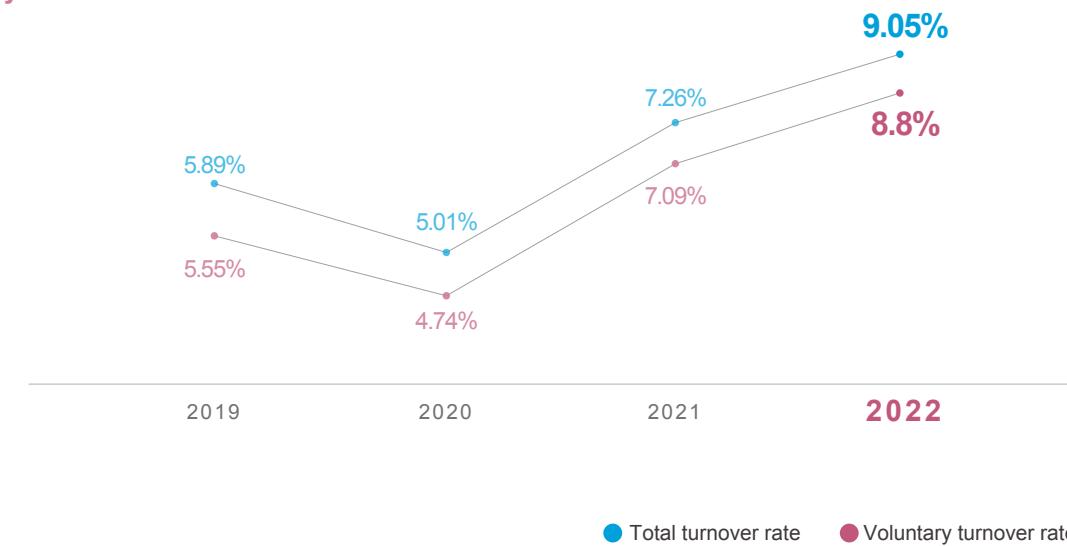
Enhanced work security – Turnover rate

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 2022 was 8.8% (the male to female ratio of those who resigned is approximately 3.47 : 1). Compared to the voluntary turnover rate of 7.09% in 2021, there was a 1.71% increase in 2022, and it was also slightly higher than the average turnover rate of 8.3% in the industry. In response to this situation, 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 2022. This allows employees to work in a happy and safe environment. Nanya Technology Corporation 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 2019-2022



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.We began excluding employees on unpaid leave from the voluntary turnover rate in 2020. Based on the calculation that excluded those who went on unpaid leaves, the adjusted voluntary turnover rate was 5.55% and the adjusted overall turnover rate was 5.89% in 2019.

Statistics on total number of employees separated in Taiwan and overseas in 2022

	Female Number of people	Percentage Note 2	Male Number of people	Percentage Note 3	Total Number of people	Percentage Note 4
Total number of employees separated^{Note 1}						
By region						
Taiwan	70	100.00%	232	92.80%	302	94.38%
Overseas subsidiaries	0	0.00%	18	7.20%	18	5.63%
Age group						
Under 30	30	42.86%	108	43.20%	138	43.13%
30-50 years old	37	52.86%	124	49.60%	161	50.31%
Over 50	3	4.29%	18	7.20%	21	6.56%
Job Level						
Senior manager	0	0.00%	1	0.40%	1	0.31%
Mid-level manager	0	0.00%	2	0.80%	2	0.63%
Entry-level manager	1	1.43%	2	0.80%	3	0.94%
Total number of employees separated	70		250		320	
As a percentage of formal employees^{Note 5}	6.92%		9.67%		8.90%	

Note1: Total turnover rate includes voluntary (including retirement) and involuntary turnover (including dismissal, redundancy, death etc.)

Note2: Percentage of employees separated that were female

Note3: Percentage of employees separated that were male

Note4: As a percentage of all employees separated

Note5: 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 2022 (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 2022 totaled NT\$574,315,919, and had been fully contributed. For other employees who choose 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 a higher amount voluntarily, and the amount is deposited into the employee's retirement account along with the 6%, providing substantial retirement security.

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 of 93.4% was slightly higher than in 2021. The results showed that the average level of approval from all employees was 76.2%, an increase of 4.2% compared to the 72% in the previous year. Observing the approval scores in the 2021 and 2022 Employee Engagement Survey, even though some employee welfare activities were constrained by the pandemic, and the expansion of Fab 5A caused inconveniences in terms of parking, transportation, and shuttle bus in 2022, the convenient measures taken by the Company in advance significantly mitigated the impact. Except for a few responses and recommendations when the measures were first implemented, the majority of employees expressed their approval towards the measures. The groundbreaking ceremony for the expansion of the new fab invited President Tsai Ing-wen and New Taipei City Mayor Hou You-yi, showing how seriously the Company takes its future planning. Senior managers also actively explain the Company's vision and plans via internal e-mail to achieve information transparency. The Company's overall performance was not impacted by the pandemic in 2022, and there were no pay cuts as well, which led to an increase in approval.

Average Approval Rate

2019		2020		2021		2022	
Male employees	Female employees	Male employees	Female employees	Male employees	Female employees	Male employees	Female employees
Individual work performance							
60%	71%	70%	65%	73%	73%	74.1%	72.3%
Engagement with line manager							
60%	73%	73%	67%	73%	70%	79.0%	73.8%
Understanding of corporate vision/culture							
65%	75%	74%	70%	78%	79%	82.9%	82.0%
Performance of the managed team							
63%	75%	74%	69%	74%	75%	76.6%	73.0%
Relationship with peers							
71%	81%	81%	76%	79%	79%	81.7%	80.6%
Satisfaction with promotion/compensation							
56%	65%	65%	59%	58%	56%	69.5%	68.6%
Rate of reaching average approval							
72%		71%		72%		76.2%	
Response rate							
91%		93%		93%		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.

Improvement and reinforcement measures in 2022

When the epidemic situation was most severe, the Company regularly distributed rapid test kits to all employees free of charge, so that employees will be prepared and prevent the spread of COVID-19.



We made plans to meet the regular demand on transportation and shuttle buses in response to the expansion of the new fab, and reduced the inconveniences brought by the construction to employees. We also increased shuttle buses between Danfeng Station and A8 Station to provide employees living in Taoyuan Linkou and Taipei Xinzhuzhuang and Taishan with a more convenient option for commuting to work



Communication group trainings for mid-level managers: Set up group trainings for mid-level managers to help them strengthen leadership and communication skills.



We continued to improve promotion and compensation measures in hopes of increasing employee approval in the aspects.



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 2022, the average salary of non-managerial full-time employees was NT\$1,581,000, a 8.88% increase compared to 2021. The median salary of non-managerial full-time employees was NT\$1,350,000.

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.

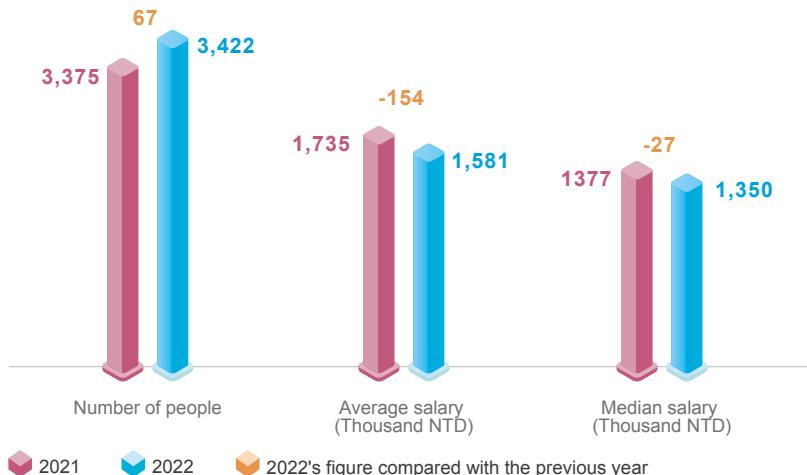


Year-end bonus, festive bonus, Dragon Boat Festival/Mid-autumn diligence bonus, grade bonus



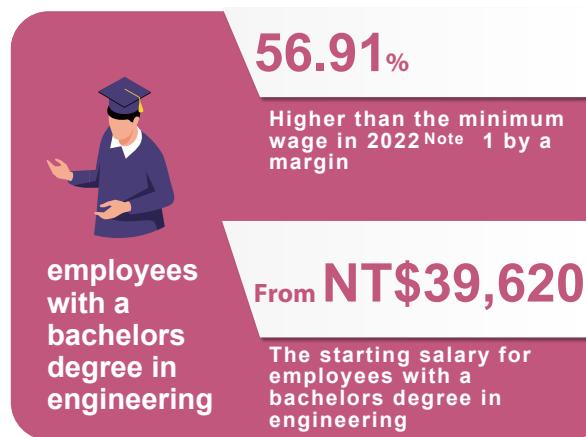
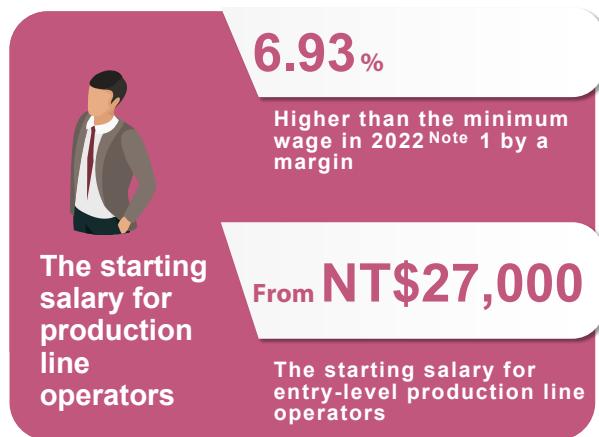
Long-term incentives: Include employee remuneration, employee stock option certificates, incentive bonus and annual salary adjustments

The salary of non-managerial full-time employees



The starting salary for male and female employees in Taiwan is the same. Female managers received slightly lower compensation on average than males in 2022. In terms of total salary package, females received 95.68% that of males on average; in terms of total salary plus remuneration, females received 95.28% 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 2022, female employees of non-managerial role received total salary package at 108.42% that of male counterparts on average, and remuneration at 111.43% 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.



Note 1: Minimum wage was adjusted to NT\$25,250 on January 1, 2022.

Ratio of average wages of male to female employees in Taiwan

	2019	2020	2021	2022
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	92.35%	93.72%	94.55%	95.68%
Female-to-male total salary + remuneration ratio of managerial roles	93.24%	94.91%	94.55%	95.28%
Female-to-male total salary ratio of non-managerial roles	109.02%	110.34%	108.71%	108.42%
Female-to-male total salary + remuneration ratio of non-managerial roles	113.15%	113.49%	111.47%	111.43%

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.



4-3 Talent Cultivation

► Comprehensive Talent Cultivation and Development

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 to improve the quality of Company employees, optimize the training system, offer diverse courses, systematically training employees to develop proper skills, knowledge and attitude, in order to accomplish the Company's annual strategic goals.

Goals

- 2023 Goals: Key talent as a percentage of all employees $\geq 5.7\%$; Internal employee substitution rate for job openings $\geq 65\%$.
- 2025 Goals: Key talent as a percentage of 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, on-the-job training management policy, 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 Together, We Learn, We Grow

As the impact of COVID-19 becomes normalized in the post-pandemic era, it has brought a wide range of changes. We continued to change the way we think and act under the impact of COVID-19 in 2022, and formulated the Talent Development Plan 2.0, building the resilience of our training system, and setting four missions for the talent pool development center, namely strengthen functions of the Talent Development Committee, expand the cultivation of leadership talent, incorporate information security training for advanced processes, and Third TTQS Gold Award Project. Continuing 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.] The framework consists of four talent development elements, including core competencies, organizational management, professional skills, and personal development.

Core competencies refer to the basic abilities that employees are required to have and cover new employee orientation, general competencies, and precision courses.

Organization management refers to influence ability that managers need to improve and covers the Successor Pioneer Program, elite talent cultivation, management trainee rising star plans, managerial competencies of managers, women's empowerment, and team consensus camp.

Professional skills refer to the professional abilities employees need to perform their duties and cover professional competencies, AI practices, technical papers, technical seminars/conferences for learning from others, and training activities for direct employees.

Individual development refers to employees' self-learning plans to develop their individual abilities, attainment of cultural literacy, Good Time to be a Girl, advanced lecturer training, on-the-job education, and cultural seminars.

A variety of training and development courses are executed according to the talent development and training system, which facilitate the dissemination of internal knowledge and creativity. Through internal trainings and the knowledge management system, employees are able to engage in online and offline learning, share and generate the needed skills, knowledge, courses, and information. External trainings, seminars, technical forums, and other learning resources continue to be provided to create a learning organization and improve the overall training result and resilience. We will continue to provide employees with better and more effective talent development plans, and constantly upgrade and improve our overall talent development and training system for comprehensive talent cultivation and development.

We Grow Grow together

Jointly make improvements and upgrade, work towards the same goals, and make the team better.



We Together Work together

Jointly use the right way, shared values, and teamwork to do the right things

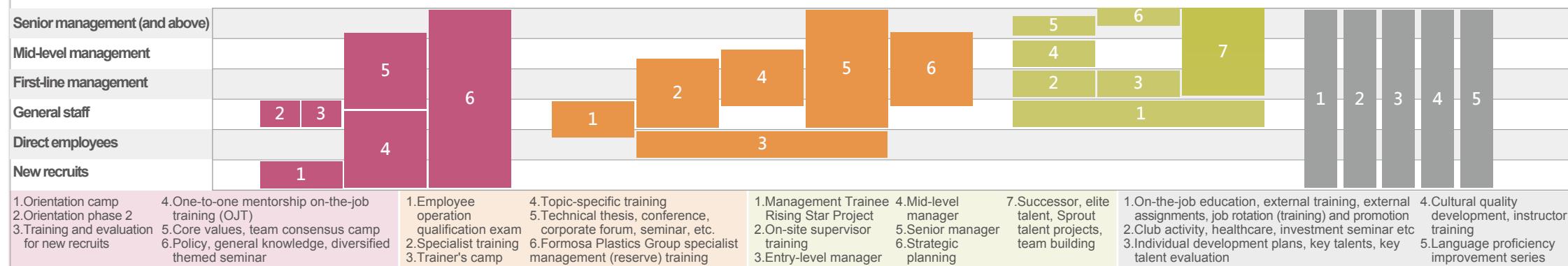
We Learn Learn together

Jointly gain knowledge and skills, and use different methods and processes to improve team and individual abilities.

"Co-learning Gathering – We Together, We Learn, We Grow" a framework with four talent development elements, including core competencies, organizational management, professional skills, and personal development, as described below:

Core competencies	Organizational management	Professional skill	Individual development
<p>► New employee orientation Allows employees (including interns/part-time employees) to quickly assimilate into the company organization and culture, successfully complete basic job training requirements, and better understand the company's environment and semiconductor industry. The complete high quality training sessions for new employees and rigorous on-the-job training courses include experiences and interactive learning, which shortens the learning curve. A total of 550 new employees were trained in 2022 to replenish personnel.</p> <p>► General knowledge precision courses In order to meet customer requirements on product quality, required professional courses of policies and positions are organized according to the Company's business development strategy, and training courses are also organized according to government regulations for labor safety, environment, and health. A total of 74,261 hours in training courses was offered in 2022.</p>	<p>► Management competence training We periodically organize training courses for managers at different levels to improve their management ability and performance. Comprehensive management competency training includes management competency, teamwork, strategy expertise, and diverse new knowledge. A total of 9,288 hours in manager training courses was offered in 2022. Grade 1 and grade 2 management reserves participate in advanced management workshops depending on their roles. These training courses are intended to improve leadership, decision-making and adaptation of management philosophy among management reserves.</p> <p>► Training of key talents We stepped up the cultivation of key talent and planned comprehensive development plans for elite talent, including talent review, competency analysis, training planning, and personal development. We also actively cultivated female managers under efforts to empower women, and completed the cultivation of 200 talents (male managers: 161; female managers: 39) as of 2022, achieving the goal for key talent to account for 5.5% of all employees in 2022.</p> <p>► Team consensus camp The Company's yearly strategy and team consensus are strengthened by the annual senior management strategy meetings and management team consensus camp. These effectively help with achieving the Company's goals. The team consensus camp aims to establish managers' organizational leadership vision and goals, and enable them to make changes through actions to further exert influence, pragmatically motivating cooperation of cross-department teams. A total of 6 batches were organized for 582 managers at all levels in 2022.</p>	<p>► Function-based specialized training We strengthened the system of each department for passing on specialized skills and to create a more active workplace. For departments to plan on-the-job training and more effectively integrate their core competencies, we established the Regulations for the Implementation of Structured On-the-Job Training (S-OJT), which lays out a clear planning process for S-OJT. We also prepared learning blueprints for each position (individual) to shorten the learning curve and improve training effectiveness. Completion of on-the-job training reached 100% in 2022.</p> <p>► Artificial intelligence practices We continued to implement the AI talent cultivation program, which provides internal training for specialized talent in AI, enhances the AI technical abilities of factory 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 2022, we cultivated 402 specialists in AI in factories.</p> <p>► Direct employee training We planned 3-year re-training courses for trainers and completed the re-training of 80 trainers in 2022; 71 employees took trainer qualification courses. We continued to provide direct employees with pre-job training on professional skills and machine operation skills, and periodically assess and certify employees based on their training performance and professional skills. 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 122 direct employees had completed their training and obtained the machine operation certificate during the year.</p>	<p>► Self-learning projects We provide diverse learning resources and channels, including sharing events on internal training, specialized courses, contests of learning scores in events, and workshops, in order to make employees more self-conscious and actively learn. We are developing a learning organization through promotion, sharing, customization, competition, and incentives, changing employees' attitude from "requiring me to learn" to "I want to learn". The self-learning development program provided 13,506 hours of training to 4,701 participants in 2022.</p> <p>► Advanced lecturer training The Company continued to improve the training program in place to train internal instructors for the purpose of transferring corporate knowledge and building training capacity. A total of 314 internal instructors obtained qualifications, and 9 were newly certified in 2022. Furthermore, the Company regularly organizes commendation events for outstanding lecturers every September with the support of senior managers, showing appreciation and encouraging the lecturers for their continued contribution to the Company's training and improving internal teaching quality. A total of 16 outstanding lecturers were selected for their excellent performance in 2022.</p> <p>► Employee individual development The Company formulates independent learning plans to continuously encourage employees' individual development, promote lifelong learning, and support career development among employees. Administrative resource and incentives are also offered in accordance with the Company's on-the-job training policy to encourage continuous learning. In 2022, a total of 735 people engaged in on-the-job degree programs, and the internal employee substitution rate for job openings was calculated at 85.9%.</p>

Talent Cultivation and Development Training System



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 managed, updated, accessed and shared more efficiently through a unified portal. The system currently holds 5,326 internal training materials and operational documents contributed by various departments, up 69% compared with the previous year.



Manager team consensus camp – Building team consensus



Co-learning Gathering – Awards ceremony for excellent lecturers

Talent Cultivation and Development Results

We continued to organize talent development and training activities in 2022 despite the impact of COVID-19, and training indicators thus remained stable with execution rate of annual training at 178.5%. Average training hours per employee reached a record high 42.8 hours, the highest over the past four years. Talent development and training results and indicators are described below:

2022 Employee Training Data by Age

Female			Male			Total
Under 30	30–50 years old	Over 50	Under 30	30–50 years old	Over 50	
Number of employees						
174	748	93	635	1,736	299	3,685
Person-hours of training						
11,392	21,490	1,504	42,586	73,496	7,252	157,720
Average training hours per person						
65.5	28.7	16.2	67.1	42.3	24.3	42.8
Training expense (NTD)						
243,879	1,815,058	182,001	845,490	4,765,598	1,752,365	9,604,391
Average training expense per person (NTD)						
1,402	2,427	1,957	1,331	2,745	5,861	2,606

2022 Management Training Data by Level

Female			Male			Total
Entry-level manager	Mid-level manager	Senior manager	Entry-level manager	Mid-level manager	Senior manager	
Number of managers						
95	27	3	7	164	67	363
Person-hours of training						
1,486	1,122	58	109	6,817	1,292	10,884
Average training hours per person						
16	42	19	16	42	19	30
Training expense (NTD)						
190,186	521,247	49,967	14,014	3,166,093	1,115,933	5,057,440
Average training expense per person (NTD)						
2,002	19,305	16,656	2,002	19,305	16,656	13,932

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 (factory directors, directors, and above)

Average Employee Training Time by Category

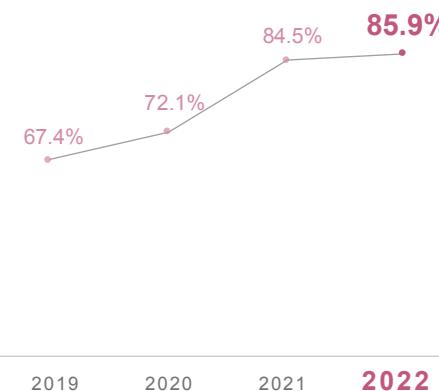
2019		2020		2021		2022	
Female	Male	Female	Male	Female	Male	Female	Male
Managerial role							
22.8	22.8	33.5	29.3	20.0	22.5	28	22
Professional technology							
30.6	31.7	26.7	26.9	40.8	41.0	40	23
Core administration							
57.5	55.9	52.2	50.8	72.5	70.6	92	73
Direct employees							
14.8	14.5	27.7	27.2	19.3	18.0	23	21

Total hours

7,577	9,067	7,855	9,288
55,213	54,400	84,061	80,507
35,315	33,529	46,966	57,216
8,781	14,239	9,004	10,708



Employee substitution rate



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

Statistics on the number of internal employee substitution for job openings in 2022

	Female	Male	Total
Age group			
Under 30	3	9	12
30-50 years old	24	62	86
Over 50	1	17	18
Job Level			
Management level (A+B+C)	2	4	6
Senior manager (A)	0	1	1
Mid-level manager (B)	2	3	5
Entry-level manager (C)	0	0	0
Non-management level	26	84	110

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.

Item	KPI-2022 Goals		2022 Achievements	KPI-2023 Goals		Item	2019	2020	2021	2022	2022Goals	points(10-point scale)
L5 (Return on Investment)												
• Human capital rate of return	• Human capital rate of return ≥ 12.5 (According to company goal of the year)	• Human capital rate of return 10.0	• Human capital rate of return ≥ 12.5 (According to company goal of the year)	Human capital rate of return ^{Note 1}	11.9	12.8	16.7	10	>12.5	8		
L4 (Results Evaluation)												
• Employee promotion rate	• Employee promotion rate $\geq 16\%$	• Employee promotion rate 15.58%	• Employee promotion rate $\geq 16\%$	Employee promotion rate (%)	16.13	16.81	16.64	15.58	>16	9.7		
• Employee substitution rate	• Employee substitution rate $\geq 62\%$	• Employee substitution rate 85.9%	• Employee substitution rate $\geq 65\%$	Promotion rate of employees with <3 years of service (%)	4.35	4.11	5.59	5.16	-	-		
• Retention rate of key talents	• Key talent retention rate $\geq 98\%$	• Key talent retention rate 99.5%	• Key talent retention rate $\geq 98\%$	Promotion rate of employees with ≥ 3 years service (%)	11.77	12.7	11.05	10.43	-	-		
• Result publication (patent count, national award)	• Result publication (no. of patents proposed ≥ 350)	• Result publication (no. of patents proposed: 812)	• Result publication (no. of patents proposed ≥ 350)	Voluntary turnover rate (%)	6.27	5.01	7.26	8.8	<6	5.3		
• Productivity, sales value (volume)	• No. of improvement proposals ≥ 120	• No. of improvement proposals: 224	• No. of improvement proposals ≥ 120	Turnover rate of key talents ^{Note 3} (%)	0	0	0	0.005	<10	10		
• Improvement proposal				Turnover rate of new employees ^{Note 4} (%)	15.25	7.47	9.4	14.99	<12	7.5		
L3 (Behavioral Evaluation)												
• Results of Customer Satisfaction Survey	• Customer satisfaction score ≥ 91	• Customer satisfaction score 94.7	• Customer satisfaction score ≥ 91	Customer satisfaction (score)	91.8	93.7	93.8	94.7	>91	10		
• Project achieving rate	• Project achieving rate 90%	• Project achieving rate 94%	• Project achieving rate 91%	Skill enhancement accomplishment rate (%)	100	100	100	100	100	10		
L2 (Learning Evaluation)												
• Test/rehearsal Written report	• Course pass rate $\geq 94\%$	• Course pass rate 94.5%	• Course pass rate $\geq 94\%$	Course pass rate (%)	92.5	93.4	94.7	94.5	>94	10		
• Operational certification	• Total annual plan accomplishment rate: 100%	• Total annual plan accomplishment rate: 100%	• Total annual plan accomplishment rate: 100%	Total annual plan accomplishment rate (%)	100	100	100	100	>100	10		
L1(Reaction Evaluation)												
• Post-course satisfaction	• Post-course satisfaction score ≥ 4.5	• Post-course satisfaction score: 4.61	• Post-course satisfaction score ≥ 4.5	Satisfaction (5-point scale)	4.55	4.64	4.59	4.61	>4.5	10		
• Closing report												

Note 1: Human capital rate of return = (Operating revenue - (Operating expenses - Labor costs))/Labor costs

Note 2: Return on personnel training investments = ((Net profit from training projects - Cost of training projects)/Cost of training projects)*100%

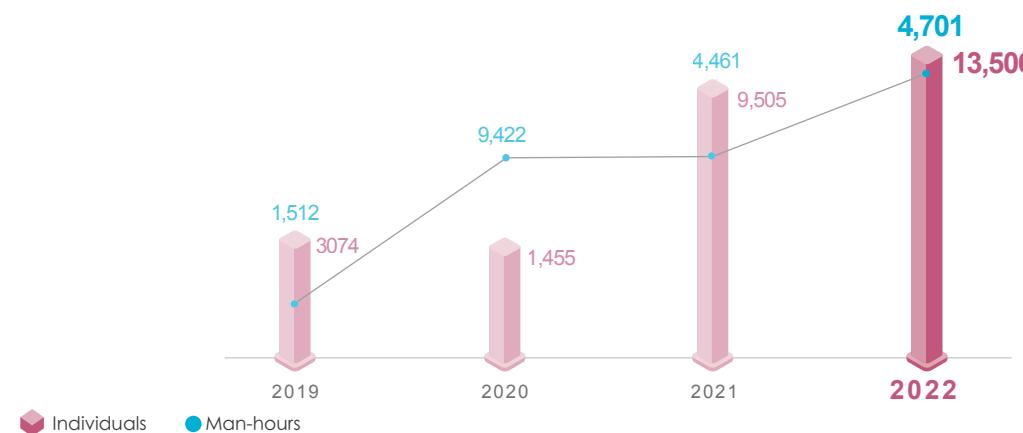
Note 3: Key talent – Talent in key positions that are necessary for executing the Company's business strategies and hard to replace.

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

► Experience sharing: Self-learning

The employee self-learning program that began in 2019 planned "self-learning master," "learning master academy," and "iCan · iMaker" self-learning courses. The 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, and for it to directly reflect on our business performance. Results of the past four years are as follows (The scope of self-learning was expanded to three categories in 2021).

Self-learning results



► Important Talent Development Programs

"People" are considered as the most important assets of Nanya Technology Corporation. Employees are the foundation of a company's innovation, operations, and sustainable development. Employees are key to maintaining corporate sustainability and innovative R&D, driving the Company's growth, and achieving sustainable development. We continued to implement the comprehensive talent cultivation and development plan [Co-learning Gathering] to cultivate comprehensive professional technical talent. In 2022, we continued the theme of learn together and implemented the talent cultivation action plan [We Together, We Learn, We Grow], which stepped up the cultivation and development of comprehensive talent, 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:

2022 DRAM Smart Manufacturing Leadership Project		Employee participation rate (As a percentage of all employees) 90%
Training topic		
1.Align smart technology with smart manufacturing development trends	3.Artificial intelligence practices on-the-job course	
2.Key technologies and application issues of smart manufacturing	4.Industry-academia collaboration in AI modeling	
Importance of the project to the Company's operations		
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	Enhancing efficiency: 1.Accumulated amount from improving the efficiency of machinery transfer reached NT\$1.16 million 2.Manpower saved from automatic dispatching reached NT\$2.9 million/year 3.Cost reduced by independently developing software reached NT\$103.2 million	
Case :		
Increasing production efficiency through automation:		
1.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.		
2.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.		
Output volume		
Contributed to the sales of 121.8M special products		
• L5 Return on investment	Financial value:NT\$94.08 million(ROI:1032%)	

2022 Advanced Process Proprietary Technology Development Project		Employee participation rate (As a percentage of all employees) 54%
Training topic		
1.Emerging transistors and memories	3.Advanced Process Key Yield Improvement Plan	
2.New transistor process and advanced development technologies	4.New structures and new processes of contact resistance	
Importance of the project to the Company's operations		
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	Enhancing efficiency: A total of 12 product R&D/validation tasks were completed; 109 productivity proposals and 228 improvement proposals were raised.	
Case:		
Next generation process component development		
1.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.		
2.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.		
Development yield: Successfully independently developed technology with record 65% YA		
Results presentation:Process product development items completed: 28 items (182 items in total)		
Financial value: Financial value is expected to increase by NT\$405 million when production begins		



2021 MCP technology development and sales

Training topic

- 1. Market demand analysis and development
- 2. Customer technology exchanges and services
- 3. Engineering technical support ability
- 4. Product production management

Importance of the project to the Company's operations

Goal: Nanya Technology Corporation 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 Skill improvement

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

Case:

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 1. Multi-chip products contributed NT\$2.8 billion to revenue
 and results : 2. Multi-chip product shipment of 30.7M was the second highest in the world
 3. The EVA of multi-chip products increased 10% (NT\$280 million)
 4. Saved NT\$38.8 million in machinery testing expenses

- L5 Return on investment

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



2021 Complete organizational management talent training plans

Training topic

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

Importance of the project to the Company's operations

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 Skill improvement

Employee behavior: 1. Project achieving rate 96.5%
 2. 360 evaluation approval rating: 4.5 points (5-point scale)

Case:

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

Results presentation:

1. Employee retention rate: 95.5%
2. Key talent retention rate 100%
3. 38 productivity improvement proposals raised
4. No. of improvement proposals: 214

- L5 Return on investment

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

2022 Development and Sales of Application-specific DRAM Products

Employee participation rate (As a percentage of all employees) 85%

Training topic

- 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

Importance of the project to the Company's operations

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
Post-course satisfaction score: 4.66
- L2 Course pass rate
Training course pass rate: 95.8%
- L3 Skill improvement
Project achieving rate 90.5%
- L4 Productivity
Enhancing 1. A total of 12 product R&D/validation tasks were completed; 109 productivity proposals and efficiency: 228 improvement proposals were raised.

Case :
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.

Output volume
Sales of non-standard products > 135M pieces

- L4 Performance
Results presentation: Patent count: 438
- L5 Return on investment
Financial value: NT\$96.67 million(ROI:1316%)

2022 AI and smart manufacturing training program

Employee participation rate (As a percentage of all employees) 71%

Training topic

- 1. Bring together field experts, information specialists, and statistics specialists to jointly develop AI applications
- 2. Form a technical research team and launch basic/advanced technical practices and standards
- 3. Training and expansion for practical project application and development
- 4. Establish an AI community and relevant knowledge documents

Importance of the project to the Company's operations

The program established an AI-assisted high-performance production line, improved the efficiency of wafer inspections and yield analysis, enhanced process control and optimal condition prediction, elevated productivity and machine efficiency, and increased the main scenarios in which the machinery prognosis system can be applied. It helped the Company to reach a new milestone in smart manufacturing.

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

- L1 Post-course satisfaction
Employee response: Post-course satisfaction score: 4.65
- L2 Course pass rate
Employee learning: Training course pass rate: 99.25%
- L3 Project achieving rate
Employee behavior: SOJT completion rate 100%
- L4 Technical projects
Enhancing Technical projects: Basic theoretical studies, including 22 machine learning algorithms, 11 efficiency: deep learning algorithms, and 7 project research topics were completed.
- L4 Productivity
Enhancing 38 AI projects were completed as enhancements for smart manufacturing production efficiency: technologies: 21 applied deep learning models, 10 applied machine learning models, and 7 applied mathematical rules

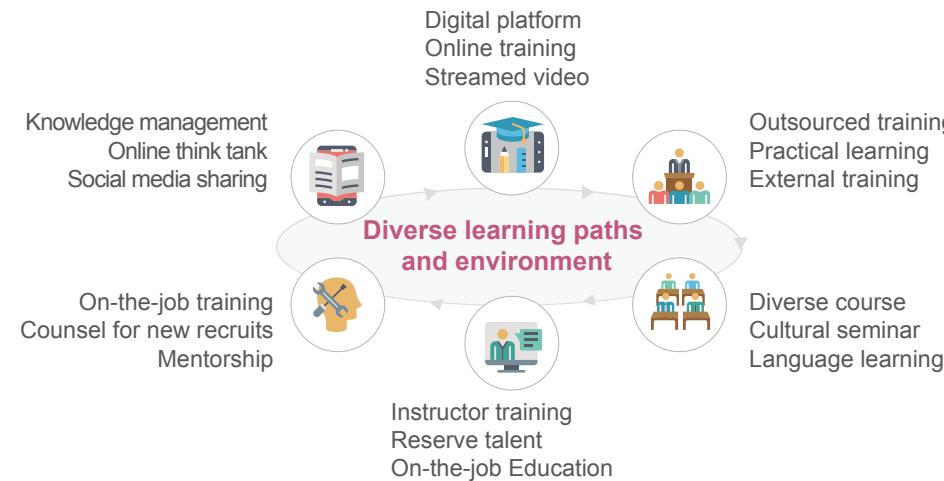
Benefits:
1. Labor costs: NT\$14 million
2. Contribution to revenue: NT\$176 million

3. Potential benefit of productivity: NT\$50 million

- L5 Return on investment
Financial value: NT\$2.4 million(ROI:56%)
- L4 Productivity
Enhancing efficiency:
A total of 239 product R&D/validation enhancement/advanced procedure adoption/productivity improvement tasks were completed, and 51 improvement proposals were raised.
- L5 Return on investment
Financial value: NT\$20.45 million(ROI:783%)

Diverse learning paths and environment

The Company planned complete and diverse learning channels and environments aligned with its talent development philosophy for talent cultivation. The Company advocates life-long learning and assisting employees with their individual development plans, in order to achieve comprehensive learning and development of employees.



E-learning audio visual center

In the audiovisual center of the Company's internal training and development center, we provided a total of 200 digital courses in the e-learning environment as of 2022, and online training and reading hours reached 73,317 hours, growing by 7.9 hours.



Language learning subsidy

The Company provides employees with a "Comprehensive Language Proficiency Improvement Plan" that includes language seminars, on-site TOEIC courses, on-site TOEIC exams, online language courses, and external language courses. The Company also has a "TOEIC Exam Simulation System" set up for employees to practice for the TOEIC exam and take TOEIC simulation exams. The Company set TOEIC goals linked to job positions and its promotion system. A total of 2,221 people registered their TOEIC score in 2022, an increase of 10.9%.

Diverse OJT and learning channels



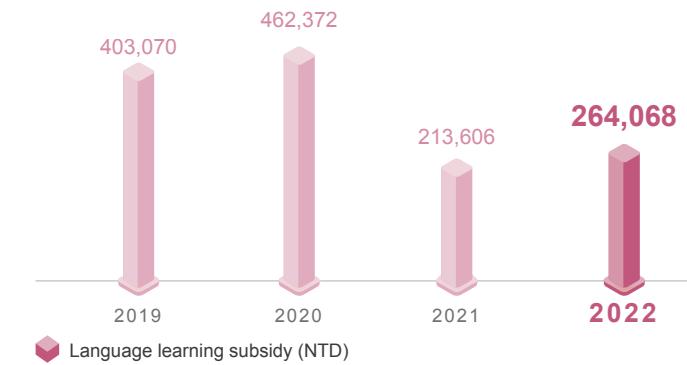
On-the-job degree programs

The Company continues to encourage employees' personal development. In addition to continuing industry-academia collaboration and technology development projects, the Company continues to provide subsidies, incentives, and assistance through its on-the-job training policy to encourage employees' participation in tertiary education. To date, a total of 735 employees have attained a new degree through on-the-job education programs, including 201 associate degrees, 391 bachelor degrees, and 143 master's and doctoral degrees, increasing by 1.2%.



Participation in external training courses

The Company encourages employees to enhance their professional competencies and obtain certifications related to their jobs by encouraging employees to participate in external training courses aligned with their personal development. The Company has expanded product development to continue to increase product value. A total of 137 employees participated in 2,045 hours of external training in 2022, up 25.7%.

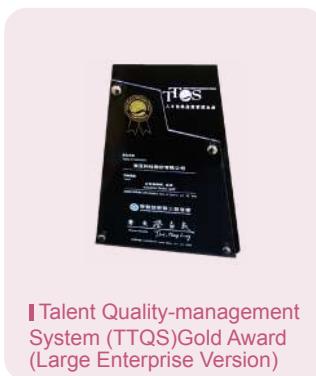


Accumulated number of people enrolled in on-the-job degree programs (persons)
No. of participants in external training (persons)

Note: Due to the addition of some internal training courses, the total hours of online courses in 2021 was updated from 65,050 hours to 67,951 hours.

▶ Recognition for Talent Cultivation and Development

Nanya continues to adjust its course structures in line with corporate strategies and goals, and takes step to improve the effectiveness, yield and output of its training efforts. In addition to periodically auditing, analyzing, and tracking training quality, the Company participated in the Talent Quality-management System (TTQS) certification program of the Workforce Development Agency, Ministry of Labor in 2022, which covers training plans, design, implementation, inspection, and results. Nanya Technology Corporation stood out from the many contestants to win the Gold Award for Large Enterprises for the third time. Motivated by the recognition for the Company's training and talent development efforts, the Company will be participating in the People Development Leader Award Category of the 2023 Taiwan Corporate Sustainability Award (TCSA) to continue upgrading the Company's talent development philosophy.

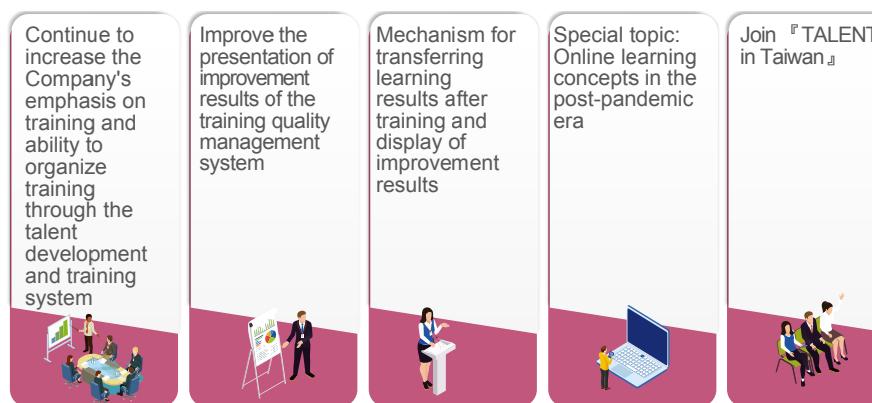


■ Talent Quality-management System (TTQS)Gold Award (Large Enterprise Version)

▶ Experience sharing

The Company upholds the spirit of continual improvement in talent development, and continues to participate in the TTQS evaluation conducted by the Ministry of Labor, in order to constantly improve

the Company's talent development measures. This is the third consecutive time the Company has won the highest award – the Gold Award (Large Enterprise Version). Highlights of the evaluation are as follows:



▶ 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 26% in 2022. 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

Multi-dimensional 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
Frequency: yearly
Evaluation method
<ul style="list-style-type: none"> • 180-degree performance evaluation: 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-degree performance evaluation: Feedback from subordinates on the subject's managerial skills is referenced.
Management by objectives
Subjects: Department managers/project managers/Section manager/project manager/Team leader/Shift leader/engineer/manager/Administrative, Technical, Business assistant
Frequency: quarterly
Evaluation method
First conduct self-assessment of colleagues, explain the work and their own views. Afterwards, the immediate supervisor evaluates the work performance of the subordinates, and gives encouragement and suggestions for improvement and assistance to the employees.
Agile conversations
Subjects: Team members
Frequency: quarterly
Evaluation method
Project evaluation is divided into top-to-bottom evaluation and peer evaluation.
<ul style="list-style-type: none"> • Top to Bottom: The supervisor evaluates the performance of subordinates. • Peer evaluation: Peer evaluations in each project to understand whether the two parties have a consensus on teamwork and communication performance.
Team-based performance appraisal
Subjects: Direct employee and immediate supervisor
Frequency: monthly
Evaluation method
The supervisor will conduct evaluations based on individual teamwork, cooperation, learning ability and other items.

▶ 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. Our role and methods

Outstanding

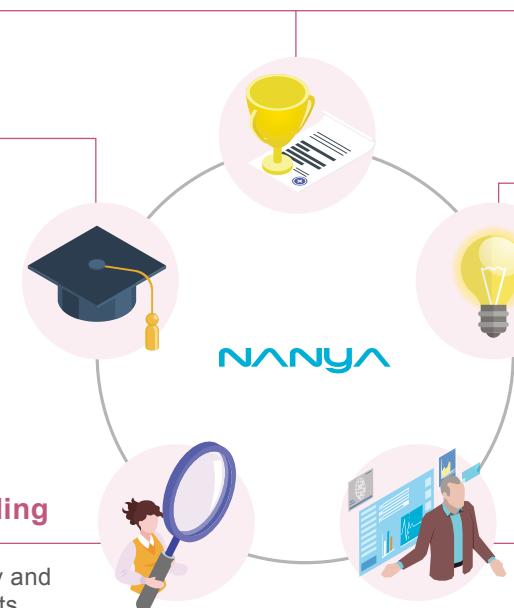
To promote exchanges between the industry and academia and make good use of academic resources, we cooperate with well-known colleges on industry-academia research plans and sponsor campus activities, forming a strategic partnership. We also help colleges strengthen teacher-student interactions to improve the quality of education and enhance the competitiveness of domestic industries.

Cultivate

We have focused on campuses and two-way cultivation to develop internships that better meet industry needs, creating a well-rounded internship that effectively improves students' employability, and providing them with an internship platform. Interns learn cross-departmental communication and collaboration in the process and also show their professional talents. The internship aligns students with the industry's professional requirements, instills them with the right values and strengthens their abilities in the workplace, gives them the concept and ability of practical use, allows them to experience the workplace sooner, and encourages them to develop abilities in diverse aspects, preparing professional talent from an earlier stage.

Understanding

These projects aim to cultivate students well-versed in both theory and practice, improve students' understanding of industry developments, increase their engagement and sense of belonging, and give them the opportunity to come in close contact with companies. Students understand the semiconductor industry through on-site visits and company exchanges, and the work experience shared by their seniors help students determine their further career path. We focus on cultivating students in the field of semiconductors, and encourage students to join the family of Nanya through exposure from promotional materials on campus and the connection between events.



Future

To recruit outstanding talent and strengthen advanced R&D capabilities, we established several scholarships to encourage students to engage in academic research, make constant improvements, and put their education to use. We hope that outstanding students will continue to study in their field of interest, and enhance the semiconductor industry's competitiveness.

Speech

We organize a variety of seminars or programs on campus to strengthen the connection between what students learn in school and the workplace, interacting and sharing with students face-to-face. Lecturers from industry, government, and academia who are experts on semiconductors close the gap between education and employment, and jointly create an industry course that meets workplace requirements. Basic courses are taught by school teachers in related fields, and lay the theoretical foundation of technologies for students. Core practical courses are taught by semiconductor supervisors of Nanya, and systematically pass on their practical experience to students, which closely combines theory with practice, and they use an easy-to-understand teaching method to give students new perspectives of semiconductors.

► Major results in 2022

Future



We provided scholarships to 22 students and provided a total of approximately **NT\$6.21 million** in Future Stars scholarships to 26 students (including qualification award).

Outstanding



We cooperated with **5** universities on **14** industry-academia research plans, and the invested amount totaled **NT\$11.81 million**. The Company sponsored 4 campus activities with a total of **NT\$980,000**.

Cultivate



We cooperated with **12** colleges on the internship programs. A total of **228** interns worked at the plant, including 70 indirect and **158** direct staff members.

Understanding



A total of **14** corporate visits were held with about **613** teachers and students participants.

Speech



As industry experts, they shared their experience with key schools in northern Taiwan during **36** seminars and with a total of **2,931** attendees in 2022.

► Our footprints

Future Stars

- We organize Future Stars Scholarship activities to cultivate elite talent in the semiconductor field, encourage outstanding students to concentrate on related academic research and innovative technologies, and help young college students pursue their ideals and goals for the future. Online registration is open every October, and a total of NT\$610,000 in scholarships is provided to three divisions – Ph.D, master's, and bachelors. A total of 26 students qualified and 9 received scholarships in 2022.
- We implemented an internship scholarship system to help students successfully find a job after graduation. After students complete their internship, outstanding students will be awarded a scholarship and become employees of Nanya Technology Corporation after graduation. The internship is for a full academic year, and we provided a total of NT\$4.73 million in scholarships to 22 students in 2022.
- We sponsored three PhD students of National Taiwan University with scholarships to strengthen forward-looking R&D capability and carry out the development of next generation memory and advanced memory. This program provided a total of NT\$860,000 in scholarships to 3 Ph.D students of National Taiwan University to encourage outstanding students studying in semiconductor-related departments in 2022.



► Photos of Future Stars



Outstanding Projects

- We cooperated with universities in 5 industry-academia research projects on semiconductor applications and technologies, as well as product design and development, and periodically discuss research directions and results to jointly set research goals. These universities included National Taiwan University, National Tsing Hua University, National Taiwan University of Science and Technology, National Central University, and Ming Chi University.
- We sponsor domestic institutions that actively carry out academic research on semiconductors and make concrete contributions, including Chang Gung University College of Engineering, NTU System-on-Chip Center, NTUEE Camp, and the celebration of the anniversary of NTU Graduate Institute of Electronics Engineering.



Cultivate

- We cooperated with 12 colleges on the internship programs in 2022, and established a complete internship system to effectively enhance the employability of students; a total of 111 interns were recruited.
- We successfully retained 1 intern to continue working at their internship units as a full-time employees in 2022. Moreover, we matched 7 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.



INTU IC Camp



NTUEE Camp



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.
- We planned industry visits for students in coordination with the Intelligent Electronics Talent Application and Development Program of the Industrial Development Bureau, which helps students gain an in-depth understanding of industry development and practical application trends. This will bring talent into the industry, and the guided tours will improve the Company's brand image.
- We assisted in the workplace experience of Taipei Youth Career Development Center Taipei Youth Salon , and gave students an opportunity to go deep into Nanya Technology Corporation through on-site visits and enterprise exchanges interaction, so that young students will be able to thoroughly consider the future direction of their career, prepared employment skills, and thereby promote youth employment.



Speech

- Seminars with industry experts are held in 8 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.



Chang Gung University Integration Introduction to IC Process Integration



Youth Career Development Center

4-4 A Happy and 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 Technology Corporation received the Ministry of Labor Work-Life Balance Award Employee Care Award for its complete EAP.



Nanya
Technology
Corporation
happy
enterprise
video



Wellness

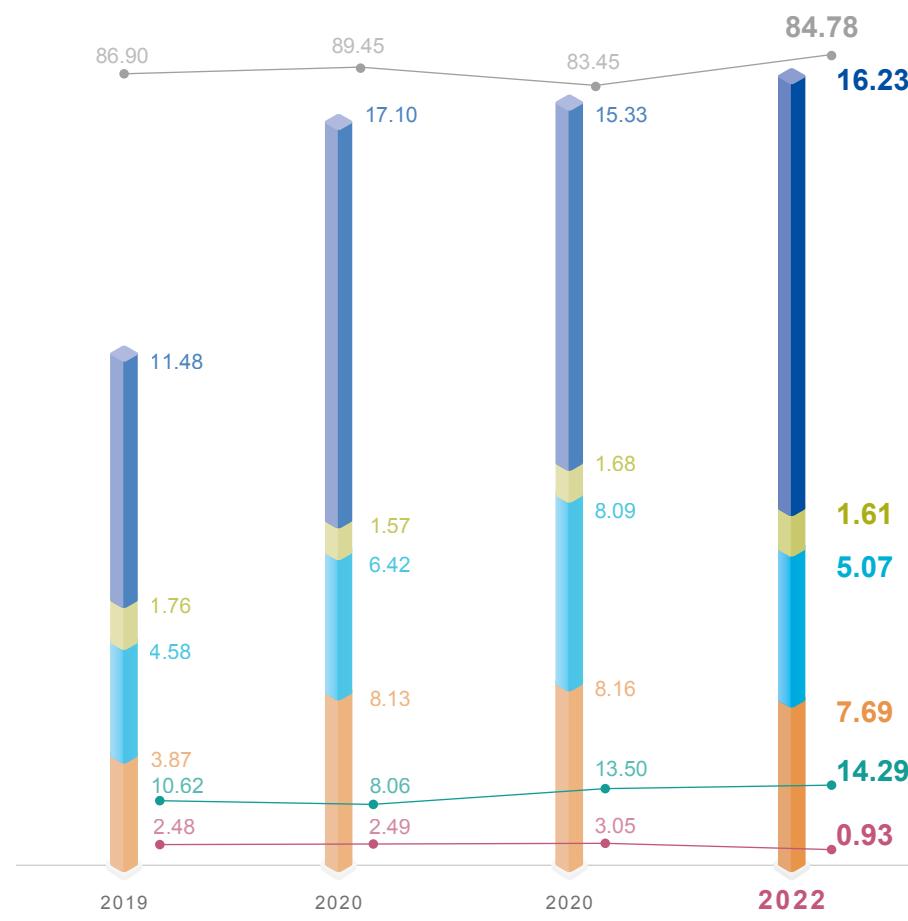


The Company collaborates with professional medical team from Chang Gung Hospital to provide annual health check service for employees. A total of 1,184 employees had completed their health checks in 2022, for which the Company incurred total expenses of NT\$1,734,802 in expenses. Employees who exhibit abnormal health check results are tracked on an ongoing basis and subjected to health management. All of our factories have a medical room with a physician stationed on site to provide employees with professional medical and consultation services. Seminars on spirituality and health and healthcare courses are arranged each quarter to meet employees' need for knowledge on physical and mental health.

The Company offers regular employee health check services that are more favorable than what the laws require, and the health checkup also includes cancer screenings for α-Fetoprotein, carcinoembryonic antigen and oral cancer and waistline monitoring. Employees who exhibit abnormal health conditions (such as liver function, blood sugar, metabolic syndrome, cerebrovascular disease etc) are identified based on the health check results, and the Company provides them with healthcare information, suggestions and follow-up tracking.

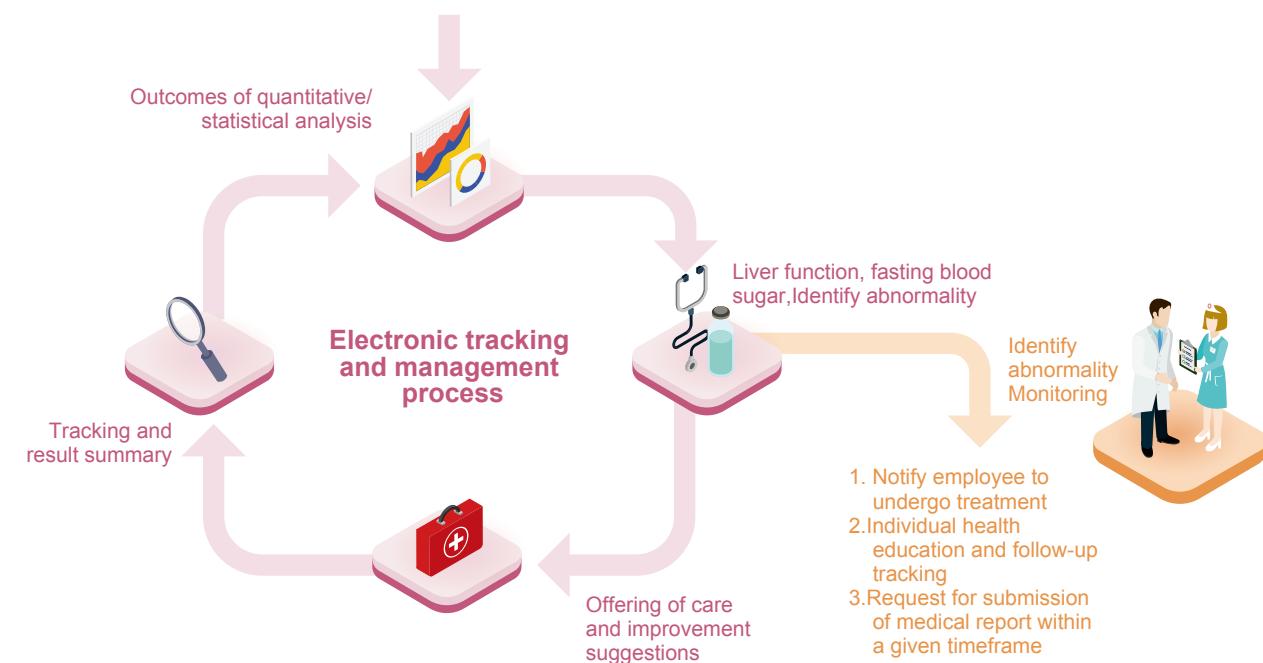
Abnormal blood pressure	Abnormal liver function	Abnormal blood sugar level	Metabolic syndrome	Low risk	Moderate risk	High risk	Total employees checked for the year
3.87%	4.58%	1.76%	11.48%	86.90%	10.62%	2.48%	1,420
8.13%	6.42%	1.57%	17.10%	89.45%	8.06%	2.49%	1,526
8.16%	8.09%	1.68%	15.33%	83.45%	13.50%	3.05%	1,311
7.69%	5.07%	1.61%	16.23%	84.78%	14.29%	0.93%	1,184
Total							5,441

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.

Electronic tracking and management process



In addition to arranging health check for employees, the Company also has a Health Center available to provide services such as preliminary treatment of injuries, 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.

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 2022, a total of 411 employees participated, and their weight loss totaled 931.8 kg; there was a total of 1,671 participants over the past four years and weight loss totaled 4,206.2 kg.

Response to epidemic disease

The Company has assembled an Epidemic Response Team based on recommended practices for SARS and avian influenza to facilitate quick response in the outbreak of epidemic disease, such as influenza virus. Response measures are being devised and conveyed to employees on an ongoing basis. At the end of 2019, when sporadic COVID-19 cases emerged, the Company immediately put the Epidemic Response Team into action, conducting work allocation and drills for various tasks. For example, when any infection cases occur, investigations based on the activity histories of the infected people issued by the Central Epidemic Command Center are immediately initiated, then results are reported back to the Company's Epidemic Response Team in order to promptly set up lists of those going on quarantine leaves or self-health monitoring periods. If necessary, further disinfection and cleaning for the surrounding environment is carried out.

The Company's epidemic prevention and response work focuses on the following ten areas: epidemic prevention and control measures, preparation of epidemic-prevention supplies, tracking of atypical cases, personnel health assistance, attendance management, control measures for guests and manufacturer personnel, subsidiary management, compliance with laws and regulations, business operation, and supply chain. With a cautious and prepared attitude, we hope to take preemptive and preventive actions. We have been making every effort to reduce the risks of infection in all of the Company's operations with a diligent attitude and preparedness.



Epidemic prevention propaganda

- Influenza virus response measures are announced internally
- Large posters are placed throughout plant premise to convey the importance of epidemic prevention and test employee understanding.
- Distribution of health self-management notice and rules.



Epidemic prevention measures

- Reporting, containment and epidemic prevention leave.
- Restricting business travels and business errands, as well as number of people in meeting rooms.
- Epidemic prevention for contractors and visitors



How to exercise for weight loss and health



Dynamic aerobics course



2022 Weight loss activity for public welfare



Nanya held 2 blood donations in 2022. The event received a total of 226 blood donation visits, and 367 bags of blood were donated.



2022 Health promotion activities – Bone density inspection





| 2022 Health promotion activities – Healthcare for women



| 2022 Health promotion seminar – Sleep disorder Number of participants: 75 people



| 2022 Health promotion activities – Quit smoking Number of participants: 24 people



| 2022 Employee medical check-up 1223 people (including annual: 1,184 people, non-annual at self expense: 32 people, catering staff: 7 people)



| 2022 Health promotion activities – Flu vaccination Number of participants: 223 people



| 2022 Health promotion seminar – Newborn parenting seminar Number of participants: 33 people

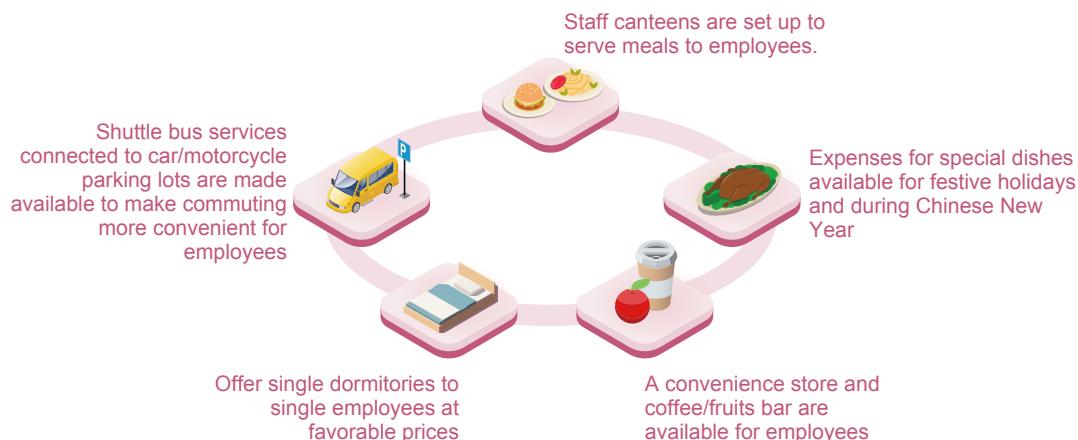
Assistance



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 whom is appointed by the Company whereas the other 8 are elected by employees from different departments. The Employee Welfare Committee received approximately NT\$40 million in funding in 2022; the majority of which was spent on incentive trips, festive gifts, birthday vouchers, children's scholarship, group insurance, entertainment, and childbirth and hospitalization subsidies. As the COVID-19 pandemic subsided in 2022, the Employee Welfare Committee organized Family Day and Baseball Day activities with a total of 6,560 participants.

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 that start at 6:10 and end at 21:15, 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



After the pandemic subsided, employees enthusiastically participated in employee trips, and invited their family and colleagues to go together. A total of 3,193 employees signed up for employee trips in 2022 with participation reaching 91%.



Coffee/fruit bar



Clean single dormitory



Convenience store



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. By using systematic methods to prevent and help with employees' problems, we stabilize employees' work quality as well as physical and mental well-being.

Consultation services for new employees to adapt to new workplaces

Results of Teacher Chang Foundation's Counseling Service

- Used **67** times
- 93.0%** utilization
- Satisfaction with counseling : **4.86**
(5-point scale)
- Solving problems: **8.80**
(10-point scale)

Mental Health and Stress Relief Seminars

- 3** Mental health seminars
- 156** participants
- Satisfaction **4.51**

親子關係別因3C慘CC

講師:「張老師」基金會
李文倫 心理師
時間: 11/22 14:00~16:00
地點: HQ 1F 電影室

藝術減壓訓練～植物的療癒力

講師:「張老師」基金會
辛宜婷 諸商麟
時間: 8/31 14:00~16:00
地點: HQ 1F 電影室

**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 2022, a total of 327 employees (91 female and 236 male) were entitled to take unpaid parental leave, and a total of 32 people (23 female and 9 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\$7,748,000 was provided in subsidies to 535 employees in 2022.

Application for unpaid parental leave and reinstatement rate in Taiwan

2020			2021			2022		
Female	Male	Total	Female	Male	Total	Female	Male	Total
No. of employees entitled to unpaid parental leave								
112	252	364	101	244	345	91	236	327
No. of employees applied for unpaid parental leave								
19	4	23	19	5	24	23	9	32
No. of people due for reinstatement in the current year (A)								
7	3	10	10	5	15	12	5	17
No. of people applied for reinstatement in the current year: (B)								
6	2	8	7	3	10	9	5	14
No. of employees still on the job 12 months after reinstatement								
5	0	5	5	2	7	5	3	8
Reinstatement rate % (B/A)								
85.71%	66.67%	80.00%	70.00%	60.00%	66.67%	75.00%	100.00%	82.35%
Retention rate %								
100.00%	0.00%	83.33%	83.33%	100.00%	87.50%	71.43%	100.00%	80.00%

Note1: "No. of people due for reinstatement in the current year": does not include employees who applied to extend their unpaid leave during the year.

Note2: "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.

Note3: "Retention rate" refers to the percentage of employees reinstated from unpaid parental leave who continued to work for one year and above.



Priority Parking Lots for Pregnant Employees



Nursery Room

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

40,702 participants

Number of visits to the sports and recreation center in 2022

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



Encouragement of sport activities

Nanya Technology Corporation 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. These sports promotion measures allowed Nanya Technology Corporation to be recognized with the Sports Enterprise Certification by the Sports Administration, Ministry of Education for the second time in 2022, showing that the Company has gained external recognition for its efforts in sports promotion.



The 2022 Sports Festival Event consisted of 7 departmental teams, with more than 300 participants.



Nanya Technology Corporation was recognized with the Sports Enterprise Certification by the Sports Administration, Ministry of Education for the second time

Diverse club activities

The Company has a total of 24 clubs with diverse themes, including parenting, jogging, basketball, table tennis, badminton, slow pitch and hiking. More than 1,067 employees participated in the above club activities in 2022. The Company also encourages the clubs to hold annual recruitment events to increase staff participation and work-life balance.



Board games club uses time after work for employees to play board games together and build relationships.



Badminton club uses LOHAS club to organize a badminton tournament that will train the body and mind of employees.



After the pandemic subsided, the volleyball club participated in Hwa Ya Technology Park's friendly match, during which employees met new friends and released stress.

Employee Human Rights Protection

Nanya Technology Corporation places great emphasis on employees rights and has established a 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 has made a commitment to not hire child labor under the age of 16 years old, and has never hired child labor. To protect the rights of employees and employer, employees will receive an acceptance notice before they officially report for duty, and an employment contract is signed between the Company and new employees when new employees report for duty. All employees have signed an employment contract and are fully protected. All employees have been hired with employment terms established under the free will, consent and consensus of both parties; no employee was forced or coerced to perform work activities unwillingly. In addition, there were no anti-discrimination incidents in 2022. "2022 Policy and Code of Conduct Training," "2022 Unsafe Workplace Behavior and Prevention Training," and "2022 Personal Data Protection Training" are some of the training courses related to human rights policies and procedures in 2022. 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 10,809 hours.

Statistics on human rights policies and procedures training hours from 2019 to 2022



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. The scope of training and teaching methods was redefined in 2020, and the total number of training hours increased due to the increase in employees.



Nanya's Human Rights Policy

► Human Rights Risk Management

Nanya Technology Corporation adopts the RBA and healthy workplace criteria to assess human rights risks. We periodically assess employees' risk exposure, formulate risk mitigation measures and abide by local law at business operations based in Taiwan and overseas. We constantly identify human rights issues, susceptible parties and departments, and perform human rights risk assessments on a regular basis. Risk values are calculated to reflect the percentage of people at risk relative to total employees; based on the assessment results, the Company is able to devise annual improvements and set mitigation targets for human rights risks in the future.

Identification process

- 1** Human rights policy formulation
- 2** Human rights risk identification: RBA and environmental conditions for occupational health
- 3** Identification of major human rights risks: Periodically assess and identify the impact of risks each
- 4** Formulate mitigation and Remedial measures
- 5** Continue to follow up on improvements

The probability of risk was 0.99% in 2022, 1.11% lower compared to 2021. This year we focused on improving the issue of excessive overtime risk, and the number of excessive overtime cases decreased by 21 cases compared with last year through properly planning and work arrangements, as well as effective use of time, lowering the risk to low risk.

Human rights risks of Nanya

Human rights issues	Parties susceptible to influence	Assessment tools	2021 risk	Probability of risk in 2021	2022 risk	Probability of risk in 2022
Occupational injury	Production/new recruit	Occupational injury report	Low		Low	
Overtime	Production engineer/technician/R&D personnel	Attendance system	Medium		Low	
Employment dispute	All employees	Government correspondence on employment disputes	Low		Low	
Workplace violence	All employees	Grievance investigation	Low		Low	
Child labor	Employees aged 18 and below	Identity proof	Low		Low	
Forced labor	All employees	RBA internal audit	Low		Low	
Protection of Personal Data	All employees	Cases of violation on personal data protection	Low		Low	
Maternity protection	Females in pregnancy or within 1 year of labor	Pregnant women or women who have given birth within less than a year are included in the tracking list if the work environment has caused harm to the mother or fetus.	Low	2.1%	Low	0.99%
Protection of occupational health	People with blood pressure >140/90mmHg or metabolic syndrome	Health figures that did not become under control after assistance, health education, and medical treatments.	Low		Low	
Abnormal workload	Overtime working exceeding 37 hours a month for 6 consecutive months	Physical and mental health test scale	Low		Low	
Ergonomic engineering	The musculoskeletal soreness indicator was greater than 4 in the musculoskeletal symptom survey, and reflects on all employees often taking leave due to poor ergonomic design or soreness and discomfort	Tests for musculoskeletal injury and disease	Low		Low	
Human trafficking	All employees	Grievance investigation	Low		Low	
Equal pay	All employees	Grievance investigation	Low		Low	
Non-discrimination	All employees	Grievance investigation	Low		Low	
Freedom of association	All employees	Grievance investigation	Low		Low	
Collective bargaining agreements	All employees	Grievance investigation	Low		Low	

Note: Human trafficking, equal pay, non-discrimination, freedom of association, and collective bargaining agreements were included in the human rights risk analysis in response to the Company's RBA Standards and human rights policy.

The risk probability of newly added assessment items in 2020 was all low.
The risk probability of the five human rights risk assessment items was all low.

Occupational injury	2022 risk : Low Mitigation measures: Regularly conduct risk identification, perform preventive educational trainings for drivers, eliminate workplace hazardous factors and increase protective equipment Remedial measures: Provide emergency medical and first aid treatment, complete medical assistance; allow leave of absence and provide compensation in accordance with the law.	Employment dispute	2022 risk : Low Mitigation measures: Have reasonable and clear company policies, multiple employee complaint and communication channels; proactively collect information on labor laws and modify relevant management policies in a timely manner. Remedial measures: Establishing and fulfilling the rights and obligations of workers and management.
Child labor	2022 risk : Low Mitigation measures: Explicit prohibition on the use of child labor in the manufacturing process; implementation of identity checking measures. Remedial measures: Terminate child labor immediately, and the personnel is subject to the redundancy process; the parents and legal guardians of the child worker shall be notified; the Company covers the transportation/accommodation/other expenses involved in sending the child home.	Protection of Personal Data	2022 risk : Low Mitigation measures: Personal data risk register and assessment; formulate and execute improvement measures for items with high-risk ratings. Remedial measures: Immediately notify affected persons and execute appropriate actions.
Protection of occupational health	2022 risk : Low Mitigation measures: Dietary education, health promotion events (quitting smoking, weight loss). Remedial measures: Arrange doctor interviews and health assistance.	Ergonomic engineering	2022 risk : Low Mitigation measures: Implement prevention programs against disease caused by abnormal workload; identify and evaluate high-risk groups; conduct health inspections, management, and promotion. Remedial measures: Arrange doctor interviews and health assistance.
Equal pay	2022 risk : Low Mitigation measures: Explicit prohibition on discriminatory practices in recruiting or hiring processes. Remedial measures: Immediately make effective corrections and implement remedial measures. Re-examine the Company's methods and promote correct concepts in the management level.	Freedom of association	2022 risk : Low Mitigation measures: Conduct educational trainings for new recruits; promote correct concepts in the management level. Remedial measures: Immediately make effective corrections and implement remedial measures; adopt appropriate corrective, disciplinary, and issue-solving measures.
Overtime	2022 risk : Low Mitigation measures: Attendance system prompt and control Remedial measures: Provide overtime pay and rest time in accordance with the law, conduct abnormal workload assessments and provide counseling, assign tasks in a reasonable and fair manner, implement educational trainings to improve work efficiency, increase manpower in accordance with organizational needs.	Workplace violence	2022 risk : Low Mitigation measures: Have a complete internal mechanism for handling sexual harassment complaints, conduct sexual harassment prevention trainings, have a complete internal mechanism for handling workplace bullying, conduct workplace bullying prevention trainings. Remedial measures: Immediately make effective corrections and implement remedial measures; assist in arranging counseling when necessary; make referrals to professional counseling services or medical institutions; adopt appropriate corrective, disciplinary, and issue-solving measures.
Forced labor	2022 risk : Low Mitigation measures: Explicit prohibition on the use forced labor in the manufacturing process. Remedial measures: Terminate the personnel's work immediately, and the personnel is subject to the redundancy process.	Maternity protection	2022 risk : Low Mitigation measures: Implement the health management plan of "Maternal Health Protection for Female Workers", conduct workplace hazard assessments, provide prenatal- and postpartum-related health education.. Remedial measures: Perform evaluations by on-site professional doctors and related teams; arrange doctor interviews and health assistance.
Abnormal workload	2022 risk : Low Mitigation measures: Conduct hazard assessments and make improvements; provide health-related counsel and recommendation. Remedial measures: Arrange doctor interviews and health assistance.	Human trafficking	2022 risk : Low Mitigation measures: Explicit prohibition on the use forced labor in the manufacturing process. Remedial measures: Terminate the personnel's work immediately, and the personnel is subject to the redundancy process; notify police agencies and relevant authorities.
Non-discrimination	2022 risk : Low Mitigation measures: Explicit prohibition on discriminatory practices in recruiting or hiring processes. Remedial measures: Immediately make effective corrections and implement remedial measures; re-examine company policies and promote correct concepts in the management level.	Collective bargaining agreements	2022 risk : Low Mitigation measures: Have clear and fair company policies, multiple employee complaint and communication channels; negotiate with the labor union before modifying labor conditions and work rules. Remedial measures: Immediately respond to appeals and conduct good faith bargaining.

► Employee Protection and Communication

Zero Tolerance of Harassment and Discrimination

Nanya Technology Corporation prepared a "Written Statement on Prohibition of Workplace Violence", which was signed by the highest level manager to protect all employees from physical and mental illness due to physical or mental harassment and discrimination, showing the Company's commitment to having zero tolerance for workplace violence. Nanya 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. Nanya Technology Corporation'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 (02-29045858#1132, #1133) or use the internal complaint email address (protection@ntc.com.tw) to report such event to the Human Resource Division, which is the dedicated management unit for complaints. The reported cases will be 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. The Company will handle punishments according to the approved punishment content, and will track, assess, and supervise the punishments to avoid the recurrence of unlawful workplace harassment. Moreover, the Company prohibits anyone from taking revenge on complainants, informants, or those helping with investigations. Those who do so will be punished in accordance with the corporate management regulations. Furthermore, 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.

Measures of Nanya for preventing harassment and discrimination

Policy Statement

Nanya Technology Corporation prepared a "Written Statement on Prohibition of Workplace Violence," 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: protection@ntc.com.tw

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 workplace harassment

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:

(I) 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).

(II) 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 Technology Corporation already had the "Workplace Sexual Harassment Prevention, Grievance and Disciplinary Policy" and "Nanya Technology Corporation Employee Complaint Guidelines" 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. Nanya Technology Corporation had no unlawful workplace harassment and sexual harassment cases in 2022.



Foundation-laying Period

- The "Workplace Sexual Harassment Prevention, Grievance and Disciplinary Policy" and "Nanya Technology Corporation Employee Complaint Guidelines" were integrated into the "Nanya Technology Corporation Employee Protection and Complaint Regulations"



Development Period

- 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

Unlawful workplace harassment training statistics

2019	2020	2021	2022
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"Occupational Hazards and Preventive Training" completion rate

100%	100%	100%	100%
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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 employees with channels for reporting any unlawful or unethical conduct. When employees 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) 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. Documents shall be processed and stored as confidential documents.

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

2019	2020	2021	2022
File written complaints (including anonymous reports)			
0	2	5	4
Employee grievance report table			
2	1	0	0
Complaint hotlines and mailboxes			
0	0	1	1
Total			
2	3	6	5

	Rejected	2019		2020		2021		2022					
		Accepted Case opened	Case not opened	Rejected	Accepted Case opened	Case not opened	Rejected	Accepted Case opened	Case not opened	Rejected	Accepted Case opened	Case not opened	
Cases related to the Business and Ethical Code of Conduct	Corruption and bribery	0	0	0	0	0	0	0	0	0	0	1	
	Improper income	0	0	0	0	0	0	0	0	2	0	0	
	Fair competition	0	0	0	0	0	0	0	0	0	0	0	
	Improper donations	0	0	0	0	0	0	0	0	0	0	0	
	Conflicts of Interest	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	
	Protection of intellectual property rights	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	
	Sexual harassment	0	1	0	0	0	0	0	0	0	0	0	
	Harassment	0	0	0	0	0	0	0	0	0	0	0	
	Discrimination	0	0	0	0	0	0	0	0	0	0	0	
	Environmental protection	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	
Other		0	0	1	0	0	3	0	0	4	0	1	3
Total		0	1	1	0	0	3	0	0	6	0	1	4
	Processing and case closed	2		3		6		5					
	Case closure rate	100%		100%		100%		100%					



A total of 5 reports were received in 2022, including 1 case of embezzlement and 4 cases of internal management issues. Each case is described below.

After investigation, the embezzlement case was due to management personnel not periodically announcing accounts and a case was not opened. Dedicated personnel were appointed for management and to periodically announce the department's accounts.

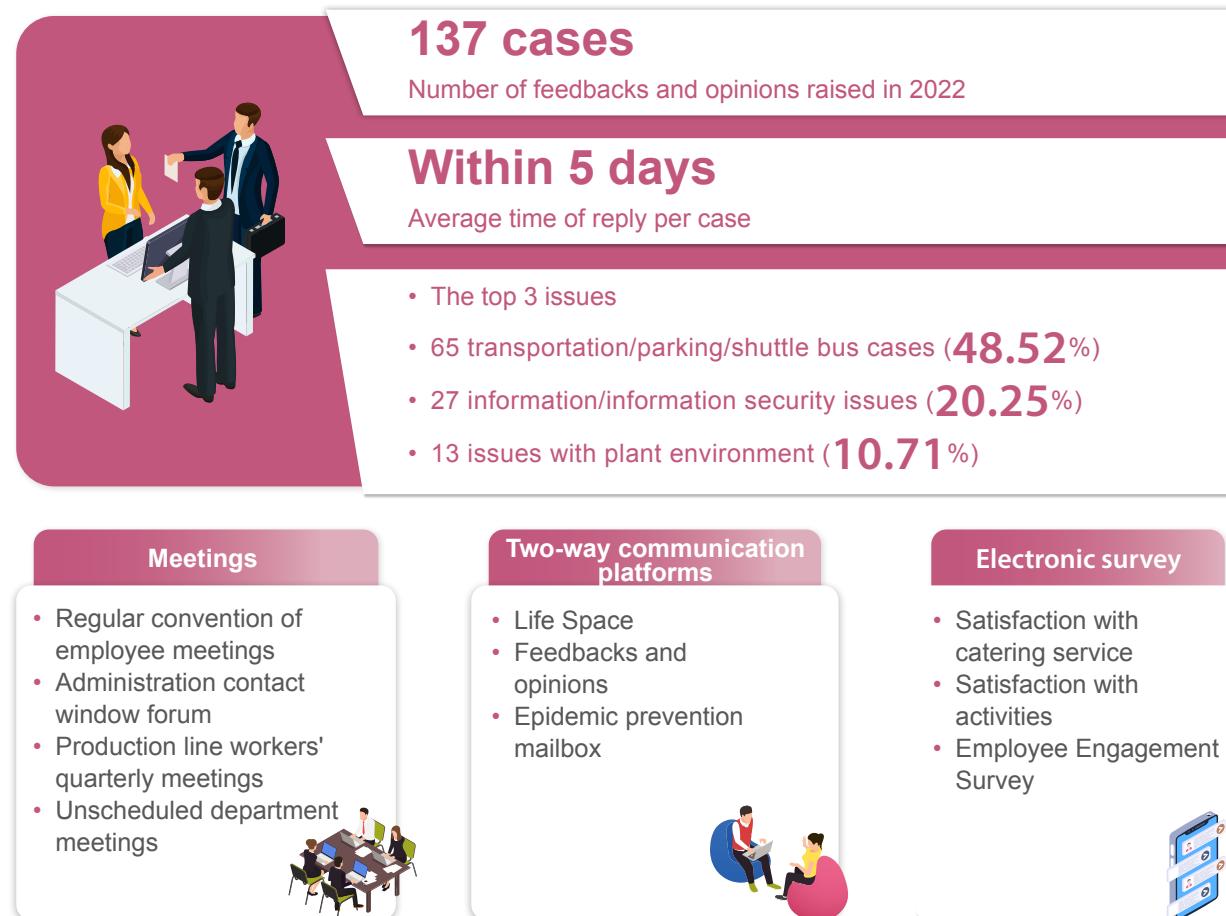
1

After investigation, the 3 internal management complaints involved unsuitable constraints and rules. Departments were informed to comply with company regulations when carrying out management operations, and to fully communicate with employees to avoid misunderstanding. The other case was investigated due to improper discipline and management behavior of the supervisor, and will be punished in accordance with the company regulations.

2

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 Form". 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:



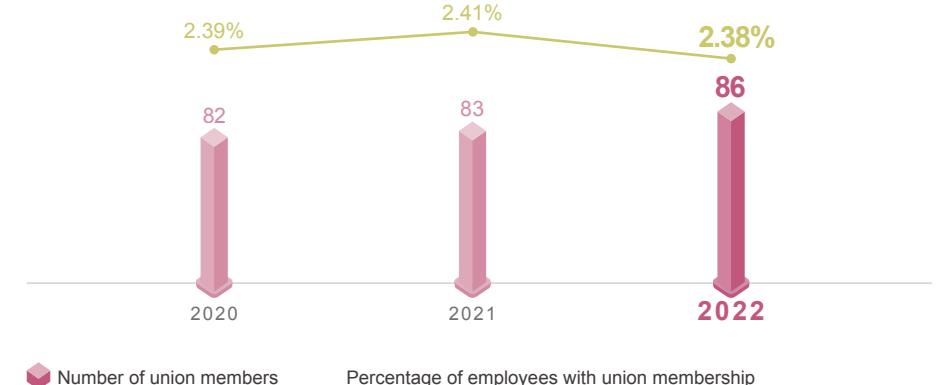
Employee meetings are held two times a year.



Interactive opinion section

The employees of Nanya have established a labor union since April 2012. Although the Company and the labor union have not signed a group agreement, we still actively maintain communication and harmony. Various communication channels are still utilized to exchange information, allowing the labor union to fully perform its functions and express opinions. This strengthens the harmonious employment relationship and benefits. Employees currently communicate through the Nanya labor union. Labor representatives are elected by the labor union representative assembly according to Article 5 of the Regulations for Implementing Labor-Management Meeting. Hence, the Company believes that labor representatives may overlap with directors and supervisors of the labor union. The Company communicates with the labor union on a monthly basis, so labor-management meetings are not convened.

Number of union members in the last 3 years - Taiwan



► Occupational Health and Safety

The president of Nanya Technology Corporation has signed a safety and health policy commitment to continue to improve and promote a safety culture. The Taiwan plant obtained ISO 45001 Management System certification (covers all workers: employees account for 85.1% and other workers that are not employees account for 14.9%), and the NDAZ-0002 EHS Management Manual was established to provide a safe, healthy, and excellent work environment to all workers at the Company. The Company is committed to ensuring that all workers of the Company have the ability to recognize hazards when engaging business activities so that occupational injuries can be prevented, in hopes of achieving zero occupational injuries and zero occupational disease.

Nanya Technology Corporation sets out from the identification, assessment, and control of hazards in the workplace:

Step 1



The identification of hazards requires the verification of which hazards exist in the workplace, verification of which adverse effects may accompany these hazards, and determination of whether employees are exposed or may be impacted. The basis for determination includes workplace inspection records, safety data sheet, accident and disaster records, Job Safety Analysis, job safety observations and interviews, standard operating procedures, equipment manuals, and repair records, and then risk assessment is carried out on this basis.

Step 2



The assessment of hazards requires the verification of whether the level of exposure of workers who are exposed or may be exposed complies with regulations, and understanding whether control equipment or management measures meet requirements. After hazards identification and risk assessment, a total of 380 people (the number of people under level 4 management in the annual special health examination was 0) were determined to be involved in high risk operations (e.g. special hazard health operations: ionizing radiation, noise, arsenic, indium, mercury, and n-Hexane), and control and improvements were carried out.

Step 3



The control of hazards requires control of hazard sources, control of routes that come in contact with hazards, control of workers exposed to hazards, and the establishment of safety procedures. High risk items that are identified are prioritized for improvements after feasibility evaluation.

Nanya Technology Corporation not only provided 254 hours of safety and health training for 4,362 participants in accordance with the law, but also invited industry experts to provide construction safety seminars (a total of 86 employees and 6 contractors participated) and organized construction safety supervisor certification training (a total of 112 employees obtained the certification) in response to the expansion of the new fab, so as to maintain construction safety during the expansion period. We organized 54 emergency response drills to strengthen the training and response ability of personnel, including medium and high risks (such as chemical leakage and fire accidents), rescue of injured personnel, evacuation during an earthquake or fire accident, and actual operations of fire extinguisher. In addition to training, the Safety and Health Division conducted monthly on-site SWATs at the workplace of various teams based on 36 themes. The 36 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.

Nanya Technology Corporation's Proactive Safety and Health Improvement Plan for Work Environment and Clean Room

2019	2020	2021	2022
Number of medium and high risks and improvement plans in the general work environment			
12	11	11	12
Summary of Improvement Plan			
Oxygen detector installation, regional lighting improvement, adding insulation on busbars, and traffic safety of employees riding scooters	Personnel passageway/platform fall protection, lowering the noise in blower areas, and other measures to reduce operational risks of personnel	Forklift AI protection, tanker pipeline improvement, oxygen concentration detector installation, personnel ladder fall protection, and traffic safety of employees riding scooters	Organic solvent hood installation, exterior wall tile reinforcement, sidewalk leveling, and personnel passageway/platform fall protection to reduce operational risks
Number of medium and high risks and improvement plans in clean rooms			
17	12	9	10
Medium and high risk improvement rate			
100%	100%	100%	100%
Amount invested in improvement plans(NT\$10,000)			
396.4	383.7	341.8	296.1
Improvement plan Main Content			
Earthquake-proof construction for clean room machines and material shelves, lighting improvement for clean room areas, efficiency improvement for clean rooms' local air exhaust equipment, leakage prevention measures for pipeline valve and chemical storage areas.	Work safety for working aloft in clean rooms (adding lifelines), lighting improvement for clean room areas, adding protection nets for material shelves in clean rooms, fall protection for machine maintenance personnel working on platforms, rust and leakage prevention for pipeline valves.	Clean room machine cover, shaker improvement, and work platform personnel collision prevention, power connector insulation improvement, local air exhaust equipment improvement, pipe coating prevention, and valve leakage prevention measures.	Measures to prevent objects from falling and toppling of machinery and material racks in clean rooms, seismic-resistance measures for machinery, improvement in ergonomic design of cart for maintenance parts, and pipe valve and chemical storage area leak prevention and ventilation facilities.

Consultation and communication between safety and health organizations and workers

Nanya Technology Corporation 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.

Consultation and Communication between the Occupational Safety and Health Committee and Workers

- Occupational safety and health management affairs and safety and health performance
- Safety and health self-inspections and audits
- Safety and health education and training plan and implementation
- Measures that must be taken for operating environment monitoring results
- Occupational hazard and incident investigation reports
- Health management and health promotion affairs
- Regulatory changes and response measures



Important Issues that the Occupational Safety and Health Committee Adopted Resolutions in 2022

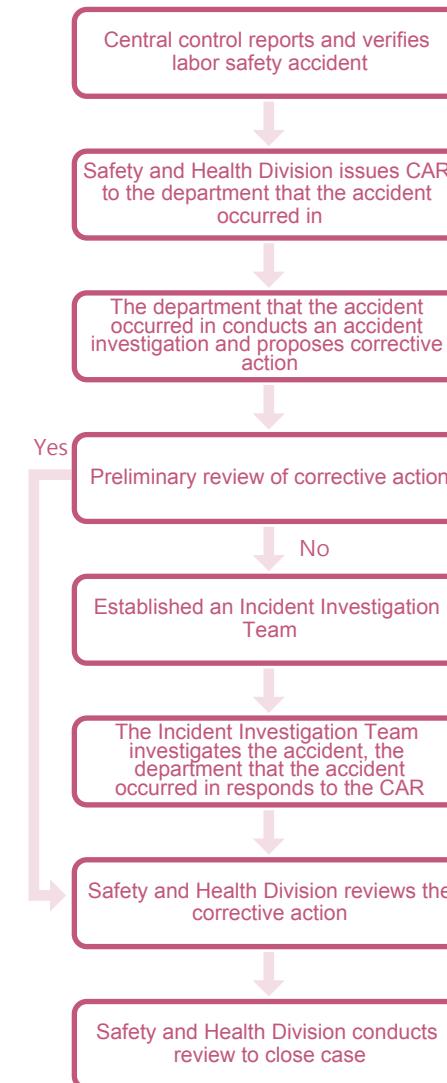
- Supervisors verify that improvements for scooter safety inspections in the department are completed
- Improve the management method for predicting failure of equipment parts through function inspections
- Ensure the training qualifications of personnel of expansion related contractors
- Complete trend analysis and classified management of exposure evaluation assessment data
- Specify safety and health items that must be performed for wall hole milling to avoid damaging pipelines in walls
- Examine shuttle bus routes and show concern about the safety and completeness of employees' scooters
- Early Control the certification of aerial work platform operators in the latest amendment

Incident management and analysis

When an accident is verified by central control after investigation (occupational accident, false alarms near miss, incident that affects physical and mental health), the Safety and Health Division will issue a Corrective Action Request (CAR) to the department that the accident occurred in to conduct a preliminary investigation and take corrective action. Whether or not an Incident Investigation Team is established to cooperate with the investigation is decided based on the severity of the accident. The Safety and Health Division strictly reviews corrective action taken for accident 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 close the case. There was a total of 28 false alarms near miss in 2022. The main improvement to false alarms near miss this year was liquid leak alarm (17%, accounted for 61%), which is mainly caused by cracked washer of flow meter and waste liquid pipe air lock overflow. The improvement method was a comprehensive inspection of washers in the same type of machine and setting a

replacement cycle, and adding air locks to ventilation pipes.

NTC Accident Investigation Process



Note: Members of the incident investigation team include: 1. Head of the department of the incident, 2. Operators of the department of the incident, 3. Industrial safety personnel, 4. Other (nurse, contractor, construction supervisor, or other personnel), 5. Labor representative.

Statistical analysis of occupational injuries and occupational diseases

Disabling injury frequency rate (No. of disabling injuries/Million work hours) and severe disabling injuries rate (No. of lost work days/Million work hours) were both 0 in 2022.

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

	2019	2020	2021	2022
Total work hours (hours)	6,398,888	6,778,840	6,872,456	7,073,064
Number of recordable occupational injuries (no. of people)	0	1	0	0
Rate of recordable occupational injuries (frequency of disabling injuries)	0	0.14	0	0
No. of serious occupational injuries (no. of people)	0	0	0	0
Rate of serious occupational injuries	0	0	0	0
Severe disabling injuries rate	0	6	0	0
Frequency-severity indicator	0	0.03	0	0
No. of occupational illnesses certified by physician	0	0	0	0
Ratio of occupational illnesses certified by physician	0	0	0	0

Note 1: In 2022, 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: In 2022, the Company had no financial loss resulted from compensations or fines as outcomes of lawsuits involving employee occupational injuries or occupational illness.

Note 3: Frequency of disabling injuries (FR) and severity of disabling injuries (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).

Contractor Total Work Hours and Occupational Injury Statistics

	2019	2020	2021	2022
Total work hours (hours)	345,824	404,054	339,387	562,977
No. of injuries	0	0	1	0
No. of lost work days	0	0	7	0

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 personnel of contractors to abide by regulations and engage in safe behavior, in order to achieve zero disasters and zero accidents.

Nanya Technology Corporation has established complete contractor management regulations according to the internal regulations of Formosa Plastics Group, such as the Construction Permit Management Regulations, Safety and Health Work Rules, Application Form for Controlled Constructions, Application form for Hot Work, Application Form for Power System Electricity Use, High Risk Construction Worker Checklist, and Abnormal Situation Emergency Response Regulations. All contractors are required to sign a construction contract and construction safety notice, which informs contractors of the work environment, hazards, and safety and health regulations. Furthermore, the Company currently has a number of safety and health management mechanisms to maintain a safe work environment for workers, such as self-inspection conducted by each unit, inspection and proposals by personnel of the construction safety department, personnel work observation and interviews, and accident report investigations. The mechanisms are also applicable to contractors. Employees are encouraged to monitor contractors for unsafe conduct, and may report abnormalities to Central Control through their team leader or safety and health personnel via safety and health management mechanisms 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 raise their safety awareness. Employees that serve as safety supervisors are required to complete the safety supervisor course required by internal regulations. This is to ensure that they are clear about the duties of a safety supervisor, in order to prevent an occupational accident from occurring.

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



5

Green

A Producer of Green Technology

Upholding the green philosophy that we only have one Earth, Nanya Technology Corporation insists on leaving the best environment to every future generation. We actively manage all environmental impacts of our operations, and adopt higher standards than required by law for energy, resources, emissions, and waste to avoid or mitigate the risk of impacts. We also research and develop advanced and highly efficient products to assist consumers in lowering energy consumption and reducing carbon emissions when using products. We have set goals for our sustainability performance to fulfill our responsibility of cleaner production and to protect the natural environment. As climate change has become one of the most significant global risks, we implemented risk identification, assessment and management in accordance with the Task Force on Climate-related Financial Disclosures (TCFD) Recommendations to enhance our operational resilience under the climate change crisis.

SBT

Proposed carbon reduction goals that comply with the SBT and obtained certification from the SBTi. Reduce Scope 1+2 GHG emissions in 2030 by 25% compared to 2020, and Scope 3 GHG emissions in 2030 by 27% per product compared to 2020.

92.9 %

Annual average process waste water recycling rate

1,624

The annual reduction of perfluorocarbons is equal to 1,624x the carbon absorption of Da'an Forest Park





Strategy and Performance of Material Topics



Greenhouse Gas Management

Energy conservation and carbon emissions reduction: Set short, medium, and long-term goals and actively implement related management measures.

Low-carbon manufacturing: Commit to improvement in production technologies and reduce greenhouse gas emissions in the production process.

2022 Goals	2022 Performance Target achievement status	2023 Goals
Reduce greenhouse gas emissions per die by 38% from 2017	Note 1 Decreased 33%	Reduce greenhouse gas emissions per die by 31% from 2017
Reduction rate of PFCs emissions during process reaches a minimum of 93%	Reduction rate reach 93%	Reduction rate of Fluorinated Greenhouse Gases (F-gases) emissions from processes reaches a minimum of 93%
Reduce F-gases emissions per die by 30% from 2015	Note 2 Reduced by 29.6%	Reduce F-gases emissions per die by 30% from 2015
Number of days production was suspended due to climate change disasters maintained at 0 days	Maintained at 0 days	Number of days production was suspended due to climate change disasters maintained at 0 days



Water Management

Response to risks: Establish backup water sources and water storage tanks and use emergency response organization between company plants to coordinate water usage.

Wastewater recycling and reuse: Establish wastewater collection processing and adopt different multiple recovery and reuse to improve the water recycling rate.

Water usage reduction: Conserve water through daily management.

2022 Goals	2022 Performance Target achievement status	2023 Goals
Accumulated water consumption per unit production capacity decreased >38.5% compared to 2017	38.5%	Accumulated water consumption per unit production capacity decreased 38.5% compared to 2017
Annual average process wastewater recycling rate: 90% and above	Annual average process wastewater recycling rate: 92.9%	Annual average process wastewater recycling rate: 93% and above
Other losses in production caused by restricted water supply: 0 wafer (slice)	Other losses in production caused by restricted water supply: 0 wafer (slice)	Other losses in production caused by restricted water supply: 0 wafer (slice)



Energy Management

Implementation of energy conservation measures: Implement ISO 50001 Energy Management System for systematic management and improve the efficiency of energy usage.

Innovative applications: Use external exchanges or training to obtain the latest energy conservation technology or energy-saving methodology.

2022 Goals	2022 Performance Target achievement status	2023 Goals
Cumulative energy saved with energy conservation measures from 2017 to 2022 reaches 64,000 MWh (2.3×10^9 MJ) and above.	Note 3 Cumulative energy saved from 2017 to 2022 totaled 63,228 MWh (2.28×10^8 MJ).	Cumulative energy saved with energy conservation measures from 2017 to 2023 reaches 67,500 MWh (2.43×10^8 MJ) and above.
Annual renewable energy use reached 7,880 MWh (2.84×10^7 MJ)	Actual use was 7,880 MWh (2.84×10^7 MJ)	Annual renewable energy use reached 25,000 MWh (9×10^7 MJ)



Waste and Pollution Prevention

Circular economy: Increase waste recycling and reuse rate to use resources effectively.

Source reduction: Continue to promote waste reduction and increase waste recycling rate.

2022 Goals	2022 Performance Target achievement status	2023 Goals
0 cases in violation of environmental laws and regulations	0 cases	0 cases in violation of environmental laws and regulations
Rate of auditing and coaching waste disposal contractors on-site > 90%	Auditing and counseling rate of 98%	Rate of auditing and coaching waste disposal contractors on-site > 98%
Reduce VOC emissions per die by 46% from the base year of 2017	Note 4 Decreased 38.8 %	Reduce VOC emissions per die by 40% from the base year of 2017

Exceed Achieve Unachieve

Note1: Due to trial production of the 1A/1B process and adding 89 new machines, electricity consumption in 2022 increased 2.2% compared to 2021, and an increase in the electricity carbon emission factor of Taiwan Power Company by 1.4% caused an increase in GHG by 2.6%.

Note2: The increase in PFCs was mainly due to trial production of 1A/1B processes and the newly purchased machines; 5 TF/NF3 machines were added and usage increased 5.7%; die output decreased 3% compared with 2021.

Note3: Two energy conservation management plans were implemented in 2022 and reduce energy consumption by an estimated 2,960MWh/year. Completion of the project was delayed to 2023 due to production capacity allocation.

Note4: Process VOC emissions increased 19% compared with 2021, and die output decreased 3% compared with 2021.

Note5: According to the formula set by Hsinchu Science Park Bureau

5-1 Climate Change Management

Climate Change Adaptation

Nanya Technology Corporation responded to the international trend of carbon reduction by implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which was provided by the International Financial Stability Board (FSB) in 2018 and publicly supported the TCFD in 2021, publishing a [TCFD report](#) for 2 consecutive years since 2022 (QR code to be supplemented). We are actively establishing mechanisms and strengthening operations. We developed strategies and actions in response to climate change on aspects of governance, strategy, risk management, and metrics and targets, in hopes of reducing the impact of climate risks. Actions in 2022 are described below:

Management strategies and actions

- In terms of governance level, climate change is listed as an issue for the board of directors. The Sustainable Development Committee is a functional committee established to manage measures relating to the trend of sustainability and climate change.
- Enhance the climate governance ability of the board of directors and management, and raise the awareness of all employees of climate change.

2022 Operation status

- A total of 6 board meetings and 1 Sustainable Development Committee meeting were convened in 2022.
- Of the hours of continuing education received by directors in 2022, 48.9% was related to climate change. ESG issues are incorporated into the Company's manager training, and new employees are required to receive training in ESG and climate change.

Management strategies and actions

- According to the Company's operational risk management procedures, we assessed the significance of related risks and opportunities brought by different scenarios of climate change, and formulated relevant response measures, which were included in Enterprise Risk Management (ERM) and periodically confirmed by senior managers. Formulate a complete emergency response plan for risks of natural disasters related to climate change.

2022 Operation status

- Material risks that we identified were mainly transition risks, such as changes to the electricity structure, customer requirements on low carbon products, and the impact of implementing SBTs; the mid-term financial impact of the three items is estimated to account for 3-4% of annual revenue, and was reported to senior management for review during the annual Risk Management Committee meeting. We continue to reduce potential impacts through backup power supplies, energy conservation plans, and the use of renewable energy.
- 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 for 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 12% of revenue in 2022), so as to seize business opportunities. The Company's DRAM products have already been applied in solar PV systems and charging stations.
- Verification of GHG emissions in 2022 will be completed in May 2023. 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 2021 inventory.

Governance



- Management periodically participates in quarterly sustainable development and risk management meetings to examine the Company's implementation results and decide on work items.
- Implement improvement plans through monthly climate change management meetings, ISO50001 energy management monthly meetings, and ISO14001 environment management monthly meetings.

- The Corporate Sustainability Committee and Risk Management Committee convened a total of 8 quarterly meetings, and included discussions on responses to climate change. The discussion topics were listed as resolutions or action items that required follow-ups and improvements. For example, formulating a renewable energy policy, and discussing risks of power stability issues were listed as resolutions.

Risk Management



- 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.

Management strategies and actions

- According to the internal risk management schedule, short-term is defined as within 3 years, mid-term is 3-10 years, and long-term is 10 years and above. Stakeholders' needs and climate change issues are periodically collected. Using the TCFD framework, short, medium, and long-term climate-related risks and opportunities are periodically identified, as are their impacts on operations, strategies, and financial plans.

2022 Operation status

- Using TCFD climate risk scenario simulation, short, medium, and long-term climate-related risks and opportunities were discussed and identified cross-departmentally. A total of 25 risk factors and 6 opportunities were identified.
- Considering the risks and opportunities in different climate change and physical scenarios, as well as the operational characteristics of Nanya Technology Corporation, we formulated five strategies, including developing green products, implementing cleaner production, strengthening adaptation ability, and working with sustainability partners.

Strategy



- Scenario analysis includes:
Transition Scenarios: NDC, pathway to net zero (APS, NTZ)
Physical scenario: AR5 RCP2.6-8.5 (adjusted to SSP based on the latest information)

Metrics and Targets



- Adaptation goals:
 - Strengthen the Company's drought resistance and increase the water recycling rate
 - Promote green buildings and green factory certifications

Management strategies and actions

- Mitigation goals:
 - Compile and verify Scope 1/2/3 emissions every year,
 - Set greenhouse gas management goals and energy and resource recycling and reuse goals
 - Participate in the international Carbon Disclosure Project (CDP) and water safety project, disclose related information, and communicate with stakeholders
 - Propose SBTs for certification

2022 Operation status

- The Company's GHG emissions in 2022 were 444,000 thousand tons, and emissions per unit product was 405 kg CO₂e/thousand die, down 31% compared to 2017.
- A total of NT\$41.57 million was invested and 25 energy conservation plans were completed in 2022, saving an estimated 4,378 MWh, reducing carbon emissions by 2,228 tons, and saving NT\$116 million in electricity fees.
- Obtained certification for SBT in 2030

- Use 7.88 million kWh of electricity from onshore wind farms according to the schedule for purchasing renewable energy. Continue to increase renewable energy purchases and use 25 million kWh starting in 2023, which is expected to reduce carbon emissions by 12,500 tons.
- Rated by the CDP at Leadership Level A – in climate change and A-LIST in water security in 2022
- Process wastewater recycling rate reached 92.9% in 2022.
- Received the green factory certification and added 1 green building.

Climate Change Mitigation

The main sources of GHG emissions in semiconductor 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 in the Greenhouse Gas Reduction and Management Act, Greenhouse Gas Inventory Registration and Management Regulations, Greenhouse Gas Verification Guidelines, Greenhouse Gas Registration Guidelines, 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.

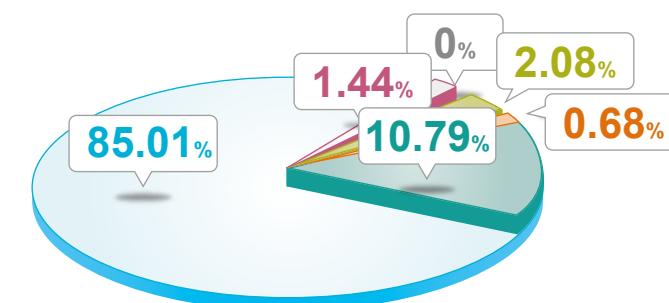
The scope of inventory of Nanya Technology Corporation covers all production locations in Taiwan. The main sources of GHG emissions were purchased electricity and steam (accounting for about 86.44%) and process emissions (accounting for about 10.26%). GHG emissions in 2022 totaled 440,954 metric tons CO₂e. Scope 1 emissions totaled 59,788 metric tons CO₂e, and there was no GHG emissions from biomass fuel; Scope 2 emissions totaled 381,166 metric tons CO₂e. The data above does not include emissions of subsidiaries. The Company has begun compiling an 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 Environmental Protection Administration, the IPCC 2006, emission factors released by Taiwan's Bureau of Energy, 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 AR4. Compared with the base year of 2017, the greenhouse gas emissions in 2022 increased by approximately 17.1%, and the number of chips produced increased by approximately 17.2%. In terms of emissions per unit wafer, the emission intensity in 2022 was 0.75 kg-CO₂e/wafer area(cm²), which was higher than that in 2021. However, if viewing from the emission intensity of per unit chip output, the total GHG emissions per unit capacity in 2022 decreased 33% compared with the base year of 2017.

Percentage accounted for by Scope 1 and Scope 2 emissions in 2022

Scope 1

- Process emissions
- Fugitive emissions
- Fixed combustion
- Mobile combustion



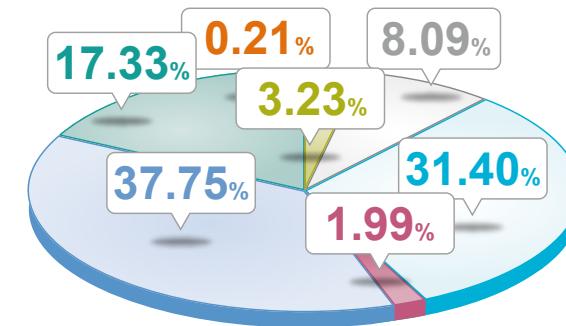
Scope 2

- Electricity
- Steam

Percentage accounted for by Scope 1 GHG emissions

Scope 1

CO ₂	10,363 t
CH ₄	126 t
N ₂ O	1,931 t
HFC	4,837 t
PFC	18,774 t
SF ₆	1,187 t
NF ₃	22,570 t



2019 to 2022 Scope 1 and Scope 2 emissions



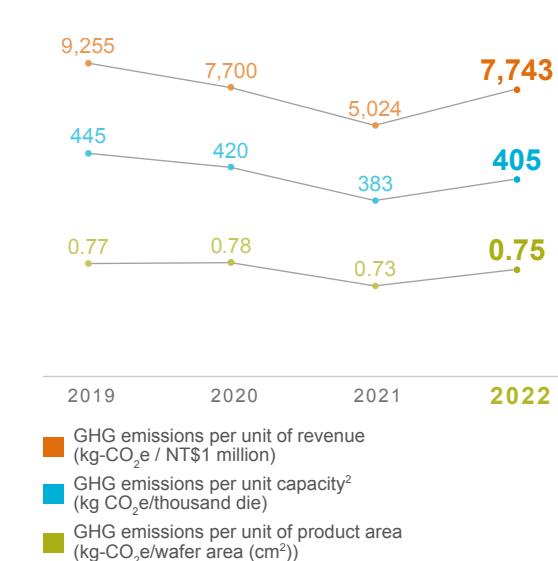
Note 1: PFCs emissions totaled 9 types of process gases, including carbon tetrafluoride (CF_4), perfluoropropane (C_3F_8), hexafluorobutadiene (C_4F_6), tetrafluoroclobutane (C_4F_8), trifluoromethane (CHF_3), difluoromethane (CH_2F_2), monofluoromethane (CH_3F), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).

Note2: Other direct emissions include CO_2 , CH_4 , N_2O process gas, HFCs and SF_6 non-process gas, such as fire extinguishers, refrigerators, freezers, and high voltage control panel.

Note3: Indirect energy emissions include electricity and steam use, in which the carbon emission factor of electricity is 0.509 kg CO_2e/kWh announced by the Ministry of Economic Affairs on July 22, 2022.

Note4: Starting in 2021, we installed N_2O reduction equipment in the film process, so Scope 1 emissions decreased.

GHG1 emission trends in 2019-2022



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

Note2: 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 2022. In all scope 3 inventory categories, the highest GHG emissions came from the use of sold products, followed by Emission from processing of sold products. Purchased goods and services at the third place.

Scope 3	Source of calculation	Scope 3 emissions (ton-CO ₂ e)
Purchased goods and services*	Carbon emissions from the main material purchased, auxiliary materials in the process	122,713.5
Fuel- and energy-related activities*	Carbon emissions from the ton-km for transporting fuel used in the factory and energy transported to the factory	77,373.4
Upstream transportation and distribution*	Carbon emissions from transportation and distribution of products purchased between the Company's tier 1 suppliers.	2261.6
Downstream transportation and distribution	Carbon emissions from the ton-km for transporting products from the plant to customers.	1,997.9
Emission from processing of sold products	Emission from packaging and testing sub-con by capacity allocation	131,079
Employee commuting*	Carbon emissions from company cars and commuting	2,051.9
Business travel*	Carbon emissions from employees traveling overseas on business trips	24.8
Waste generated by operations*	Carbon emissions from waste generated in the production process, including waste transport and disposal.	1,488.5
Use of sold products*	Carbon emissions from electricity consumption of products used by customers	534,761.7
Assets and equipment	Investments in equipment and property	66,772.8
Total		940,525

Note1 : Source of main emission factors in Scope 3: The Simapro 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.

Note2 : The emissions of 7 items in Scope 3 GHG emissions passed verification in 2022. Including "purchased goods and services, fuel- and energy-related activities, upstream transportation and distribution, waste generated by operations, business travel, employee commuting and use of sold products" the emissions of 7 items is 740,675.3 metric tons CO_2e .

Note3 : *The items in Scope 3 GHG emissions passed verification in 2022.

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 Bureau under the Ministry of Economic Affairs.

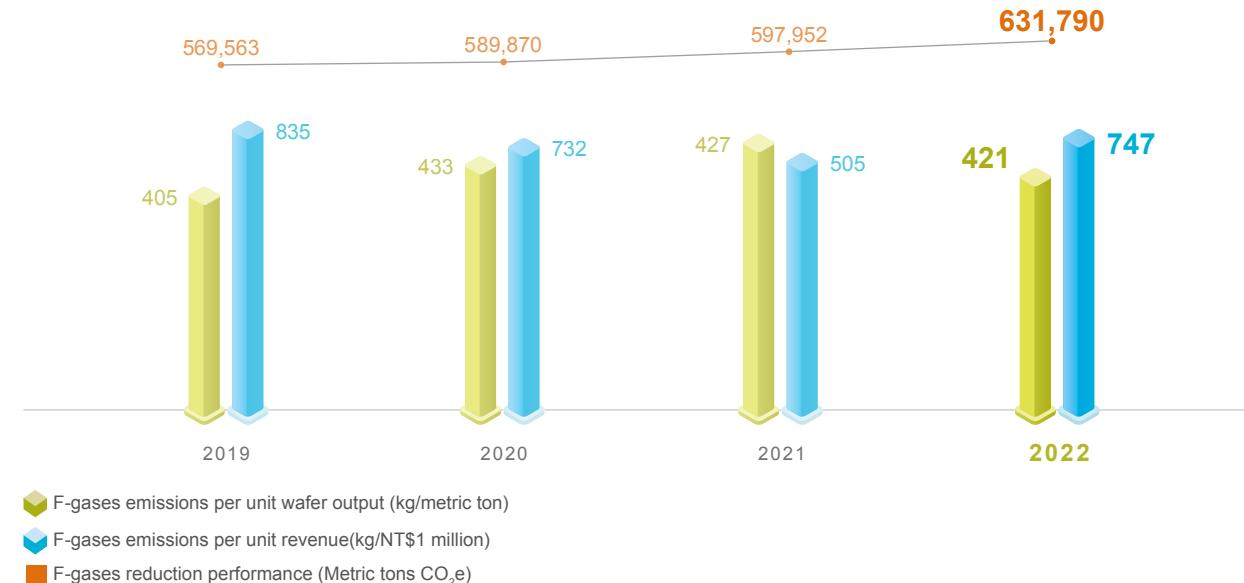
As Fluorinated Greenhouse Gases (F-gases) have the properties of high global warming potential¹ and N₂O being one of the Company's main Scope 1 emissions, Nanya has actively planned and implemented GHG reduction plans for F-gases and N₂O. Nanya planned to purchase a high reduction rate local scrubber when planning the plant. Currently, the PFC Local Scrubber² used in the thin film and etching processes is Burn Type, destroying F-gases through the high temperature generated by combustion. To reduce PFCs emissions, we established PFC reduction acceptance standards for local scrubber, in which CF4 treatment efficiency must reach 90% and above, the reduction rate of C₃F₈, C₄F₆, C₄F₈, CHF₃, CH₂F₂, and SF₆ must reach 95% and above, and the reduction rate of NF3 must reach 99% and above. After the local scrubber is installed, FTIR³ is used to test PFC reduction rate, in order to meet future reduction trends. Nanya was successfully implemented N₂O emission destruction in thin film process by the burned-type local scrubber, reducing 90% emission and above, and effectively lowers N₂O emission.

Note1: Global Warming Potential (GWP) is the warming intensity of the gases relative to carbon dioxide (set the CO2'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)

Note2: Local Scrubber: local exhaust processor.

Note3: FTIR : Fourier-Transform Infrared Spectrometer

PFC emission trends in 2019-2022



Note: In the 2021 annual Sustainability Report, the data for PFC emissions per unit wafer output was incorrect, and the correct data is hereby provided.

Through purchasing Local Scrubber with high F-gases 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 2019 to 2022, the reduction rates of F-gases used in process all reached a minimum of 93%, reducing a total of 2,389,175 metric ton-CO₂e emissions over four years, which is equal to 5,853 times the carbon absorption of Daan Forest Park in one year.

Note: According to the Bureau of Energy's website: Calculated using the CO₂ absorption of Daan Forest Park at 389 metric tons per year

Carbon Disclosure Project

We began participating in the non-profit organization Carbon Disclosure Project (CDP) in 2009, and disclose information on GHG emissions and reduction each year based on the principle of transparent disclosures.

We rated at the leadership level in climate change between 2018 and 2022. In addition to disclosures of information on carbon emissions in the CDP and this report, Nanya Technology Corporation 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.

5-2 Energy and Resource Management

Energy Management

Energy Structure

Nanya Technology Corporation mainly used purchased electricity (accounted for 89.5% of the Company's energy consumption), natural gas (accounted for 6% of the Company's energy consumption), and steam (accounted for 4.5% of the Company's energy consumption) in 2022. The Company also used diesel, but it accounted for less than 0.05%, so it was not included in statistics of energy consumption indicators. The Company began purchasing renewable energy in 2020, and purchase renewable energy (electricity) accounted for 0.95% of the Company's energy consumption in 2022. Nanya Technology Corporation's production capacity in 2022 decreased 3.05% compared to 2021, and revenue decreased 33.5% compared to 2021. The continued adoption of advanced processes led to an increase in energy consumption. Hence, Nanya Technology Corporation's total energy consumption (electricity + natural gas + steam) reached $831,862$ MWh (3×10^9 MJ) in 2022, an increase of 0.68% compared to 2021, in which electricity consumption (including renewable and non-renewable) was 744,299 MWh (2.68×10^9 MJ), natural gas consumption was 50,030 MWh (1.8×10^8 MJ, 4,780,740 m³), and steam consumption was 37,532 MWh (1.35×10^8 MJ, 49,620 metric tons). In terms of emission intensity, electricity consumption per unit capacity was 0.68 MWh/NT\$1 million in 2022 (5% increase compared to 2021), natural gas consumption per unit capacity was 4.4 m³/NT\$1

million (5.3% increase compared to 2021), and steam consumption was 0.046 metric tons/NT\$1 million (16.2% decrease compared to 2021). The downward or steady trend in the past three years shows that Nanya Technology Corporation continues to improve its energy management.

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 main energy sources that Nanya Technology Corporation uses. 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. 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

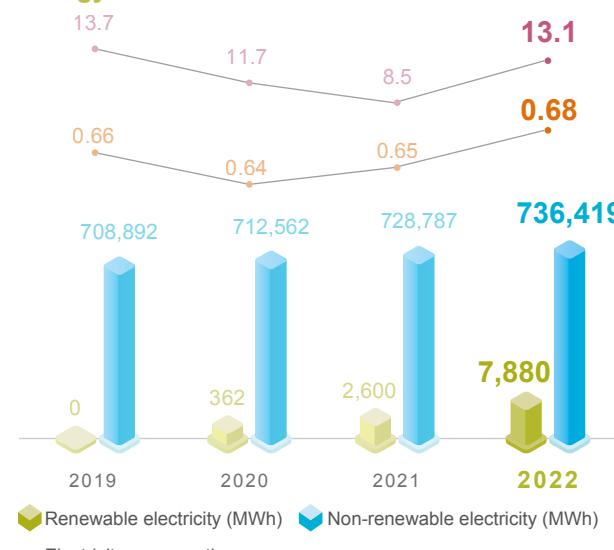
and waste heat recovery and utilization in freezers. Over the past years, we have constantly implemented various energy-saving technologies, using diverse thinking methods, such as automating equipment control, improving equipment efficiency, reclaiming energy for reuse, and improving production management, to reduce energy consumption. Meanwhile, we prioritize energy conservation equipment during the design of equipment installation and procurement. Moreover, the company promotes energy management programs in offices and public areas to reinforce the concepts of our employees in energy conservation. The company also continues to reduce the consumption of raw materials and increases the recycling amount of waste to mitigate the global impacts of greenhouse gases. Energy sources that Nanya mainly consumes are purchased electricity, natural gas, and a small amount of diesel. The company does not use internal energy.

Total energy consumption

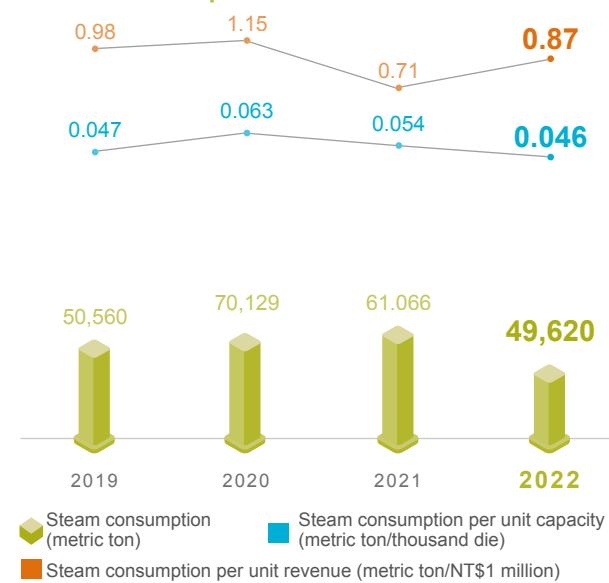
Unit: MWh

2019	2020	2021	2022
Total renewable energy consumption			
0	362	2,600	7,880
Total non-renewable energy consumption			
794,681	812,350	823,679	823,982
Total energy consumption			
794,681	812,712	826,279	831,862

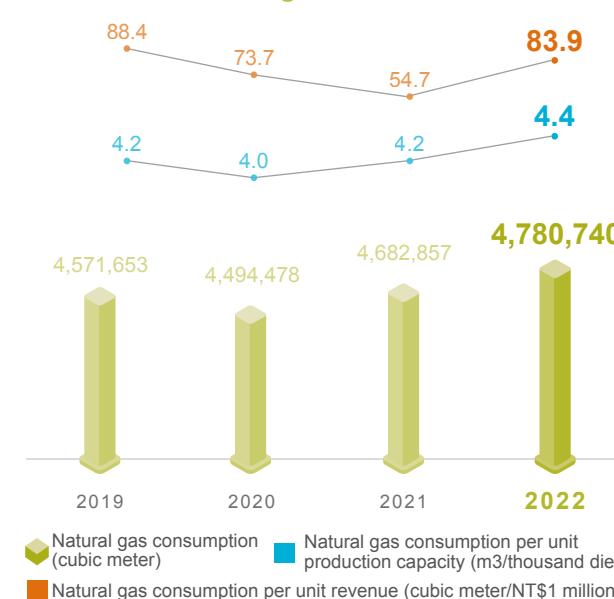
Energy costs from 2019 to 2022



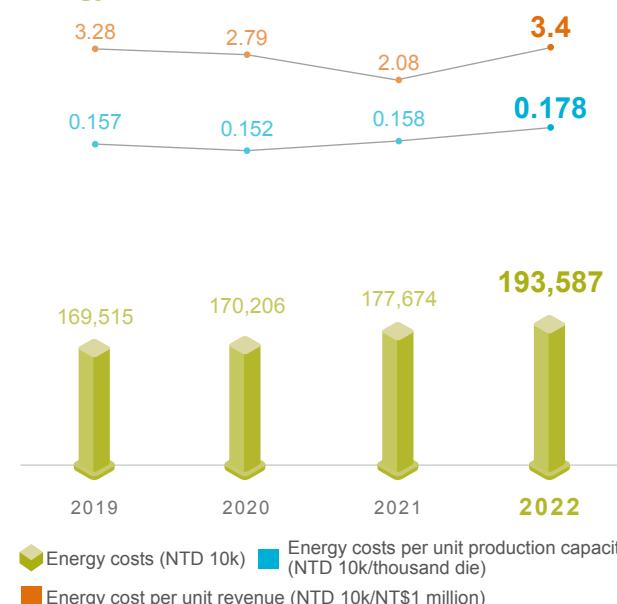
Steam consumption in 2019 to 2022



2019 to 2022 natural gas consumed



Energy costs from 2019 to 2022



► Renewable Energy Use and Planning

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

Self-development evaluation and trial implementation

Nanya Technology Corporation purchased 362 T-RECs through the renewable energy trading platform in 2020, and also began evaluating available spaces in existing factories, planning the establishment of a solar power plant with installed capacity of 456.28 kW (to be completed in coordination with the expansion of the new factory in 2024). We are also installing 27.36 kW of solar panels on the rooftop of our new building, and completed construction in 2022. New factories in the future will also fully utilize land resources to install green energy facilities.



External cooperation

Nanya Technology Corporation is working with renewable energy selling enterprises to obtain more electricity, and is gradually expanding consumption based on regulatory requirements. In 2021, we used a total of 2,600 MWh (9.36×10^6 MJ) in renewable energy, and used 7,880 MWh (2.84×10^7 MJ) in 2022. Starting in 2023, we will gradually increase annual renewable energy use until we reach 25,000 MWh (9×10^7 MJ) or more.



Becoming aligned with international standards by achieving net zero emissions

In order for the percentage of renewable energy to reach 25-30% by 2030 to achieve the SBT or RE100, Nanya Technology Corporation will target the supply contracts of large renewable energy plants to further increase its renewable energy consumption.



► 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. Moreover, the company promotes energy management programs in offices and public areas to reinforce the concepts of our employees in energy conservation. The company also continues to reduce the consumption of raw materials and increases the recycling amount of waste to mitigate the global impacts of greenhouse gases.

Nanya implemented ISO 50001 Energy Management Systems and completed certification in 2018. We invested NT\$21.8 million in 2019 to establish the energy management system platform, 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.

Nanya Technology Corporation invested NT\$41.27 million and completed a total of 25 energy conservation management projects in 2022, and total energy conservation benefits reached 4,378 MWh/year (1.58×10^7 MJ/year); 28 energy conservation management projects (23 new projects and 5 ongoing projects) will be implemented in 2023 and are expected to provide energy conservation benefits reaching 5,055 MWh/year (1.82×10^7 MJ/year), all from reducing electricity consumption. We have constantly paid attention to issues on energy conservation and carbon reduction, and made an effort to implement related measures. At the High-Tech Energy Conservation and Carbon Reduction Forum held by the Taiwan Semiconductor Industry Association (TSIA), we joined in the declaration of voluntary energy conservation and carbon reduction. We also received the Excellence Award in the Smart Energy Savings Competition of New Taipei City in 2019. At the 2021 Taiwan Corporate Sustainability Awards, we received the Climate Leadership Award for our energy conservation and carbon reduction project for the second consecutive year. Furthermore, we separated ourselves from other companies with excellent environmental protection performance in 2022 under the themes "energy-efficient memory" and "green manufacturing", and led Taiwan's DRAM industry in winning the Silver Award in the National Enterprise Environmental Protection Award from the Environmental Protection Administration, Executive Yuan for the second consecutive year.

Action plans

2022

Description

- 11 projects to improve equipment efficiency, 8 projects to save electricity consumed by lighting, and 6 projects for equipment energy conservation management.
- Total energy conservation: 4,378 MWh/year.

Number of projects

25

Carbon reduction (metric tons CO₂e)

2,229

Plans for 2023

Description

- 5 projects to improve equipment efficiency, 5 projects to save electricity consumed by lighting, and 18 projects for equipment energy conservation management.
- Total energy conservation: 5,055 MWh/year.

Number of projects

28

Carbon reduction (metric tons CO₂e)

2,573

Energy consumption real-time monitoring platform



Note 1: Electricity CO₂e emission is based on the electricity carbon emission factor = 0.509 kgCO₂e/kWh, published in 2021 by the Bureau of Energy, Ministry of Economic Affairs

Note 2: Based on the Energy Product Unit Heating Value Table updated in 2020 by the Bureau of Energy 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 Bureau of Energy for unit conversion, 1 kWh of electricity = 860 kcal; 1 cubic meter of natural gas = 9,000 kcal)

Note 4: Natural gas 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).

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 Technology Corporation launched the Alliance for Water Stewardship (AWS) – International Water Resource Management Standard Certification Project in 2022, comprehensively enhancing water resource management functions with the goal of obtaining platinum level certification in 2023.

Our 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 2021 and leadership level "A" in 2022. Nanya was recognized for its efforts in climate change and water resource management for global sustainability in 2022 with the "Water Resource Management Leadership Award" in the 15th TCSA.

Nanya's main strategies for water resource management are as follows, all strategies and requirements cover all operations, research and development, production and other bases; relevant water use, water conservation and risk assessment of water use are gathered in the board of directors for reporting and review every year.

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

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

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

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

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

Water Resources Structure

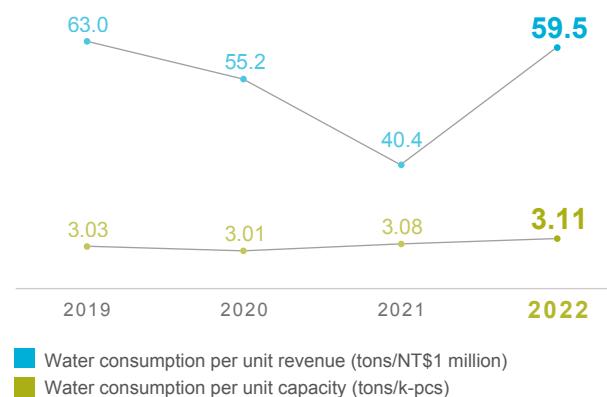
Nanya's total water withdrawal was 3,388 thousand m³ in 2022, in which Taoyuan Canal is the main source of water, accounting for approximately 96.6% (3,274 thousand m³), followed by well water at approximately 1.8% (60 thousand m³), tap water at approximately 0.8% (26 thousand m³), and rainwater at approximately 0.8% (28 thousand m³). Our production capacity in 2022 decreased 3.05% compared to 2021, and revenue decreased 33.5% compared to 2021. Due to the decrease in production capacity, total water withdrawal decreased 2% compared to 2021. In terms of water use intensity, water consumption per unit production capacity was 3.11 metric tons/thousand die in 2022 (up 1.1% compared to 2021), and water consumption per unit revenue was 59.5 metric tons/NT\$1 million (up 47.3% compared to 2021). Ultra-pure water consumption for the year was 3,578 thousand m³ in 2022 (up 1.7% compared to 2021), ultra-pure water consumption per unit production capacity was 3.29 metric tons/thousand die (up 4.9% compared to 2021), and ultra-pure water consumption per unit revenue was 62.8 metric tons/NT\$1 million (up 53% compared to 2021).

Nanya water consumption

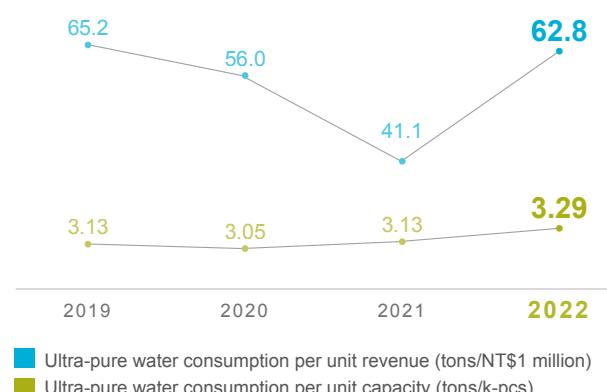
Unit (thousand m ³)			
2019	2020	2021	2022
Water withdrawal (A)			
3,258	3,369	3,456	3,388
Water discharge (B)			
2,634	2,705	2,718	2,695
Water consumption (A-B)			
624	664	738	693
Changes in water storage¹			
0	0	0	0

Note1: Changes water storage = Water storage on 2022/12/31 – Water storage on 2022/1/1

Run chart of 2019-2022 water consumption



Run chart of 2019-2022 ultra-pure water consumption



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. Currently, Nanya Technology Corporation (NTC) has only one production plant located in New Taipei City, Taiwan. Taiwan's rainfall is unevenly distributed between regions and seasons, which often results in regional and seasonal droughts. Nanya Technology Corporation has used the WRI Aqueduct, tools for simulating water resource scenarios, to analyze the geographical location of the plant. The water source is the Taoyuan Canal of Shihmen Reservoir, which supplies 96.5% of water. The water stress assessment result was "low", meaning that it is a non-water stress area. Furthermore, Nanya Technology Corporation's water source Shihmen Reservoir supplies approximately 800 thousand m³/day. The Company's daily water consumption is approximately 10 thousand m³. Hence, the effect of Nanya Technology Corporation's operations on regional water use is 1.25%. Other operating bases include Taiwan Hsinchu Design Center and overseas design centers and sales offices (including San Jose, USA, Houston, USA, Burlington, USA, Dusseldorf, Germany, Shenzhen, China, and Tokyo, Japan). As an office, there is no production activity, and there is no risk related to affecting operations. 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 Promotion 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 thousand m³ and two detention basins each with a capacity of 4.06 thousand m³ have been built in the plant to effectively harvest rainwater during the rainy season. Moreover, Nanya Technology Corporation 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.

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. Currently, the main directions promoted are as follows, the implementation of water conservation covers all operations, research and development, production and other bases.

-  **Implement water-saving results through work guidelines.**
-  **Reach the reduction effects through methods of conservation such as reduction and recycling.**
-  **Promote water conservation through daily management practices.**
-  **Build waste water classification treatment and adopt multiple recycling to maximize the use of water resources.**

Nanya actively implements water conservation measures and plants currently have acid-alkaline waste water, hydrofluoric waste water, and organic waste water recovery systems. Along with the implementation of various water saving measures, the process water recycling rate reached 92.9% in 2022. In 2022, the water recycled and reused from waste water recovery systems, process recovery systems, waste water from pure water processes, and rainfall harvesting methods totaled 5,700 thousand m³, accounting for 168% of the Company's water consumption. In 2022, the equipment improvement and expansion of the FAB 3AN hydrofluoric wastewater recovery system be completed, with an investment of 37.39 million yuan, which can increase the recycled water volume by another 430 CMD. In the future, to coordinate with the expansion plan of plant area, an estimate of NT\$430 million has been invested in building new hydrofluoric waste water COD and total nitrogen treatment systems, which not only will solve the problem of excessively high hydrofluoric waste water COD and total nitrogen, but also recover the waste water at the same time. It is estimated that additional 1 thousand m³ of waste water will be recovered daily. The system was completed in 2022 and will be operational in 2023.

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

Cooperation and Communication

Besides implementing internal water resource management and evaluation, Nanya is also actively implementing water conservation measures and water recovery and reuse, and participates in the industry association for water conservation related guidance and experience sharing.

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.



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.



Suppliers

- Suppliers are required to sign the Commitment to Corporate Social Responsibility. Water resource management items are planned in the supplier risk assessment questionnaire and TCFD physical risk identification are carried out to compile an inventory of suppliers' water resource risks, and ensure that they have water resource management measures and an emergency response plan when there is a water shortage. On-site audits are conducted for high risk and key suppliers, and guidance is provided to improve their deficiencies. We also share, exchange, and provide guidance to suppliers for water management and conservation measures through supplier meetings, in order to improve their water management measures. In November 2022, the third "Nanya Technology Sustainable Supply Chain Seminar" was held continuously, inviting experts and nearly 20 senior executives of concerned suppliers to jointly invest in the sustainable development of enterprises. In 2022, all first-tier suppliers (including suppliers of concern) have completed the sustainability risk assessment (282 questionnaires were sent, and 100% were returned). In the future, we will gradually provide water-saving understanding and counseling for manufacturers with high water management risks and high water consumption. (It is expected to complete 12 manufacturers in 2023)



Local residents

- Nanya Technology Corporation 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.

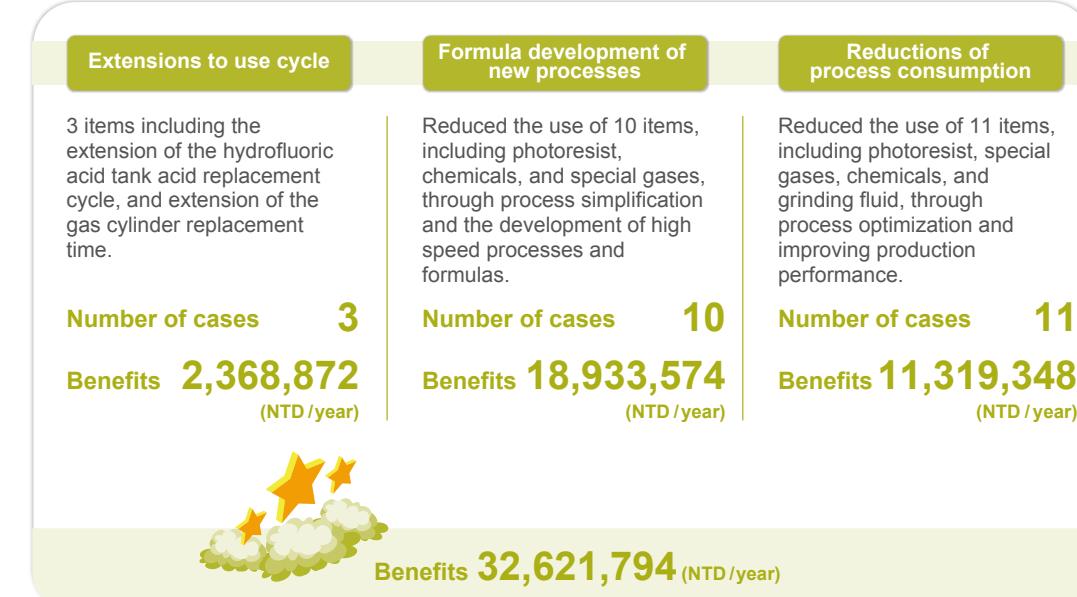


Raw Materials Reduction and Reuse

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 24 entries in improvement proposals regarding the consumption of raw materials were completed in 2022, including formula development of new processes, reductions of process time, extensions to use cycle, and reductions of process consumption. Among improvement plans in 2022, improvement to the photoresist verification and management method for the lithography effectively improved photoresist usage efficiency, and reduced consumption of photoresist SHB1736/SH114A by approximately 47 kg (6%), which was the greatest benefit.

Performance of raw material consumption improvement proposals in 2022



Plans and measures

Reduction (metric ton/year)

Waste sulfuric acid, hydrogen peroxide, ammonia water: Process optimization	355
Waste hydrofluoric acid reduction: Extension of acid replacement cycle	30
Waste slurry	13
Waste photoresist reduction: Process optimization	2
Total reduction	400

Use and output of raw materials

Input

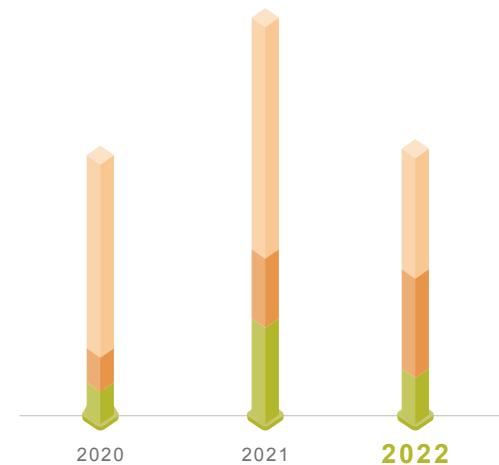
	Consumption	Renewable	Non-renewable
Raw wafers (thousand slices-12-inch)	781		●
Process chemicals (metric ton)	54,462		●
Process gases (million M ³)	6,741		●
Electricity (million kWh)	744		●
Clean water (1,000 m ³)	3,388		●
Packaging materials for wafers (metric ton)	96	27%	73%



Output

	Output volume
Raw wafers (thousand slices-12-inch)	809
Greenhouse Gas Emissions (Metric ton-CO ₂ e)	440,954
Volatile organic compounds (metric ton)	17.3
Sulfide (metric ton)	1.656
Nitrogen oxides (metric ton)	10.497
Volume of waste water (1,000 m ³)	2,695
General industrial wastes (metric ton)	6,383
Hazardous industrial wastes (metric ton)	17,598
Electronic waste (metric ton)	4.2

Improved performance of raw material consumption



● Reductions of process consumption

● Formula development of new processes

● Extensions to use cycle

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). This not only reduces the cost of purchasing whole new monitor wafers, but also reduces the amount of waste generated.

Starting in 2017, the supplementing yield of each supplier is used as an important

indicator for allocation. Besides considering the price quotations of suppliers, high supplementing yield wafers will increase the quantity of wafers reclaimed and increase the percentage of reclaim wafers used for production.

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 87%, and recycling rate increased from 77% in 2019 to 79% in 2021 and further to 82% in 2022 due to the stability of supplementing yield.

Supplementing yield and utilization of reclaim wafers in 2019-2022

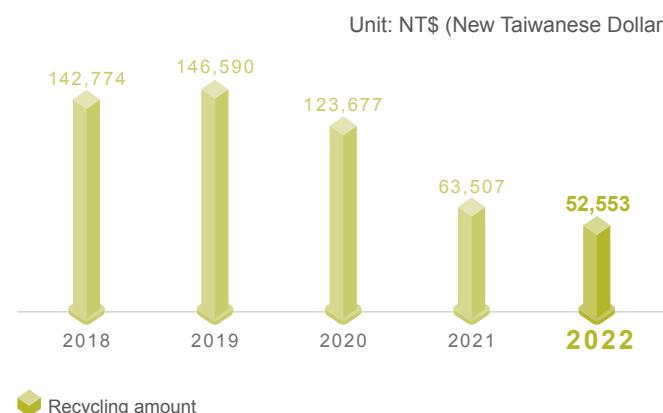


Product testing and reclamation of delivery packaging materials

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 15,000 pieces of brand-new 12-inch wafer cassettes every year, equivalent to reducing the consumption of 69 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:



Recycling Outside Plant

Nanya Technology Corporation outsources the disposal of 100% of the waste it generates. The waste is processed into industrial raw materials, construction materials, or other raw materials, including usage as fuel for incinerators. The percentage of waste that was recycled in 2022 reached 92.1%, in which 97.4% of hazardous waste was recycled.

List of waste generated by Nanya that is recycled externally

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.

After collecting waste photoresist in the factory, it is recycled and reused to make industrial grade PGMEA and EBR.

After collecting waste sulfuric acid in the factory, it is recycled and reused to make industrial grade sulfuric acid.

After collecting waste phosphoric acid, the recycling company increases its purity to make industrial grade phosphoric acid.

After collecting waste ammonium sulfate, the recycling company uses it to make industrial grade ammonium sulfate.

After collecting waste ammonium fluoride/hydrofluoric acid, the recycling company uses it to make sodium hexafluoroaluminate.

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.

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.

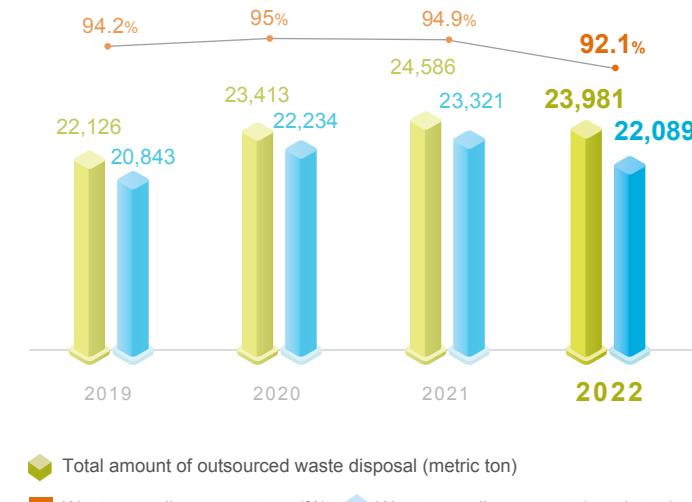
After collecting organic wastewater, it goes through the biological treatment system and generates organic sludge, which can be made into raw materials for ready mix concrete and construction materials after thermal treatment.

After collecting waste SOD, the recycling company uses it to make lacquer thinner.

The inorganic sludge consisting of river sand generated from filtering water is provided to brick factories to make bricks for construction.

Summary of outsourced recycling and reuse of waste generated by Nanya

Total amount of outsourced waste disposal

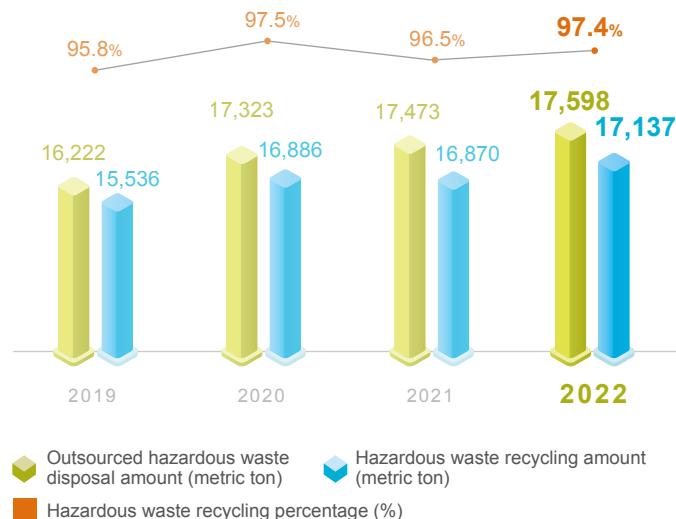


Amount of general waste recycling



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.

Hazardous waste recycling amount



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.



Nanya circular economy –
Video of treatment and reuse of waste liquid
containing copper

Ecological Protection

Nanya Technology Corporation's production location is in Taishan Nanlin Science Park, which is on a low-altitude hill. Most trees in the area were artificially planted for landscaping, and the forests in surrounding areas are mainly secondary. There are no habitats being protected or rehabilitated where the factory is located and in surrounding areas. Even so, the Company still attaches great importance to ecological resources in surrounding areas, and conducts thorough investigation and impact assessments of the surrounding ecological environment in the development and operations of its factory. We also proposed mitigation and avoidance strategies, in order to avoid and reduce the potential impact of development and operations on biodiversity.

Biodiversity management organization and policy

Nanya Technology Corporation pays attention to and shoulders the responsibility of biodiversity. We formulated a biodiversity policy and reported it to the Sustainable Development Committee and Board of Directors (Chapter 2 Sustainable Governance and Organization of this report). The biodiversity policy is as follows:

To not carry out operating activities in important biodiversity locations or its nearby areas in Taiwan and overseas



If operating activities are near biodiversity areas, we implement mitigation measures (avoid, minimize, restore, and offset)



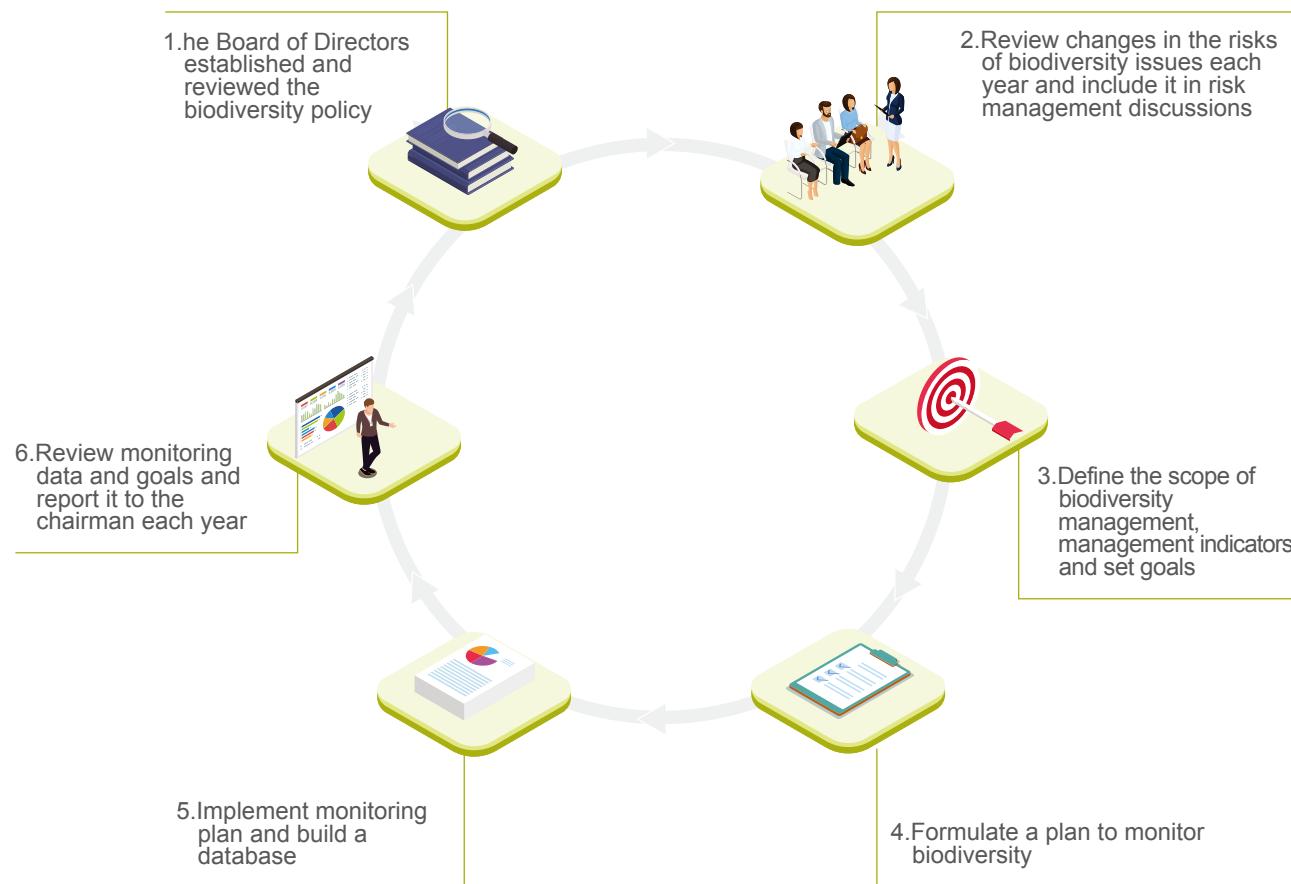
Work together with external partners in implementing the biodiversity policy



Conduct ecological surveys of the surrounding areas of operating activities

Biodiversity Management Cycle

Biodiversity management cycle

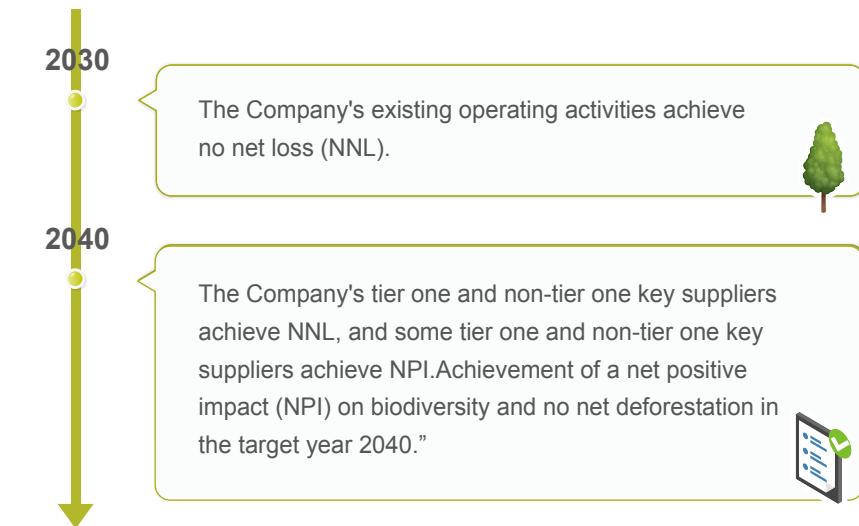


Biodiversity risk assessment (impact of stakeholders on operations, impact on sustainable development, and survey of risks of concern)

When determining the materiality of Nanya Technology Corporation's biodiversity issues to sustainability, results indicated that stakeholders do not have any risks that impact the Company's operations and sustainable development with respect to biodiversity and are not effectively monitored. Still, Nanya Technology Corporation began commissioning an ecological monitoring company a decade ago to conduct an ecological survey on production sites and nearby areas affected by operating activities, in order to show our concern and sense of responsibility towards biodiversity management.

Biodiversity Goals

Nanya Technology Corporation set biodiversity goals for the Company in 2030, and 2040, in hopes of having a greater positive impact on biodiversity in the overall supply chain.



When selecting quantified indicators for judgments in biodiversity management, we selected and use two indicators for monitoring and managing biodiversity, specifically Shannon's diversity index or Shannon-Wiener Index and Pielou's evenness index, in which the average diversity index of the past 3 observations during the same period in previous years multiplied by 0.9 is used as the biodiversity goal for the following year, and used to determine if NNL or NPI was achieved. Meanwhile, an evenness index of 0.8 is used to determine if biological distribution meets evenness goals, and further determine mitigation measures for the ecological impact of the Company's operating activity cycle in the following year.

NNL: The diversity index uses the average of the past 3 observations during the same period in previous years as the biodiversity goal. If the observed value is not lower than the goal, then it is deemed to achieve NNL.

NPI: The diversity index uses the average of the past 3 observations during the same period in previous years as the biodiversity goal. If the observed value is higher than the goal, then it is deemed to achieve NPI.

Nanya Technology Corporation fully understands that its operating activities may impact biodiversity, and thus spent nearly NT\$10 million each year on environmental and ecological monitoring services between 2013 and 2022 according to the biodiversity management cycle that we established. We commissioned a professional ecology company to conduct air quality (including noise and vibration), wastewater monitoring (including effluents and river water), groundwater sampling, traffic, and an ecological survey (not only includes production bases, but also extends 500 m outward) during our operations. Surveys are conducted on a quarterly basis during normal operations, and changed to monthly surveys during construction periods. Categories of the ecological survey include plants on land, mammals, birds, reptiles, amphibians, and butterflies.



| Nanya Technology Corporation's production bases and extended areas nearby

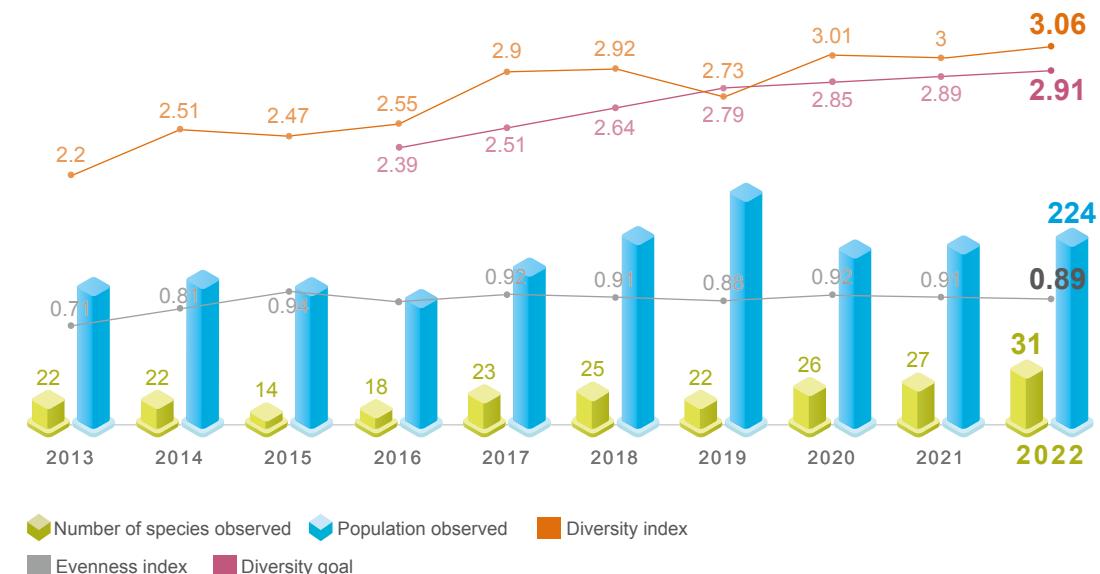
We use the bird observation trends in ecological survey data as an example (observations every July in 2013-2022 were used to draw the chart of observation values)

In the project site, a total of 224 birds of 31 species were observed in July 2022 (2 protected species were observed, including 1 Spilornis Cheela, a category 2 protected species, and 8 Urocissa caerulea, a category 3 protected species; protected species accounted for 7%), the diversity index was 3.06 and evenness index was 0.89, which were higher than the goals for diversity index to reach 2.91 and evenness index to be greater than 0.8; we also set the target diversity index for July 2023 at 3.02.

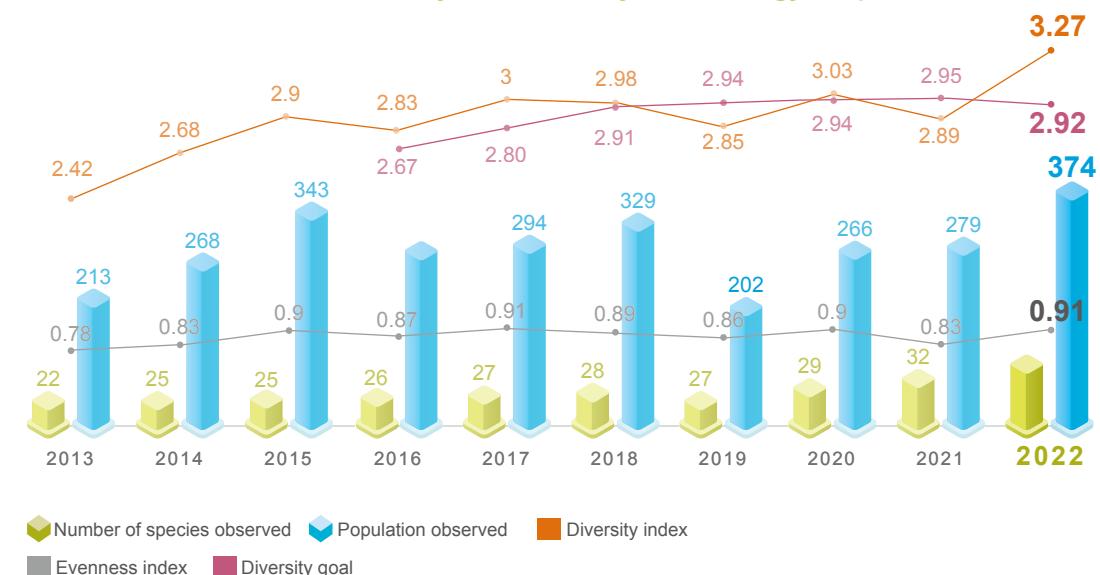
In nearby areas, a total of 374 birds of 37 species were observed (in which 2 protected species were observed, including 4 Spilornis Cheela, a category 2 protected species, 1 Accipiter trivirgatus, a category 2 protected species, and 8 Urocissa caerulea, a category 3 protected species; protected species accounted for 8%), the diversity index was 3.27 and evenness index was 0.91, which were higher than the goals for diversity index to reach 2.92 and evenness index to be greater than 0.8; we also set the target diversity index for July 2023 at 3.06.

We believe that the bird ecology observed in July 2022 due to operating activities of Nanya Technology Corporation meet NNL and NPI. This example describes how Nanya Technology Corporation uses biodiversity management cycle, ecological observation data analysis, and recommendations from a professional ecology company for rolling biodiversity management.

Bird observation trends at the project site of Nanya Technology Corporation



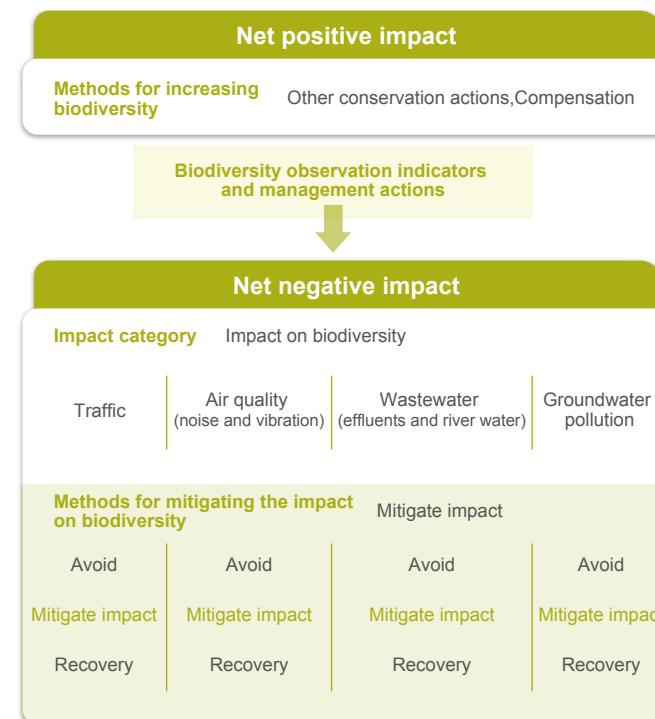
Bird observation trends in nearby areas of Nanya Technology Corporation



Measures to mitigate impact on biodiversity

Nanya Technology Corporation applies the biodiversity impact management framework to manage and mitigate its impact on biodiversity and ecosystems. The mitigation hierarchy includes avoid, minimize, restore, and offset. "Avoid" and "minimize" are the Company's most important measures. For example, the Company has analyzed the impact of the new factory development plan on surrounding plant ecology, habitats, and water environment, and taken measures to avoid and mitigate impact. If operations or development will still damage the ecosystem after taking measures to avoid and mitigate impact, the Company will take "restore" measures in the damaged areas, and will take "compensate" measures (e.g. forestation, setting up an environmental trust fund and transferring it to the government or non-profit organizations to improve or restore the environment) if restore measures still cannot reduce losses, in order to compensate for the impact on biodiversity.

Biodiversity impact management framework



Based on the biodiversity impact management framework, Nanya Technology Corporation formulated measures to avoid and mitigate impact on plant ecology, animal ecology, and aquatic ecology in the site of the production plan and nearby areas during the construction and operation periods. We increased the ecological monitoring frequency to once a month, in order to intervene in a timely manner when an impact occurs.

Plant ecology



Construction period impacts

- Plants in some construction areas were removed and result in a decrease in population.
- The construction causes dust to cover the surface of leaves, and may result in poor plant growth.

Operation period impacts

- Traffic flow causes dust to cover the surface of leaves, and may result in poor plant growth

Avoid

- Plan the route of transportation vehicles in advance, and ensure that the vehicles transport gravel and heavy machinery according to the route to limit the area affected by dust.
- Vehicles used to transport gravel must be covered by canvas or dust cloth.

Mitigate impact

- Plant native or endemic plants in the form of a multiple layered forest.
- When transportation vehicles enter and exit the construction site, they must first go through a washing station to reduce dust.
- Cover gravel with canvas or dust cloth during temporary storage, so as to prevent dust and the growth of invasive plants.
- Water plants on both sides of the planned route to reduce the impact of dust on plant growth.

Animal ecology



Construction period impacts

- Disturbance from noise and vibrations, nighttime lighting, construction vehicles, personnel activities, and waste impact the original habitat and land animals active in the construction area.

Operation period impacts

- There was no significant impact on surrounding animals during the operation period.

Avoid

- Domestic waste generated by construction workers must be collected in a covered storage facility or properly wrapped and disposed of, in order to prevent it from being eaten by wild animals, or causing secondary damages due to spilling in the transportation process.
- Avoid using vehicles in poor condition that generate high noise.
- The use of chemical agents is prohibited and manual grass cutting and rat traps are used for environmental protection, in order to poisoning and killing wild animals.

Mitigate impact

- Low landscape fixtures are used to limit the range of lighting for trails, automatic sensors are installed and a timer is set to turn off the lights at night, reducing the disturbance caused by light to nocturnal animals.

Aquatic ecology



Construction period impacts

- If wastewater with relatively high sand content or domestic wastewater generated by construction personnel is directly discharged into nearby water bodies, it will contaminate the water.

Operation period impacts

- If wastewater and waste is directly discharged or disposed near water bodies, it will impact the water ecology of surrounding areas.

Avoid

- Construction waste water is prohibited from being discharged into rivers, and waste is prohibited from being placed on river banks.
- Muddy water generated from construction at construction sites and soil resource sites must be prevented from flowing into surrounding low-lying areas and further affecting the water ecology in the areas.
- Set up pipelines for centralized discharge of rain water collected from roads during the operation area.
- Wastewater discharge must comply with regulations of the Environmental Protection Administration.

Mitigate impact

- Periodically monitor the water quality and ecology of surrounding water environments during the construction period, in order to lower the impact of local water quality on water ecology to nocturnal animals.

Cooperation with External Partners

It is necessary to work together with external partners to have a positive impact on biodiversity. Hence, the Company is actively working with ecological monitoring companies and NGOs to better understand the impact of NTC's operations on biodiversity, and formulate more effective methods to manage biodiversity.

Cooperation with ecological monitoring company

Nanya Technology Corporation began working with a professional ecology company in 2008, and it helps the Company conduct surveys on ecological resources, such as animal and plant ecology in water and on land. Ecological monitoring is conducted on a monthly basis during the factory development period, and conducted on a quarterly basis during the operation period; the ecological company recommends response measures for abnormal situations. The Company conducts comprehensive reviews and formulates improvement measures based on recommendations from the ecology company, in order to lower the impact on biodiversity.

Cooperation with NGOs

Nanya and CommonWealth Magazine jointly supported the Tamsui River Convention in 2020, and also worked with the NGO – The Society of Wilderness in co-organizing ecological environment conservation activities, such as removing Mikania micrantha from Wugu Wetland, organizing parent-child camps (understanding the rich ecology in areas surrounding the factory), and admiring swallow and understanding the biodiversity of Wugu Wetland. The activities allow participants to understand the relationship between the Company and biodiversity in surrounding areas, and improve employees' understanding and awareness of the ecological environment.

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

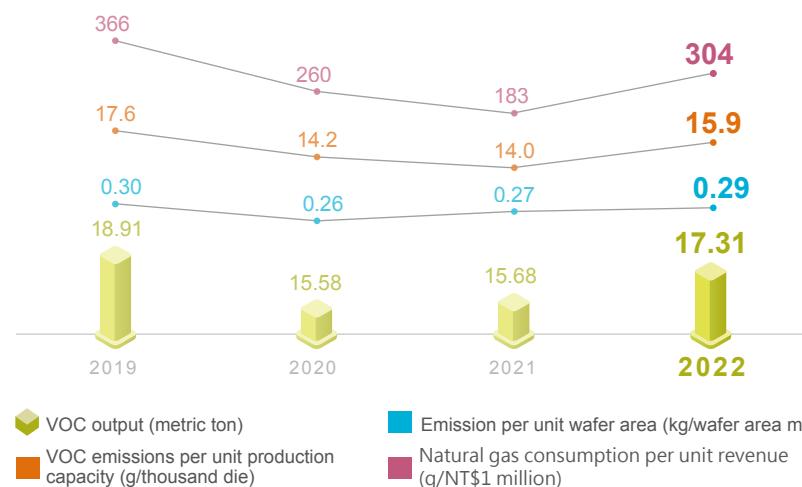
Since the plant was set up, we have put great emphasis on pollution control. Not only have we effectively reduced material consumption and lowered the concentration of waste gas emission, but also have used air pollution control equipment in compliance with statutory standards, including local scrubber, acid/alkaline scrubbers, the VOC zeolite rotor concentration equipment, and post-combustion machinery. Testing proved that the pollutant emission standards set forth in environmental protection regulations of the government were all met (lower than) over the years. 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 Technology Corporation'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. Waste gases are channeled to suitable treatment processes and equipment based on their characteristics. Waste gases are channeled into local scrubbers after being generated on the process end. After removing specific substances, acidic or alkaline waste gases are concentrated in acid/alkaline scrubbers and released into the atmosphere after treatment. 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) was 0.29 kg VOCs/m² in 2022.

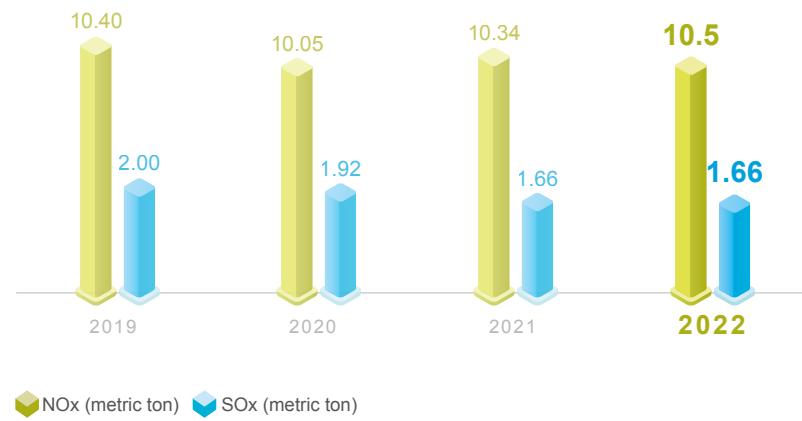
Flowchart of waste gas treatment



VOC emission trends in 2022



Other air pollutant emission trends in 2019-2022



Water Pollution Control

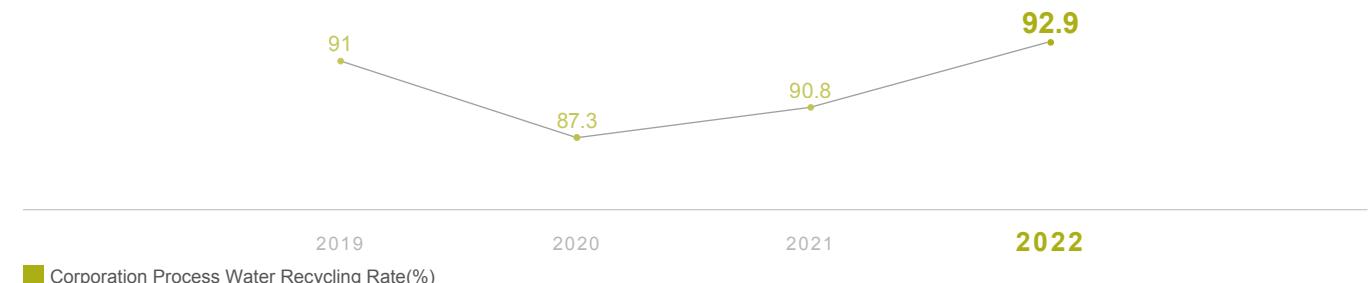
All wastewater generated by Nanya is collected according to property classification and channeled into proper wastewater equipment for treatment. To ensure that the quality of discharged wastewater is in line with regulations, we and the Environmental Protection Department have monitored the quality 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. 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 over 20 different pipelines. The wastewater is mainly classified into organic wastewater, general acidic and alkaline wastewater, hydrofluoric wastewater, and high-concentration liquid waste that is outsourced for treatment. 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. 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.

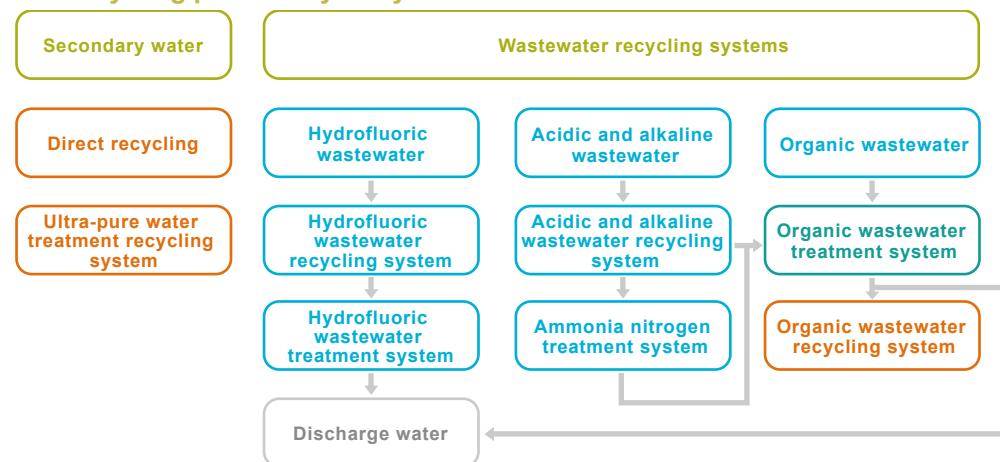
Total waste water discharge volume was 2,695 thousand m³ in 2022, down 0.86% compared to 2021; wastewater discharge volume per unit capacity increased 2.3%, revenue decreased 33.5% compared to 2021, while wastewater discharge volume per unit revenue increased 49%. In coordination with the expansion of FAB-3A-N by Nanya Technology Corporation in 2016, additional wastewater systems and recycling systems were installed. These systems were classified into the following types: acidic and alkaline, organic, and hydrofluoric acid (HF) wastewater systems. The original acidic and alkaline wastewater system was equipped with a reclamation system. In 2017, a reclamation system with reverse osmosis (RO) was added, which could increase 0.288 thousand m³ of reclaimed water per day. With the expansion of the new plant, the installation of additional organic wastewater reclamation system was completed in 2017, which could increase 1.5 thousand m³ of reclaimed water per day. In 2018, the installation of hydrofluoric wastewater reclamation system was completed, which could increase 0.5 thousand m³ of reclaimed hydrofluoric wastewater. Because of the increase in the reclamation volume of wastewater, the annual average process water recycling rate reached 92.9% Note1 in 2022. To coordinate with the expansion of a new factory, we have invested NT\$430 million in building new hydrofluoric wastewater COD and total nitrogen treatment systems. This not only will solve the problem of excessively high hydrofluoric wastewater COD and total nitrogen, but also will recover wastewater at the same time. It is estimated that additional 1 thousand m³ of wastewater will be recovered per day. The systems will be completed and begin operating in March 2023. In response to the decrease in sludge treatment plants and the ever stricter acceptable criteria, starting in 2017, additional isopropanol-concentration system had been built to reduce the load of wastewater COD. In addition, organic sludge dewatering equipment was added, which was completed in 2018, and the moisture content of sludge can be reduced from 84% to below 60%

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

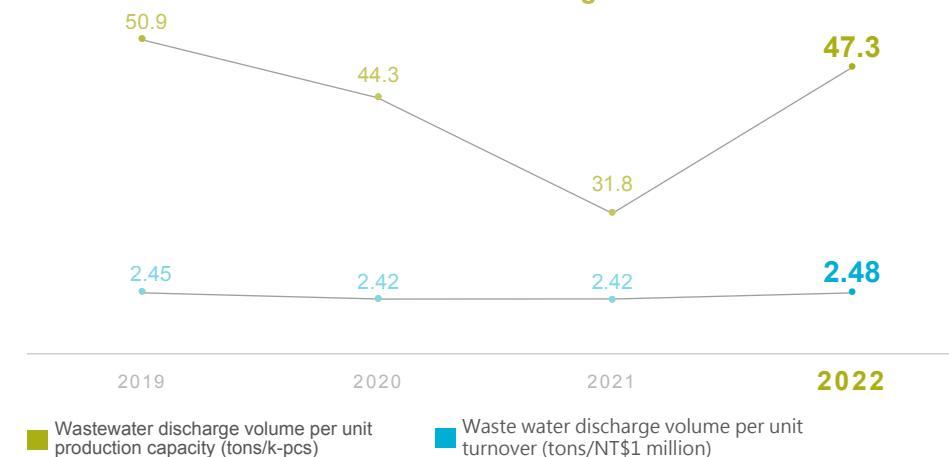
Nanya Technology Corporation Process Water Recycling Rate in 2019-2022



Waste water recycling process by Nanya



Run chart of 2019-2022 waste water discharge



Types and volume of wastewater discharged by Nanya

Total water discharge (thousand m³)

2019	2020	2021	2022
------	------	------	------

Divided based on destination¹

Fresh surface water	2,634	2,705	2,718	2,695
Groundwater, seawater, third party water ² , third party water supplied to other organizations ³	0	0	0	0
Total water discharge	2,634	2,705	2,718	2,695
Freshwater (Total dissolved solids ≤ 1,000 mg/L)	2,634	2,705	2,718	2,695
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 Environmental Protection Administration	2,634	2,705	2,718	2,695

Note 1: 1 thousand m³ = 1,000 tons

Note 2: The destination of wastewater discharged by Nanya is Dake River (surface water), which is not located in an area with water stress.

Note 3: 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

Testing results of discharged wastewater quality in 2022

Minimum	Mean	Maximum	Compliant or non-compliant with standards
pH Statutory standards: 6-9			
7	7.3	7.5	Compliant
Chemical oxygen demand (COD) Statutory standards:<100 (mg/L)			
40.5	49.3	59.5	Compliant
Suspended solids(SS) Statutory standards:<30 (mg/L)			
3.2	5.3	6.6	Compliant
Fluoride ion Statutory standards:<15 (mg/L)			
8.63	10.6	13	Compliant
Ammonia nitrogen Statutory standards:<30 (mg/L)			
1.75	7.3	9.35	Compliant

Waste Management

Waste Generate Structure

Nanya Technology Corporation generated a total of 23,981 metric tons of waste in 2022, and recycled and reused 22,089 metric tons of waste (including waste that was incinerated and used as energy or disposed of using other methods), accounting for 92.1% of total waste generated. Recycling and reuse of waste was 100% outsourced (none of the waste was recycled and reused in our own factory). In 2022, 5,799 metric tons of waste generated by Nanya Technology Corporation was directly

disposed, in which 3,907 metric tons was incinerated and used as energy, accounting for 16.3% of total waste generated; 1,052 metric tons of waste was directly incinerated, accounting for 4.4% of total waste generated; none of the waste was directly buried, but 105 metric tons of waste was solidified and then buried, accounting for 0.4% of total waste generated; 736 metric tons of waste was disposed of using other methods (including physical treatment and recycling, purification and reuse), accounting for 3.1% of total waste generated.

Nanya Technology Corporation's waste generated per unit wafer area was 22.02 kg/kpcs 4Gb eq in 2022, up 0.6% compared to 2022; outsourced hazardous waste disposal amount was 17,598 metric tons, and hazardous waste generated per unit capacity was 16.16 kg/kpcs 4Gb eq, up 3.6% compared to 2021. The treatment of 100% of our main hazardous industrial wastes (acidic waste liquids containing sulfuric acid, phosphoric acid, and hydrofluoric acid) was outsourced and reused used as industrial materials. The recycling rate of hazardous industrial waste reached 97.4% or 17,137 metric tons. The Company will continue to take measures to reduce waste and increase recycling in order to reach the sustainable development goal of effective recycling of wastes.

Furthermore, electronic waste generated by the Company is mainly discarded wafers and defective products. The total weight was 4.34 metric tons and all of the electronic waste was handled by an external contractor, achieving 100% recycling.

Waste Generated in 2022

Unit: Metric Ton

	Generated	Diverted from Disposal	Directed to Disposal
Hazardous waste			
Acidic waste liquid	15,206	14,582	624
Waste solvent	2,353	0	2,353
Container	10	1	9
Electronic waste	4	0	4
Other	24	0	24
Subtotal	17,598	14,583	3,015
General waste (Non-hazardous waste)			
Sludge	5,422	3,507	1,916
Packaging materials	309	0	309
Consumer waste generated by employees	384	0	384
Waste mixed metals	20	1	20
Waste mixed plastics	50	0	50
Other	198	91	107
Subtotal	6,383	3,599	2,785
Total	23,981	18,182	5,799

Note: 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: There is a slight difference between the total output and the sum of the output of each detail, which is caused by rounding.

Waste Diverted from Disposal in 2022

Unit: Metric Ton

	Onsite	Offsite	Total
Hazardous waste			
Preparation for reuse	0	0	0
Recycling ¹	0	14,582	14,582
Other Recovery Operations	0	1	1
Subtotal	0	14,583	14,583
General waste (Non-hazardous waste)			
Preparation for reuse	0	1	1
Recycling ¹	0	3,598	3,598
Other Recovery	0	0	0
Operations	0	3,599	3,599
Subtotal	0	18,182	18,182

Waste Directed to Disposal in 2022

Unit: Metric Ton

	Onsite	Offsite	Total
Hazardous waste			
Incineration (with energy recovery)	0	2,554	2,554
Incineration (without energy recovery)	0	9	9
Landfilling	0	24	24
Other disposal operations ¹	0	428	428
Subtotal	0	3,015	3,015
General waste (Non-hazardous waste)			
Incineration (with energy recovery)	0	1,353	1,353
Incineration (without energy recovery)	0	1,043	1,043
Landfilling	0	81	81
Other disposal operations ²	0	308	308
Subtotal	0	2,785	2,785
Total	0	5,799	5,799

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

Note 2: Other disposal methods for general waste refers to physical treatment (broken down and sorted).

Note: There is a slight difference between the total output and the sum of the output of each detail, which is caused by rounding.

The general industrial wastes and the hazardous industrial wastes of the Nanya are all managed by the Output Department in terms of storage, clearance, detections, and reduction promotions. 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 confirm the legality of the contractors, ensure that all wastes are well-processed or recycled, and prevent impacts on the environment again. Nanya Technology Corporation did not ship any hazardous waste to other countries in 2014-2022, 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 2022.

**Impact sources**

- Used large numbers of 53-gallon drums of chemicals.
- Used large numbers of small gas cylinders, resulting in more residual gases.

Mitigation measures

- Replaced 53-gallon drums with tank trucks to store and transport chemicals or recycled empty drums.
- Replaced small gas cylinders with large cylinders to reduce residual gases and numbers of cylinders.

**Impact sources**

- Sources of raw materials and related materials contained hazardous substances.
- Used large numbers of acidic and alkaline chemicals.
- Used monitor wafers in large quantities.

Mitigation measures

- 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.
 - Completed 24 raw material consumption improvement proposals.
 - Recycled wastes in the plant, for example, copper sulfate waste liquid was directly converted to copper cakes for recycling.
 - Acidic wastes were outsourced for recycling, such as sulfuric acid and phosphoric acid.
 - Dummy wafers were recycled for 8-11 times.

**Impact sources**

- Products required many packaging materials.
- Products contained hazardous substances.

Mitigation measures

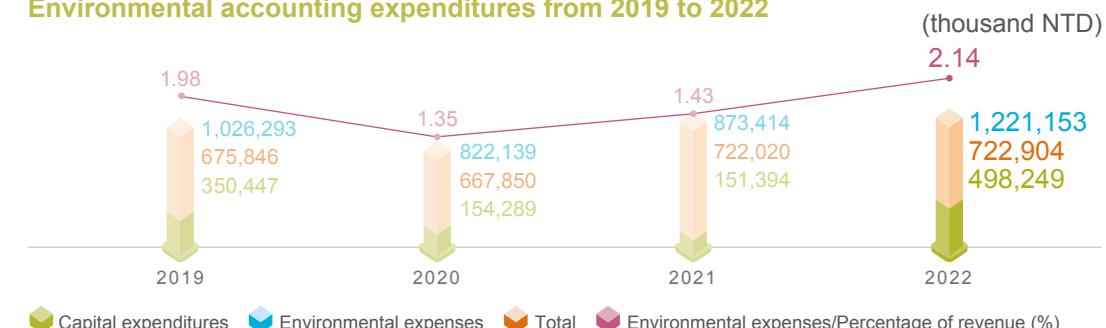
- Clients were encouraged to recycle packaging materials for Nanya to reuse.
- Waste electronic equipment had to conform to the EU's environmental protection directives, including WEEE, RoHS, and EuP.

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 Environmental Protection

Administration, 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 2022 was NT\$498,249 thousand, and the environmental expense was approximately NT\$722,904 thousand, totaling NT\$1,221,153 thousand. Environmental expenditures accounted for 2.04% of our 2022 consolidated revenue of NT\$56.952 billion.

Environmental accounting expenditures from 2019 to 2022



Environmental accounting expenditures in 2022 (thousand NTD)

	Recurrent expenditures	Capital expenditures
Operating costs		
Pollution prevention expenses: air pollution, water pollution, and other pollution prevention costs	564,617	498,249
Global environmental protection expenses: (1) Climate change prevention expenses (2) Other expenses related to global environmental protection	27,842	0
Resource and energy conservation and recycling expenses: (1) increase the efficiency of resource use (2) costs of waste reduction, recycling, and reprocessing (3) Energy expenses saved	111,683	0
Related costs from upstream and downstream of suppliers and customers	(1) Green procurement (2) Expenses of providing products for environmental protection	102
Management costs	(1) Personnel environmental education and training costs (2) Expenses incurred in obtaining external verification (3) Expenses incurred in measuring environmental impacts (4) Other	15,174
R&D costs	expenses incurred in researching and developing products because of environmental protection	0
Social activity costs	expenses incurred in improving the environment such as nature protection, afforestation, and landscaping the environment	788
Environmental taxation and fees	(1) Expenses incurred by air pollution (2) Pollution prevention review fee and certificate fee	2,698
Total	722,904	498,249
		1,221,153

Performance of promoting the ISO 14001 management solutions over the years

NT\$: thousand NTD

	2019	2020	2021	2022
Energy (electricity) conservation plan	64,934	52,397	18,166	11,680
Waste reduction program	3,360	234	3,759	0
Program of reducing consumption of process raw materials	5,221	6,865	4,973	8,233
Substantive benefits of industrial waste recycling	10,386	9,564	5,118	13,195
Electricity fees saved owing to low power consumption and advanced processes	697,553	888,574	969,353	1,081,896
Total benefits	781,454	957,634	1,001,369	1,117,026
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

Internal management system audit records in the last four years

ISO 14001 (2019~2022)

9 cases	Improvement was completed for 9 items, including environmental considerations form not updated, incorrect form version cited, and incomplete spot inspection records.	Case closing rate	100 %
7 cases	Improvement was completed for 7 items, including the environmental considerations form not updated or incorrect form version cited, management deficiencies at the waste storage site, management plan not periodically tracked, and follow up was not completed for new announced regulations.	Case closing rate	100 %
2 cases	Improvement was completed for 2 items, including management deficiencies at the waste storage site and management plan not periodically tracked.	Case closing rate	100 %
9 cases	Improvement was completed for 9 items, including labels in waste storage site not updated, inspection of environmental considerations incorrectly filled in, and significance evaluation incomplete or not updated.	Case closing rate	100 %

ISO 45001 (2019~2022)

13 cases	A total of 7 defects in integrity of filling in hazard identification forms, accounting for the majority of the defects, followed by 3 defects in failing to send staff to participate in consultations of workers; improvements were all completed.	Case closing rate	100 %
15 cases	A total of 7 defects in failing to comply with criteria for operations and site management, and problems in appropriateness of automated checklist content, accounting for the majority of the defects, followed by 4 defects in management of equipment cabinets for emergency response; improvements were all completed	Case closing rate	100 %
6 cases	Improvements were completed for incomplete hazard identification forms and regulation identification forms, as well as abnormal maintenance of environmental detectors.	Case closing rate	100 %
29 cases	Improvements were completed for hazards identification form incomplete, insufficient training, documents not updated, risk control measures inadequate, deficiencies in drills not included in amendments to regulations, and insufficient follow-up on abnormal events.	Case closing rate	100 %

6

Responsible Procurement

A Promoter of Shared Value

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Suppliers have always been Nanya'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 %

Completed three-year sustainability audit of key suppliers

Five years in a row

Completion rate of deficiency improvements in supplier sustainability audit reached 100%

35 suppliers

Number of suppliers that supported the Sustainable Development Mutual Benefit Initiative in 2022 (organized for the first time)





Strategy and Performance of Material Topics



Sustainable Supply Chain Management

Management of responsible minerals sourcing and conflict-free minerals : No conflict minerals have been used in any of Nanya's products
Supply chain risk management: Implement regular "quality, delivery, service, cost, technology, and sustainable management" evaluations for suppliers

2022 Goals	2022 Performance Target achievement status	2023 Goals
Use of non-conflict minerals : 100%	100%	Use of non-conflict minerals : 100%
Completion of the self-evaluation questionnaire by significant suppliers : 100%	100%	Completion of the self-evaluation questionnaire by significant suppliers : 100%
100% completion rate of deficiency improvements by suppliers with high sustainability risk in audits	100%	100% completion rate of deficiency improvements by suppliers with high sustainability risk in audits
100% of suppliers signing Supplier Code of Conduct	100%	100% of suppliers signing Supplier Code of Conduct
100% completion of audits and guidance for significant suppliers	100%	100% completion of audits and guidance for significant suppliers
Implement at least 2 supplier sustainability guidance projects <small>New</small>	2 cases	Implement at least 2 supplier sustainability guidance projects

Exceeded Achieved Partially achieved

6-1 Supply Chain Overview

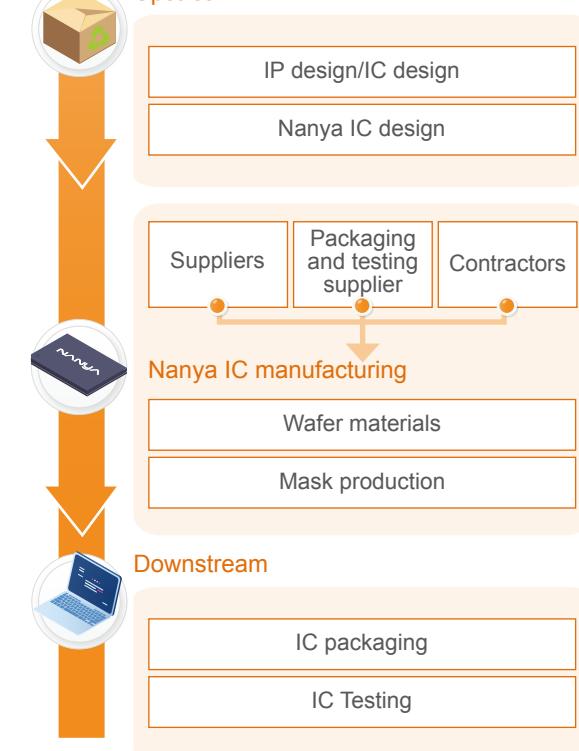
Nanya Industrial Chain

The IC industry (including DRAM) is categorized into upstream IC design, mask making/wafer materials, midstream IC production, and downstream IC packaging and testing. Nanya is committed to the research and development, design, production, and sales of IC products and we are primarily responsible for 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 industrial value chain.

Nanya Industrial Chain Upstream



Form of supply chain

The supply chain of Nanya Technology Corporation can be divided into suppliers and contractors based on the manufacturing process, and 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, including packaging materials for shipment).

To effectively manage suppliers and allocate resources, Nanya evaluates importance, risk, annual procurement amount, and sustainable development to screen "significant suppliers" that need to be managed (including tier 1 raw materials suppliers, non-tier 1 raw materials suppliers, and high risk suppliers).

Geographic distribution of suppliers

	2019	2020	2021	2022
Overview of Tier 1 Suppliers				
Asia	323	280	266	273
Americas	125	93	102	96
Europe	50	41	32	28
Oceania	41	31	31	18
Total	539	445	431	415

Overview of Non-Tier 1 Suppliers in 2022

Number of suppliers monitored	80
Number of non-tier 1 suppliers of concern	80

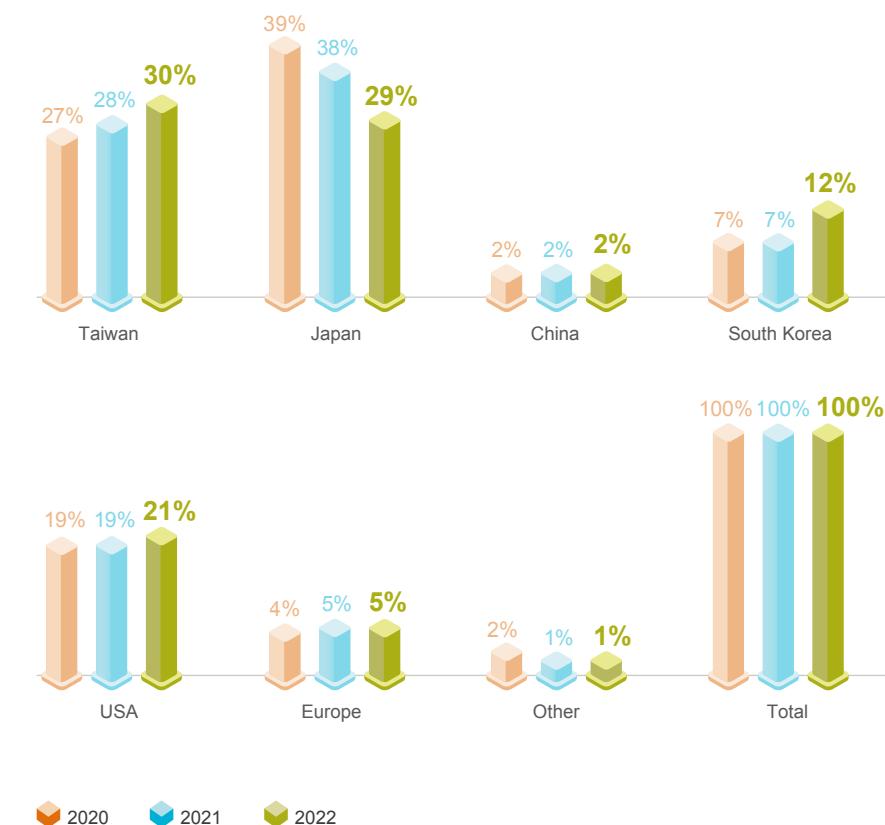
Number of tier 1 suppliers and suppliers of concern and percentage of procurement amount

Type of procurement	2019	2020	2021	2022
Raw materials				
Number of tier 1 suppliers	82	82	80	80
Number of tier 1 significant suppliers	82	82	80	80
Percentage accounted for by tier 1 significant suppliers (%)	100%	100%	100%	100%
Percentage of procurement amount accounted for by tier 1 significant suppliers (%)	100%	100%	100%	100%
Professional spare parts				
Number of tier 1 suppliers	248	222	215	202
Number of tier 1 significant suppliers	12	11	11	12
Percentage accounted for by tier 1 significant suppliers (%)	5%	5%	5%	6%
Percentage of procurement amount accounted for by tier 1 significant suppliers (%)	11%	2%	9%	4%

Local Procurement

Nanya prioritizes local procurement to facilitate stable development and cooperation with suppliers, provide faster service time, shorten delivery time, reduce unnecessary costs, and reduce the impact on the environment. 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 shall continue to cooperate with local suppliers to expand procurement and employment opportunities in Taiwan and create greater value in partnerships with suppliers.

Distribution of tier 1 suppliers by procurement region in 2020-2022



6-2 Sustainable Supply Chain Management

Sustainable Supply Chain Management Process

Sustainable Supply Chain Management Framework

Nanya Technology Corporation's emphasis on sustainable development is not limited to only the Company, but was further expanded to suppliers, particularly the ESG-related sustainable development needs of suppliers. We established a five-stage sustainable supply chain management process, and use sustainability regulations, active risk assessment and surveys, sustainability risk surveys, sustainability audits/improvement measures, and supplier capability development to manage and control supply chain risks and strengthen suppliers' sustainability performance. We hope to drive suppliers to grow with us and generate more shared value and influence through a series of sustainability management processes. In addition, the sustainable development of Nanya Technology Once a year, the committee regularly reports the effectiveness of supply chain management to the board of directors, so that senior executives can understand immediately.

Internal Personnel Training

We organize education and training courses on sustainability-related issues every year to help internal personnel better understand sustainable development and implement the sustainable development policy. A total of 7 courses were offered in 2022; the total length of the courses was 5 hours and there were 21,585 participants. The course titles are shown in the table below. Furthermore, training courses on sustainable supply chain management process are provided to the all procurement personnel every year, such as: supplier sustainability risk assessment standard and process, green procurement, etc.; total training hours is 1 hour. The courses help procurement personnel communicate Nanya Technology Corporation's sustainable supply chain management strategies with suppliers during routine operations.

sustainable supply chain management process	procurement personnel
Information Security Regulations	All colleagues in the company
Promotion of ISO 50001 Energy Management Systems	All colleagues in the company
Prevention of insider trading and handling of material insider information	All colleagues in the company
Promotion of labor and ethics policy	All colleagues in the company
Green product training	All colleagues in the company
General course on anti-corruption	All colleagues in the company
Introduction to risk management	All colleagues in the company

Supplier Education and Training

Nanya Technology Corporation organized the "2022 Nanya Technology Corporation Online Conference on Sustainable Supply Chains" on August 2, 2022 to let suppliers better understand its sustainable supply chain management process and sustainability goals. A total of 61 people from 24 suppliers participated in the online conference, which communicated Nanya Technology Corporation's ESG evaluation standards for suppliers and the goals and contents of environmental and human rights sustainability projects. We aim to work with suppliers in jointly creating sustainability value and a sustainable environment.

► Sustainable Supply Chain Development and Management Strategies

Sustainable Supply Chain Development Strategies

Nanya Technology Corporation firmly believes that the sustainable growth of supply chains has certain impacts on corporate sustainable development. Therefore, we actively invest related resources and cooperate with suppliers to drive sustainable growth of the overall supply chain and achieve shared value.

Nanya's sustainable supply chain development strategies:

- Sustainable supply chain 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 the overall supply chain
- 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 Minerals Sourcing**
Nanya is committed to a responsible procurement management strategy for the ban on Responsible Minerals Sourcing to satisfy current and future market, legal, and regulatory expectations

Sustainable Supply Chain Management Strategy

When Nanya is selecting suppliers that directly produce materials, the suppliers must go through rigorous evaluations and reviews in addition to third-party verifications, including ISO 9001 and ISO 14001. We use a digital supplier assessment and management system to conduct assessment of the Company's six supplier management strategies: "quality, delivery, services, costs, technology, and sustainable operations". The score for sustainable management indicators (sustainable operations) accounts for 15% to ensure compliance with the Company's requirements for sustainable supply chain development.

Six Strategies for Supply Chain Management¹



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.

Sustainable Supply Chain Risk Management Process

In addition to continuous requirements on the aspects of quality, delivery, and service, Nanya also established related risk management mechanisms. When external factors (such as: natural disasters, diseases, changes in global major events) result in the risk of running out of materials, Nanya Technology Corporation immediately initiates emergency response. Related departments, including materials, quality assurance, and engineering, jointly and swiftly formulate response plans, and review aspects of checking on material inventory, asking backup suppliers for materials, increasing stock levels of materials, and reviewing material consumption in process to monitor the risk. Methods include:

- Examine imported production materials and verify that inventory on site and at suppliers reach the safety stock during weekly meetings
- Verify the status of spare parts, verify production and shipment status, and that there are no production material risks each week
- Provide estimated demand to suppliers each month, and make rolling adjustments to the estimates of spare parts demand each month if the delivery by suppliers is delayed



Sustainability regulations

Nanya Technology Corporation established the Supplier Code of Conduct for suppliers to understand and gradually implement corporate sustainability. The Company provides suppliers with comprehensive training. The scope of the Supplier Code of Conduct includes laborers, health and safety, environment, code of ethics, management system, and biodiversity. Suppliers are required to sign the Supplier Code of Conduct every year and training completion rate was 100%.

Supplier Code of Conduct Coverage :

- Labor : Freely Chosen Employment、Working Hours、Wages and Benefits、Humane Treatment、Non-Discrimination
- HEALTH and SAFETY : Occupational Safety、Emergency Preparedness、Occupational Injury and Illness、Industrial Hygiene、Sanitation, Food, and Housing
- ENVIRONMENTAL : Pollution Prevention and Resource Reduction、Hazardous Substances、Air Emissions、Water Management、Energy Consumption and Greenhouse Gas Emissions
- ETHICS : Business Integrity、No Improper Advantage、Disclosure of Information、Intellectual Property、Responsible Sourcing of Minerals、Privacy
- MANAGEMENT SYSTEM : Company Commitment、Management Accountability and Responsibility、Legal and Customer Requirements、Risk Assessment and Risk Management、Worker Feedback, Participation and Grievance
- Ecological resources commitments、biodiversity、deforestation、and reservation

Supplier Code of Conduct signing and training	2022	2023 Goals
Number of supplier signatures	362	
Percentage of supplier signatures (%)	100%	100%
Training completion rate (%)	100%	100%

Note: Suppliers that have signed include tier 1 suppliers and non-tier 1 significant suppliers

Risk assessment process

Step 1 of risk assessment

Active risk assessment : Nanya Technology Corporation examines and surveys the region, procurement, and products supplied by all suppliers, and carries out a preliminary assessment and analysis of potential risks to monitor suppliers' sustainability risks, in order to better understand suppliers' sustainable development situation.

Risk factors for initial assessment :

- * Supplier's area : assess whether there are conflict minerals in the area, natural disaster risks, human rights risk factors, etc.
- * Product category supplied: Evaluate the materials used in the production of products Whether the material contains harmful substances (such as: RoHS/PFOS/PFAS...), whether there are alternative materials, etc.
- * Operation of supply : Assess whether the supplier has operational risks risk, whether there is an emergency response plan

Step 2 of risk assessment

Sustainability risk assessment questionnaire : Nanya Technology Corporation distributes sustainability risk assessment questionnaires to all tier 1 suppliers, and the questionnaires are collected after suppliers use the questionnaire for self-assessment, in order to ensure their implementation of sustainability issues. Suppliers are required to reply the implementation status of various sustainability issues on the questionnaire and provide certification documents issued by related management systems. The results of the suppliers' self-assessment questionnaires shall be adopted as the basis of sustainability risk management and as reference for Nanya Technology Corporation's assistance to achieve supplier sustainability. The content of questionnaire mainly focuses on potential impacts that suppliers might make on the three aspects of economic, social, and environmental. (For example, 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/greenhouse gas. We analyze the results of the suppliers' self-assessment questionnaires, screen 5% of high-risk suppliers for onsite audits, and provide assistance for improvements.

In 2022, all tier 1 suppliers (including significant suppliers) completed sustainability risk assessment. (The Company distributed the self-assessment questionnaires to 282 suppliers and all of them handed the questionnaires back.) After analysis of the questionnaires, a total of 16 high-risk major suppliers were identified in 2022. High risks in three aspects were as follows. With regard to high-risk suppliers, we performed document review and audits.

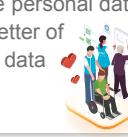
Economic aspect

- Failed to establish a responsible mineral sourcing and conflict-free minerals policy



Social aspect

- Failed to establish regulations prohibiting discrimination
- Failed to prohibit the use of child labor and provide remedies in case of unintentional use
- Failed to explicitly state that anonymous reports are acceptable
- Do not have any mechanisms for handling anonymous complaints and feedback
- Failed to establish complete personal data protection regulations and letter of consent for use of personal data



Environment aspect

- Failed to implement identification of safety and health regulations
- Failed to implement identification of environmental protection regulations



Supplier sustainability survey

Non-tier 1 raw materials suppliers

	2019	2020	2021	2022
--	------	------	------	------

Tier 1 suppliers

Number of suppliers surveyed	330	304	295	282
Response rate (%)	100%	100%	100%	100%

Tier 1 significant suppliers

Number of suppliers surveyed	94	93	91	92
Response rate (%)	100%	100%	100%	100%

Non-tier 1 significant suppliers

Number of suppliers surveyed	40	80	90	80
Response rate (%)	100%	100%	100%	100%

Supplier sustainability risk assessment

Tier 1 suppliers Note

	2019	2020	2021	2022
Number of suppliers surveyed	330	304	295	282
Response rate 2023 Goals 100%	100%	100%	100%	100%
Number of high-risk suppliers	17	16	15	16
Percentage of high-risk suppliers (%)	5%	5%	5%	5%

Raw material supplier

	2019	2020	2021	2022
Number of suppliers surveyed	82	82	80	80
Response rate 2023 Goals 100%	100%	100%	100%	100%
Number of high-risk suppliers	5	5	4	4
Percentage of high-risk suppliers (%)	6%	5%	5%	5%

Non-tier 1 raw materials suppliers

	2019	2020	2021	2022
Number of suppliers monitored	40	80	90	80
Response rate 2023 Goals 100%	100%	100%	100%	100%
Number of high-risk suppliers	2	4	5	4
Percentage of high-risk suppliers (%)	5%	5%	5%	5%

Note: Tier 1 suppliers include significant suppliers

Results of the 2022 Supplier Sustainability Risk Survey

	Tier 1 suppliers	Tier 1 significant suppliers	Non-tier 1 significant suppliers
Number of high-risk suppliers	16	16	4
High risk rate (%)	6%	17%	5%

Sustainability Audit

We analyze the results of supplier sustainability risk questionnaires, find high risk suppliers, conduct further audits and provide guidance for different attributes of suppliers, and issue a CAR for deficiencies found in the audit.

Suppliers are required to propose improvement plans and complete improvement measures within two years, how the supplier should be handled will be discussed by the Material Review Board(MRB),such as : reduction, transfer purchase orders, or cease cooperation, in order to ensure that risks are effectively controlled and reduced.

The audit coverage rate of high-risk suppliers was 100% in 2022. We audited 20 high-risk suppliers (including 16 high-risk tier 1 suppliers and 4 high-risk non-tier 1 significant suppliers) on their sustainability performance. The audit results showed that high-risk suppliers had 74 non-compliance items, but high-risk non-tier 1 suppliers had zero. In regard to non-compliance items, the Company issued a Corrective Action Request (CAR) for follow-up and improvement.

Sustainability audit table of high-risk suppliers

Non-tier 1 raw materials suppliers	2019	2020	2021	2022	2023 Goals
Numbers of audited suppliers	19	20	20	20	20
Average audit score	82	81	88	89.7	
Number of non-compliance audit items	112	64	81	74	

Category and number of violations:Labor ethics			
2019	2020	2021	2022
<ul style="list-style-type: none"> • 22 items involving human rights or employment discrimination • 4 items involving not having work rules formulated or approved • 14 items involving work hours and wages • 3 items involving grievance mechanisms • 3 items involving reward and punishment procedures • 8 item involving training, education, and communication <p>A total of 54 items</p>	<ul style="list-style-type: none"> • 5 items involving not having work rules formulated or approved • violated 13 items involving human rights or employment discrimination • violated 7 items involving work hours and wages • violated 6 items involving grievance mechanisms • violated 2 items involving information security • violated 3 items involving reward and punishment procedures <p>A total of 36 items</p>	<ul style="list-style-type: none"> • 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 <p>A total of 46 items</p>	<ul style="list-style-type: none"> • 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 <p>A total of 50 items</p>
Improve completion rate	100%	100%	100%

Category and number of violations:EHS			
2019	2020	2021	2022
<ul style="list-style-type: none"> • 9 violations of environmental safety regulations • 39 defects in labor safety operation • 4 defects in environmental protection operation • 6 defects in fire safety operation 	<ul style="list-style-type: none"> • 2 violations of environmental safety regulations • 8 defects in labor safety operation control • 6 defects in health operation control • 11 defects in fire safety operation 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 11 defects in labor safety operation control • 7 defects in health operation control • 1 defect in fire safety operation • 5 defects in environmental protection operation control
Improve completion rate	100%	100%	100%

• Supplier assessment : on-site assessment number(Include remote audit) : 21/3rd party assessment number : 1/desk assessment number : 340

	2022 Target	2022 actual	2023 Target
Number of audited suppliers in writing/on-site	360	362	360
Percentage of significant suppliers audited	40%	48%	40%
Number of high-risk suppliers audited	20	20	20
Percentage of improvements to deficiencies completed	100%	100%	100%
Number of suppliers eliminated	0	0	0
Number of suppliers receiving guidance for deficiencies			25
Proportion of significant suppliers that received guidance	100%	100%	100%

6-3



Improve the Sustainability of Supply Chains

In response to changes and updates to sustainability trends, Nanya Technology Corporation will continue to improve supplier sustainability through seminars and project guidance, which raise suppliers' awareness and ability to achieve sustainability.

► Supply Chain Seminar

We continued to organize the 3rd Nanya Technology Corporation Sustainable Supply Chain Seminar in November 2022, inviting experts and senior managers of nearly 20 significant suppliers to jointly participate in corporate sustainability. The sustainable supply chain management strategy of Nanya Technology Corporation was promoted during the seminar, and issues of concern were shared with suppliers. Suppliers (MERCK Taiwan and KANGO-PPC) shared the measures they implemented for environmental and social sustainability, so that other suppliers attending the event can learn from each other. Furthermore, SEMI President Terry Tsao was invited to analyze net zero and sustainability trends of supply chains, allowing managers at the event to understand the latest developments in issues.

Starting in the second half of 2022, managers of Nanya Technology Corporation led groups to visit 8 suppliers and Subcontractors to discuss the industry's sustainability guidelines. After building a consensus on sustainable suppliers, Nanya Technology Corporation launched the Sustainable Development Mutual Benefit Initiative during the supply chain seminar, and managers of Nanya Technology Corporation led all managers of significant suppliers to jointly make a declaration that they will actively plan ESG development of the companies, take climate action in response to climate change, and implement human rights protection in the work place. The goal is to reduce electricity consumption by 10% and above in 2030, reduce carbon emissions by 20% and above, and create a sustainable supply chain that uses renewable energy, developing towards a sustainable future with net zero emissions one step at a time.

Signed percentage of "Sustainable Development Mutual Benefit Initiative" for 2022

Significant Supplier		Subcontractor	
Procurement Amount	Percentage	Transaction Amount	Percentage
65.6%	40%(33 suppliers)	96%	50%(2 subcontractors)

Sustainable Development Mutual Benefit Initiative – Letter of Commitment



Sustainable Development Mutual Benefit Initiative

As responsible corporate citizens, _____ and Nanya Technology Corporation view ESG to be an important development indicator and jointly commits to the following with Nanya Technology Corporation:

- 1.Dedicate balanced efforts into the development of ESG while pursuing business performance.
- 2.Take climate action in response to the impact of climate change, including making an inventory and controlling GHG emissions, planning concrete energy conservation actions, and making preparations for low carbon energy use, in order to mitigate the impact of operations on the climate and environment.
- 3.Take action to protect the human rights of business partners, including zero crimes against humanity, zero discrimination, and zero forced labor, to respect the value of human rights.

We will work together in sustainable development strategies and actions to jointly expand our influence in sustainable development, so that the industry will take ESG more seriously. We will become promoters and work together to realize the vision of sustainable mutual prosperity!



► 2022 Supply Chain Seminar



► Supply Chain Sustainability Projects

Sustainability projects	Contents of cooperation	Expected benefits	Quantified benefits
1.Three-zero huma rights program	We promote the human rights program that advocates zero crimes against humanity, zero forced labor, and zero discrimination to significant suppliers	Strengthen human rights protection, reduce the exploitation of human rights, create a friendly workplace, and avoid becoming a sweatshop	<p>1. Initiatives and promotions from 2022 to 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.</p> <p>2. Mitigation and remediation from 2024 to 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</p> <p>3. Termination and prevention from 2026 to 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.</p> <p>4. Tracking and disclosure from 2029 to 2030 : Prepare and periodically disclose human rights due diligence reports</p>
2.Product carbon footprint inventory	Encourage raw materials suppliers and packaging and testing plants to compile their carbon footprint inventory	1.Aligned with international climate change issues. 2.Reduces the Company's product carbon footprint 3.Achieving the SBTs in 2030 will be beneficial.	<p>1.Inventory : Nanya Technology Corporation compiles the environmental footprint inventory of its products every year to find suppliers that cause an increase in product carbon footprint</p> <p>2.Set a Goal : Prioritize the top 12 raw materials suppliers and contractors with the highest carbon emissions for promoting the carbon reduction project and long-term goal of net zero emissions</p> <p>3.communication method : Communicate with the top 12 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 Bureau under the guidance of the Industrial Technology Research Institute</p> <p>4.Implementation progress tracking and feedback: (1) The Industrial Technology Research Institute provides guidance for supplier low 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</p>

Supplier Capability Development

	2022	Goals
Number of suppliers engaging in capability development	21	
Percentage accounted for by significant suppliers	23%	20%

Improvement project for human rights risks of suppliers / Subcontractors' migrant workers

Suppliers' stable and good supply capabilities come from stable production manpower and friendly working environments. Migrant workers are indispensable sources of labor for a majority of factories. However, most of migrant workers are brought to Taiwan through manpower agencies, which is prone to high risks of human rights management. Therefore, we have promoted the human rights protection for migrant workers as one of our supplier sustainability projects. We started to assess human rights risks of Subcontractors' migrant workers in 2019. The assessment was based on the provisions of Freely Chosen Employment in the RBA Code of Conduct, including, voluntary work and redundancy, zero fees for workers and not holding their identity cards and personal certificates under any circumstances, and no unreasonable restrictions on workers' freedom of movement and their primary movement areas. Actual implementation aspects include: Zero payment (including commissions, fees of accommodation, transportation, documentation, and health checkups), installing lockable safe boxes for storage of important documents and possessions, direct remittance of wages to employees' bank accounts, free access to working and living space, holding religious and cultural activities, and preventive measures against infectious diseases. In 2019-2022, the amount refunded totaled approximately NT\$78,060,000, benefiting 3,078 migrant workers.

Three-zero human rights program for suppliers

International society has attached growing importance to human rights issues in recent years. When forced labor or exploitation occurs, it raises concern and causes international society to condemn or even boycott. Hence, supply chains working together to strengthen human rights protection has become growingly important. Nanya Technology Corporation has dedicated years of effort to human rights protection, carried out human rights risk assessment and management, and created an inclusive and friendly workplace with diversity. We utilized our experience and achievements in human rights protection to implement the "Three-zero Human Rights Program" for significant supplier, creating a virtuous cycle of human rights for significant supplier (supplier audit → establish system → mitigation and remedy → risk assessment → self-audit and management). Significant supplier then influence other suppliers. As of the end of 2022, a total of 15 suppliers of concern signed Nanya Technology Corporation's "Three-zero Human Rights Program" and supported Nanya Technology Corporation's supplier sustainability projects.

Schedule of the Three-Zero Human Rights Program

Three-zero Human Rights Program signing, communication, investigation, and guidance in 2022-2023: Continue to communicate with and provide guidance in coordination with the audit schedule investigate the supplier's current system to evaluate its inclusion as a key supplier.

Policy formulation and improvement tracking in 2024-2025: Track the establishment of a human rights system by suppliers, and provide guidance to suppliers with writing a human rights code of conduct.

Risk assessment to mitigate adverse effects 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.

Periodic disclosure in 2029-2030: Provide guidance for the preparation and periodic disclosure of human rights due diligence reports

Supplier energy-saving activity promotion project

Encourage raw materials suppliers and packaging and testing plants to compile their product carbon footprint inventory:



Compiled the 2022 product carbon footprint inventory to find the top 30 raw materials suppliers and packaging and testing plants with the highest carbon emissions, encourage participation in the low carbon footprint inventory and carbon reduction project of the Industrial Development Bureau under the guidance of the Industrial Technology Research Institute, the NTC will verify participants, and submit applications for subsidies from the Industrial Development Bureau under the program for large enterprises to lead small enterprises in gradually progressing towards greening.



Communication method:

Communicate with the top 30 raw materials suppliers and packaging and testing plants with the highest carbon emissions, encourage participation in the low carbon footprint inventory and carbon reduction project of the Industrial Development Bureau under the guidance of the Industrial Technology Research Institute, the NTC will verify participants, and submit applications for subsidies from the Industrial Development Bureau under the program for large enterprises to lead small enterprises in gradually progressing towards greening.



The Industrial Technology Research Institute provides guidance for supplier low carbon footprint inventory and carbon reduction projects over a two-year period, and assists the Company's product supply chain in gradually progressing towards greening.



Create and share the supplier product carbon footprint inventory on the platform.

Supplier Annual Evaluation

Nanya Technology Corporation assesses the quality, technology, delivery, services, costs, and sustainable operations of raw materials, components, and equipment suppliers every year, and then selects outstanding suppliers to be commended in annual supplier commendation events. Sustainability issues are promoted during the events, and senior managers directly communicate goals and requirements for the supply chain with respect to quality, technology, delivery, services, costs, and sustainable operations.

Besides presenting awards to outstanding suppliers, annual evaluation results are taken into consideration when selecting suppliers for future procurements, and will increase the suppliers' cooperation opportunities.

We compared suppliers of raw materials, components, and equipment in 2022 and presented awards to 8 outstanding suppliers.



| 2022 Supplier Award Ceremony



6-4 Responsible Mineral Sourcing Management

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.

The metal has contained in the product of Nanya Technology Corporation comply with RBA (Responsible Business Alliance) and Responsible Minerals Initiative (RMI) which has followed OECD (Organisation for Economic Cooperation and Development) Due Diligence Guidance. And we are not to purchase illegally sourced metals or minerals, or minerals from conflict areas or countries to make sure to meet Responsible Minerals Sourcing and Conflict-Free minerals requirements.

In order to meet requirements of Responsible Minerals Sourcing and Conflict-Free minerals, we will investigate the supply chain in detail and ensure that metal or mineral materials such as gold (Au), tantalum (Ta), tungsten (W), tin (Sn), cobalt (Co) and Mica are all purchased from RMI conformant smelter and submit the Conflict Minerals Report Template (CMRT) and Extend Minerals Report Template (EMRT).

Nanya's 7 Tier 1 Subcontractors and 7 Tier 1 materials suppliers have completed investigations on responsible procurement of minerals in their supply chains, and confirmed that all 38 of the Tier 2 and Tier 3 minerals suppliers in the supply chain meet requirements of the Responsible Minerals Assurance Process in the smelter survey.

Subcontractors and raw materials suppliers that use 3TG, cobalt, and Mica are required to comply with our policies.

Hence, 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. Ensure that the supply chain does not directly or indirectly inject warlord armed groups into acts that endanger basic human rights, or source from high-risk areas, and comply with the Responsible Minerals Assurance Policy.

Nanya Technology Corporation's production lines include wafers, packaged IC, and DIMM modules. Nanya Technology Corporation's supply chain reported 226 qualified smelters in 2021. Due to the Russia - Ukraine War in 2022, Nanya Technology Corporation's supply chain removed 7 Russian gold smelters, and other smelters were removed due to the expiration of their RMI certification. The supply chain reported 212 qualified 3TG, cobalt, and mica smelters in 2022.

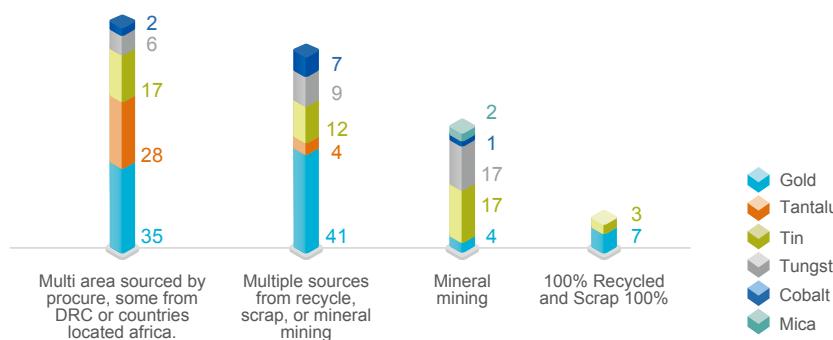
Nanya began adding the Statement of Compliance with RMI¹ Policy and Conflict Mineral-Free on its product labels in 2022, declaring that none of our products use conflict minerals and meet RMI Responsible Minerals Sourcing Policy.



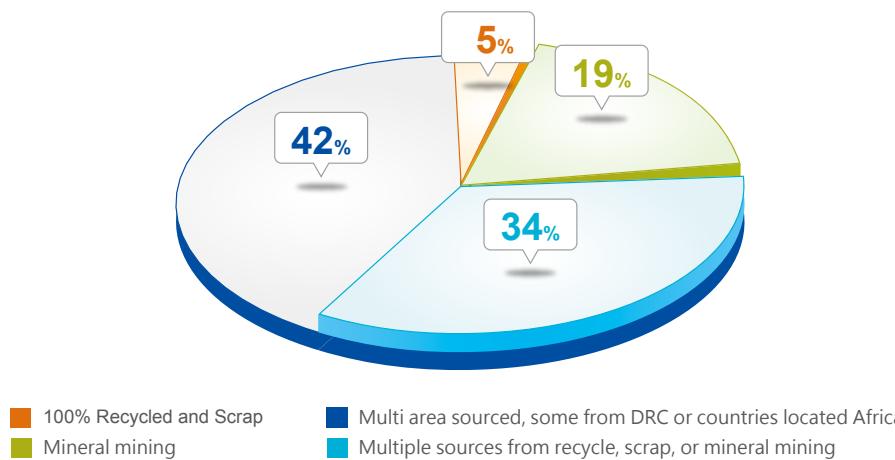
- ✓ Identification of mineral applications
- ✓ Identification of survey products
- ✓ Designate survey subjects
- ✓ Announce supply chain investigations

¹ .RMI = Responsible Minerals Initiative

Responsible Mineral Sourcing

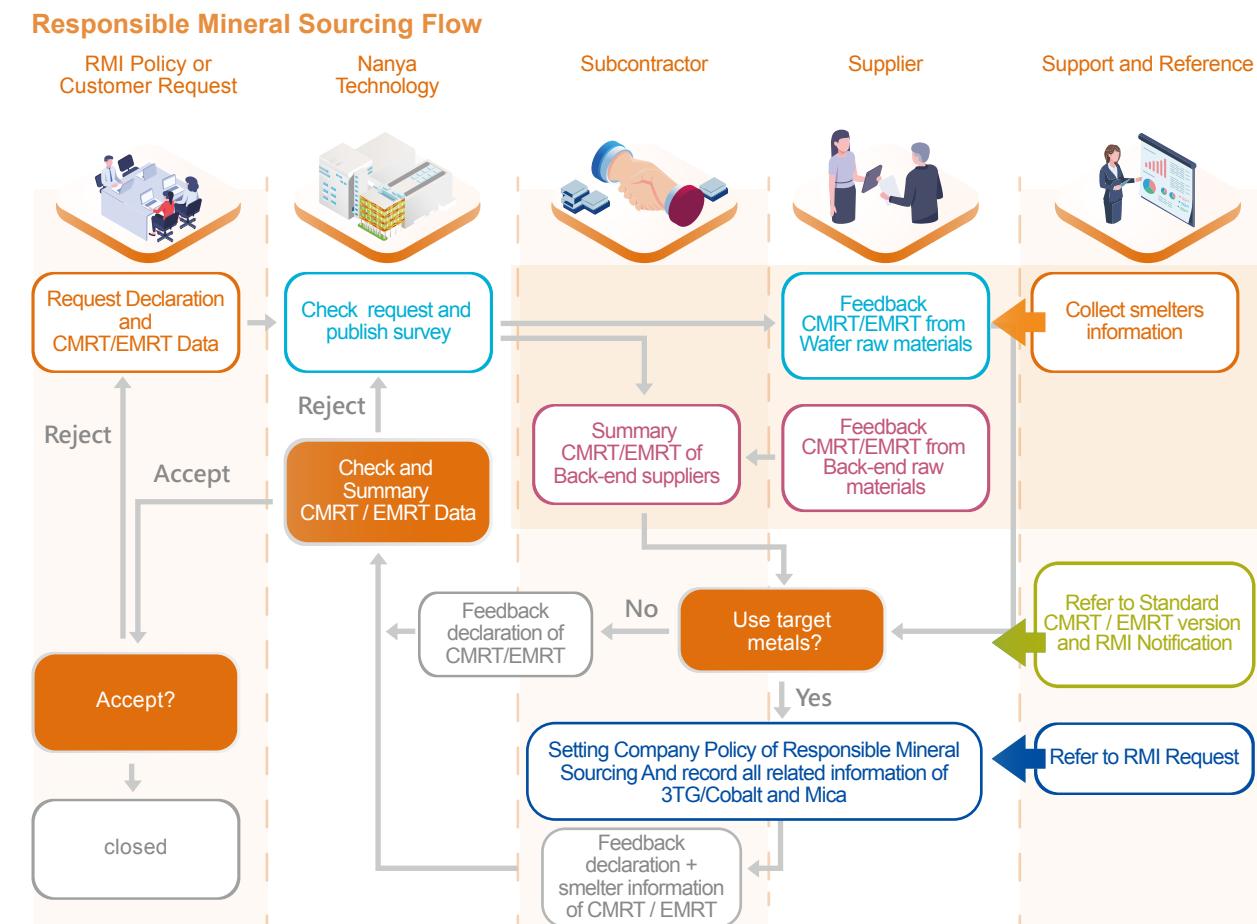


Responsible Mineral Sourcing Ratio



Minerals used in our existing products are gold, tantalum, tin, tungsten, cobalt, and mica. Approximately 42% of the 88 smelters replied that the source of the minerals may be from the Democratic Republic of the Congo(DRC) and its adjoining countries or other high-risk areas, as well as from recycled or discarded metals. The 88 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.

Applications of gold, tantalum, tin, tungsten, cobalt, and Mica used by the Company are as follows:



▶ 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 (3TG), cobalt, and Mica in the Company's products. We shall screen and select suppliers for the conflict minerals investigations and implement a series of top-down investigations on the suppliers. We shall use the standard investigation tools defined in the Responsible Minerals Initiative (RMI) and obtain the latest lists.

Due Diligence



1

Establish a supply chain management system



2

Assess supply chain risk



3

Regular confirm the latest developments and updates of the Responsible Minerals Initiative (RMI)



4

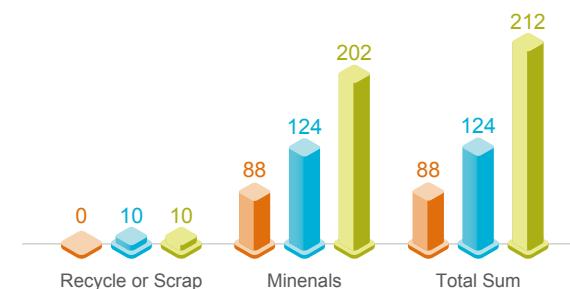
Reporting based on Supply Chain Investigations

▶ Corresponding Product Categories for 3TG,Cobalt and Mica Investigation Data

Nanya provides memory products. According to due diligence in the supply chain and comparison with the list of qualified smelters of the Responsible Minerals Initiative (RMI), a total of 52 minerals suppliers, including 7 Tier 1 Subcontractors and 7 Tier 1 raw materials suppliers as well as 38 Tier 2 and Tier 3 suppliers, have provided information on the source of 3TG, cobalt, and Mica, and we identified information for 212 smelters in the supply chain investigation.

Currently, all these 212 smelters are accredited smelters by the Responsible Minerals Initiative (RMI), and completely comply with the conflict-free minerals and responsible minerals policy.

Sources for responsible procurement of minerals



- ◆ From DRC or neighboring countries/High risk areas
- ◆ Not from DRC or neighboring countries/High risk areas
- ◆ Number of smelters complying with the Responsible Mineral Sourcing

Nanya shall continue to implement due diligence based on the Responsible Minerals Assurance Process (RMAP) and lower risks in the supply chain.

Nanya Technology Corporation is responsible for the RMAP and hopes to achieve the following goals:



Continue to cooperate with suppliers / Subcontractors and conduct supply chain investigations to ensure the accuracy of information on responsible mineral assurance.



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.



Review supplier data and verify that suppliers meet requirements of the responsible mineral policy.

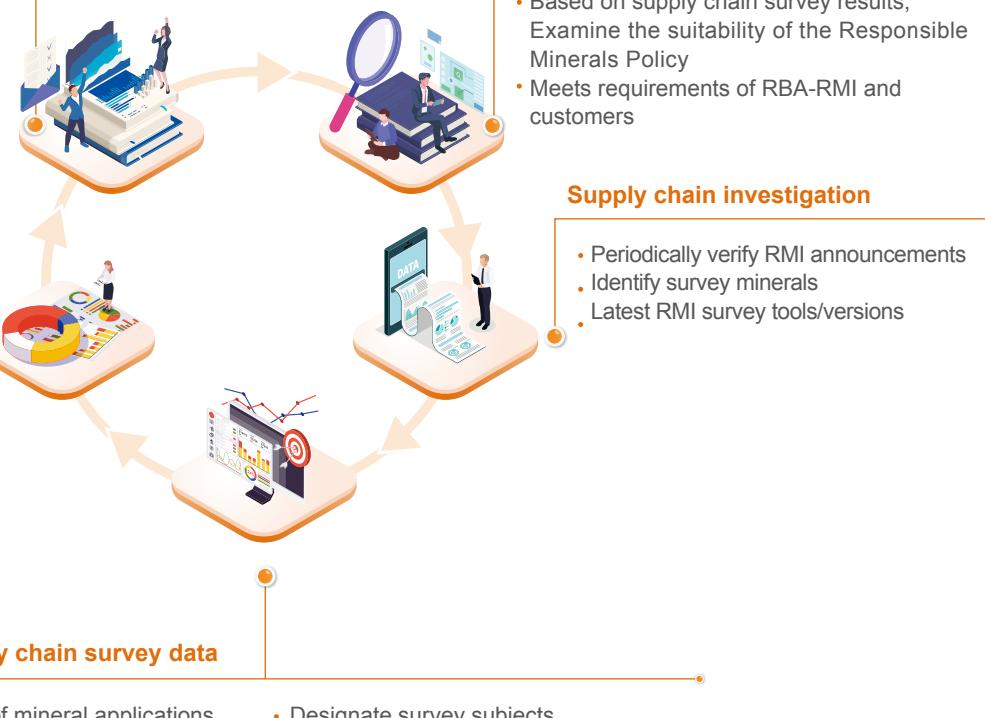
Presentation of results

Nanya Technology Corporation 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 responsible mineral sourcing management indicators and responsible minerals policy, showing the management results from a positive cycle.

Supply chain responsible mineral investigation cycle

Disclose the Responsible Minerals Report

- Summary of supply chain data
- Third-party audit
- Disclose the Responsible Minerals Report



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

7-1 Social Influence	129
7-2 Social Engagement	132

Nanya is committed to social engagement and participates in public affairs and local care to become an active participant that gives back to the society. We promote social influence and community development to lead society to a better and sustainable future.

2,481 hours

Number of hours invested by Nanya Technology Corporation in social engagement increased 14.9% compared to 2021

Donated 50,000 rapid test kits

During the peak of the outbreak, we donated rapid test kits to the local government to help it overcome challenges of the pandemic

Influential enterprise in fair trade

Recognized as an influential enterprise for supporting fairtrade for 5 consecutive years





Strategy and Performance of Material Topics

Social Engagement

- Strategy**
- 1.Talent cultivation: Conform with the education system and cultivate outstanding semiconductor talent.
 - 2.Environmental Conservation: Connect different types of NPOs and promote environmental protection ideals.
 - 3.Humanistic care: Improve social welfare by working with local art and charity groups
 - 4.Good neighbor: Participate in public affairs in the neighborhood communities and build a harmonious and mutually beneficial living sphere.

2022 Goals	2022 Performance Target achievement status	2023 Goals
Annual growth of social engagement hours ≥ 10%	The total number of hours grew 14.9% to 2,481.5 hours	Annual growth of social engagement hours ≥10%
Number of volunteers ≥ 100 people	<small>Note</small> Current number of volunteers: 87 people	Number of volunteers ≥100 people
Accumulated semiconductor talent cultivated: 450 people	532 people	Accumulated semiconductor talent cultivated: 750 people
Awarded the Work-Life Balance Award	Received the Employee Care Award	Obtained the certification for excellent workplace
Obtained the Sports Enterprise Certification	Obtained the certification	

Exceeded Achieved Partially achieved

Note: We established a volunteer service team at the beginning of 2021, but recruitment and events were suspended after the outbreak of COVID-19. We revised the regulations for volunteer services and measures for participation by senior managers in 2022, and increased incentives and a sense of honor for participants.

7-1 Social Influence

As an industry leader, Nanya earnestly commits itself to creating positive influences. The Company has responded to the challenges proposed by the United Nations in the Sustainable Development Goals (SDGs) by combining our core capabilities with SDGs. We have connected our core capabilities with three SDGs and developed four main developmental directions. We continue to promote these four directions to exert social influence. One of the three SDGs we have connected to is SDG 8 (Decent Work and Economic Growth), which is our driving force for talent cultivation and industry-academia collaboration to actively promote technology upgrades and enhance economic value through innovation so as to help young people and students develop professional skills. By connecting to SDG 8, we have set up a main public welfare theme of talent cultivation. SDG 13 (Climate Action) allows us to deeply experience the impacts that extreme climates have had on the community environment and the ecology. Therefore, we have set up a main direction of environmental conservation to safeguard environmental biodiversity and move toward a low carbon society. SDG 17 (Partnerships for the goals) is the foundation for the Company's public welfare implementation, so we have built two main themes of humanistic care and community harmony so that we are able to make long-term contributions to the communities and neighborhoods in which we have been operating.

We set short-, mid-, and long-term goals for the four main directions of Social Engagement, namely talent cultivation, environmental conservation, humanistic care, and community harmony. We combined funds, supplies, and manpower inside and outside the company to take social engagement actions. In 2022, we continued to stride forward on the basis of the promotion paths and cumulative results in past years, taking the lead in creating greater influence.

Talent cultivation

Driving force
By using the Company's core operational capabilities, we conform with the strength of industry, government, and academia to connect with the government's technology policy; and we also conform with the education system to jointly cultivate talent.

Vision
Cultivate and reserve outstanding technological talent

Subjects
Students in colleges and universities

Social influence
1.Promotion of popular science education
2.Implementation of industry-academia collaboration

Environmental conservation

Driving force
Integrate the strength of internal employees with that of external non-profit organizations to promote environmental protection awareness. We also reach to business partners and initiate attention to climate change topics, hoping that we may exert greater influence.

Vision
Build a green and sustainable ecological environment

Subjects
Community organizations and environmental protection groups

Social influence
1.Reduce the ecological impact
2.Allow environmental protection knowledge to strike root

Humanistic care

Driving force
We work with local art and culture groups and charity establishments to implement the plans for humanistic activities to take root. Moreover, we aim to form a society of truth, kindness, and beauty with humanistic culture on the basis of expansive vision.

Vision
Create and convey the power of beauty and kindness

Subjects
Local arts and culture organizations and charities

Social influence
1.Improve social welfare
2.Promote art and culture

Community harmony

Driving force
Participate in public affairs in the neighborhood communities, and take practical actions, such as sponsoring local art and culture, and responding local needs to promote a harmonious and mutually beneficial living sphere.

Vision
Establish an inclusive and harmonious living sphere

Subjects
Local township offices and community organizations

Social influence
1.Give back to communities
2.Realize community inclusion

Influence starts with change. Nanya has adopted the London Benchmarking Model (LBG) to evaluate the benefits and influence of each public welfare activity and adjust public welfare programs and invested resources step by step. Moreover, Nanya reviews the effects and results to tightly link core operations with social issues. To deepen and expand corporate long-term influence on society, the Company focuses on connecting its core operational capabilities with social demands. We hope that through our professional innovative capabilities, which are our most competitive advantage, we are able to resolve social issues and create a mutually beneficial and beautiful home. Shared value is the core concept of Nanya's participation in social public welfare. Our short-term goal is that our invested resources will deliver the maximum benefits. Our long-term goal is that the behaviors, awareness, and well-being of the entities we have helped will generate positive influence.



Talent cultivation

Content

- Future Stars
- Outstanding Projects
- Cultivate Students
- Understanding Projects
- Speech Projects
- Care for Rural Areas project (rural areas + flight scholarships)
- Design thinking project

Commercial benefits

- Future Stars Scholarship (26 nominated, 9 recipients, and 22 internship scholarships)
- Innovative technology R&D (5 industry-academia collaboration cases)
- Enterprise exploration projects (613 visitors)
- Nanya's supervisors serving as industry experts (24 supervisors)
- Support professional athletes (1 athlete)
- Nanya's supervisors serving as industry experts (4 supervisors)

Social benefits

- Cultivate Students (Scholarships amounted to approximately NT\$610,000)
- Assistance in employment opportunities (around NT\$55.02 million was invested in internship projects)
- Enhanced technological capabilities (NT\$11.81 million in industry-academia collaboration projects)
- Industry-academia connections (2,937 participants for the lectures of professionals from industries)
- Budget for sponsoring athletes (total budget of NT\$500,000)
- Expected to influence four elementary schools in rural areas (total budget of NT\$1,000,000)
- Discussion business ethics topics (24 microfilms)
- Proposals of design thinking innovation (67 environmental conservation placemaking proposals)



Environmental conservation

Content

- Environmental topic initiatives
- Safeguarding ecological environment
- Community assistance

Commercial benefits

- Cohesion of employees (1,041 employees participated)
- Internet exposure (online media exposure reached 10,954 people)
- Environmental protection initiative (participated in 2 environmental protection initiative event)

Social benefits

- Environmental biodiversity
- Reduction of plastic, paper, and carbon usage (turning off lights for one hour in all of Taiwan reduced electricity consumption by 114,000 kWh/carbon emissions by 57,228 kg)



Humanistic care

Content

- Cooperating with public welfare groups
- Community care
- Charity bazaars

Commercial benefits

- Employee engagement (1,437 participants)
- Internet exposure (online media exposure reached 5,000 people)
- Charity (11 certificates of appreciation)

Social benefits

- Prospering community environment (purchased 212kg of fair trade coffee)
- Support fair trade (75,000 in total consumption at the market in a single day)
- Reducing the wealth gap (provided financial aid to 7 entities)



Community harmony

Content

- Community assistance
- Community care
- Safeguarding ecological environment

Commercial benefits

- Employee engagement (113 participants)
- Internet exposure (online media exposure reached 1,886 people)
- Strengthening neighborhood relationship (2 certificates of appreciation)

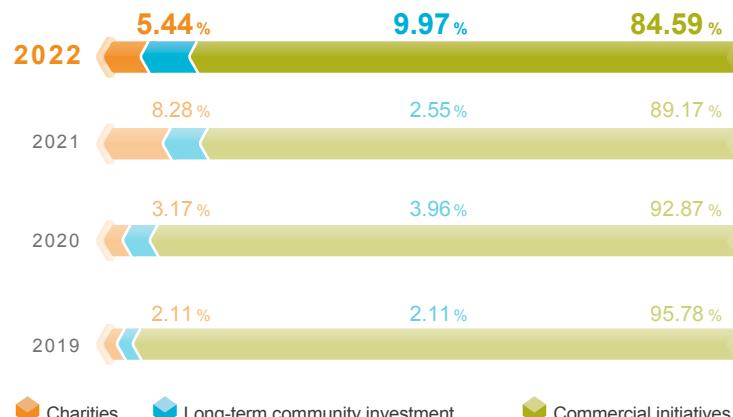
Social benefits

- Deepen community communication (interacted with 10307 people in the neighborhoods)
- Environmental biodiversity (cleaned 1 hiking trail)



Nanya is committed to cultivating technology talent, and the investment amount has increased from over NT\$2 million to over NT\$40 million, with substantial increases year by year. The increased budget was mainly invested in talent cultivation under Focus On U. The commercial innovative public welfare activities, which use our core capabilities to resolve social issues, have always been our priority in implementing our public welfare themes. Nanya has actively promoted technological upgrades and innovations for economic value enhancement in order to cultivate professional skills of youngsters and students, allowing us to be in line with the ideas of Decent Work and Economic Growth of SDG 8 on the aspects of talent cultivation and industry-academia collaboration.

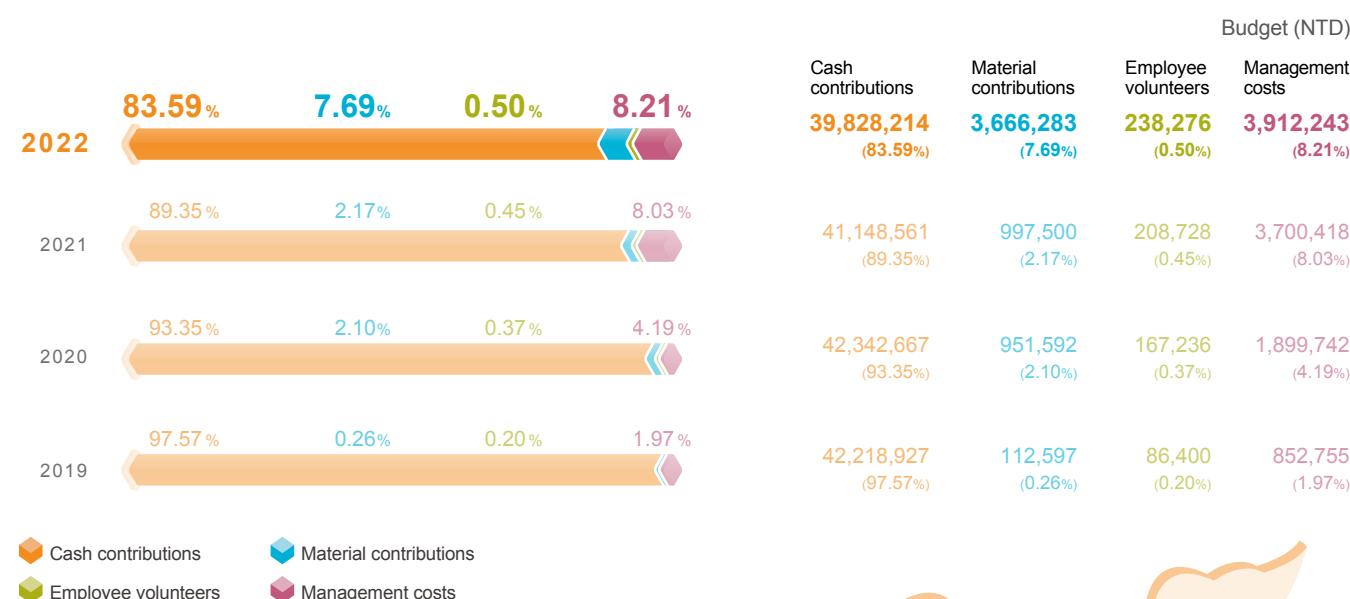
Public welfare categories invested in by Nanya



Resources invested in social public welfare

In recent years, cash and commodities have been the main resources Nanya has invested in public welfare activities, accounting for 90% of all resources, while employee volunteering accounts for a part of Nanya's participation. The main types of public welfare activities are commercial activities aimed at technological talent cultivation, followed by long-term investments in the communities. Only a small part of the activities are purely for charity. In the future, we will continue to examine the results of charity events through LBG, and set long-term goals for charity events, in hopes that the types of resources invested in commercial initiatives will be greater than investments in charity and communities. Furthermore, we formally established a volunteer team in 2021, and expect the percentage of volunteers will increase each year through system planning.

Public welfare categories invested in by Nanya



| Nanya Volunteers One Year Anniversary Video

7-2 Social Engagement

Nanya hope that we may solve current social and environmental issues when participating in social engagement, rather than only sponsoring public welfare activities or making donations. Therefore, in the process of forming the four main themes, we were constantly thinking how we could connect the resources of industry, government, and academia to jointly exert influence, taking the lead in promoting the aspects of talent cultivation, environmental conservation, humanistic care, and community harmony. Moreover, we want to show the results to the public to convey Nanya's ambition to be interactive, mutually beneficial, local, and connected.

In addition to doing our utmost to promote social engagement, Nanya, whose core business is semiconductor, also takes advantage of its competitiveness in the technology industry, and utilizes the existing resources, manpower, and supplies to collaborate with universities and colleges as well as industrial and academic institutions. Not only do we make contributions to cultivating Taiwan's technology talent, but we also reinforce the Taiwan's competitiveness in the technology industry.

Nanya continued its social engagement efforts under the four themes: "Talent Cultivation," "Environmental Conservation," "Humanistic Care," and "Community Harmony" in 2022. We combined the efforts with the 4U Project: Focus On U, Light Up, Power Up, and Line Up, in order to gain greater influence by improving the effectiveness of event promotions.



Talent cultivation

Social issues resolved

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

- Distributed a total of NT\$6,212,859 in scholarships
- Industry-academia collaboration with 5 schools
- Sponsored 4 campus events
- Jointly implemented internship programs with 12 schools
- Organized 14 company visits
- Organized 36 seminars



Environmental conservation

Social issues resolved

The burdens on our earth resulting from climate change and environmental pollution are getting serious and gradually becoming a global focus. Thus, it is imperative to fulfill our responsibilities as citizens of the Earth through enhancing environmental conservation awareness.

Major results

- 1,041 participants in initiative activities



Humanistic care

Social issues resolved

Enhance humanistic qualities of the public and broaden their horizons on the human-oriented base in order to build a loving and caring social atmosphere.

Major results

- Donated to 7 social welfare foundations
- Supported 1 potential athlete



Community harmony

Social issues resolved

Local prosperity and local value preservation should not be contradictory but complement each other. As cultivating local connections, how to incorporate themselves into community reconstruction is a crucial subject when enterprises think about social responsibility.

Major results

- Interacted with 10,307 participants of neighborhoods (including mountain environment cleaning activities, community art activities, etc.)

I Focus on U

▶ Future Stars:

We invested approximately NT\$6.21 million in providing scholarships to 22 students and providing Future Stars scholarships to 9 students.

▶ Outstanding Projects:

- We cooperated with 5 universities on 14 industry-academia research plans, and the invested amount totaled NT\$11.81 million.
- The Company sponsored 4 campus activities with a total of NT\$980,000.

▶ Cultivate Students:

We cooperated with 12 colleges on the internship programs. A total of 228 interns worked at the plant, including 70 indirect and 158 direct staff members.

▶ Understanding Projects:

A total of 14 corporate visits were held with about 613 teachers and students participants.

▶ Speech Projects:

As industry experts, they shared their experience with key schools in northern Taiwan during 36 seminars and with a total of 2,931 attendees in 2022.



Talent cultivation



Visit of the Department of Electrical EngineeringNational Central University



Visit of the Industry Vanguard Project of the Workforce Development Agency



Chang Gung University seminar



Taiwan Tech Layout industry-academia program



Talent cultivation

I Care for Rural Areas

▶ Cross-school Distance Learning Project :

New Taipei City has a total of 45 elementary schools in remote areas, in which 24 schools have less than 50 students in total. As one of the major semiconductor companies in New Taipei City, we believe that good education will enhance competitiveness, and eliminate the gap between urban and rural areas. Nanya Technology Corporation began supporting the rural area education policy of New Taipei City Government "Learning together, sharing, and mutually prospering" in 2021. We also participated in the "Cross School System, Local Schooling" Project and "Self-learning Across Time and Space" Project, and assisted the purchase of live streaming equipment and sponsored the production of bilingual teaching videos, in order to provide students in rural areas of New Taipei City with equal opportunity to a wider range of education. New Taipei City Government thus awarded Nanya Technology Corporation with a certificate of appreciation.

Nanya Technology Corporation expanded participated in the Cross-school Distance Learning of New Taipei City Government in 2022, using the power of technology to assist elementary schools in rural areas to create a new distance learning model across schools. Four elementary schools in rural areas formed an alliance under this project, so that students can engage in cross-school interactions and discussions to stimulate their thinking. The dedicated live streaming classroom makes it convenient to integrate teaching resources of the four schools, and broadens the horizons of students in rural areas through richer contents for distance learning, closing the gap in education resources between urban and rural areas.

This project has a total budget of NT\$1 million and was originally scheduled to be completed in 2022, but it was not launched until October 2022 due to the pandemic. Nanya Technology Corporation led a team of professional volunteers and IT experts to understand the actual needs of the four schools, and assessed the condition of equipment in Bitou Elementary School at the Northeast Coast, in hopes of planning a live streaming classroom in 2023 Q1 that will meet the school's needs. The equipment in Bitou Elementary School was copied in the three other schools in 2023 to realize cross-school resource integration.



I Flight Project

► Flight Scholarship Project:

The education blueprint of Nanya Technology Corporation not only aims to let the DRAM industry strike root in graduate institutes, colleges, high schools, and vocational schools, but also helps elementary schools in rural areas obtain teaching resources through the Care for Rural Areas Project. We also noticed that some young students not only focus on the studies of their department, but have other gifts as well, and we hope that they will be able to fulfill their dreams.

Nanya Technology Corporation planned the Flight Scholarship Project in 2022 for young students with a specialty to bravely pursue their dreams. The project will focus on students with exceptional performance in sports tournaments, and provide prizes, assist in training, allow students to gain experience in overseas tournaments, improve their skills, and focus on career development in their specific skill.

The student that received the scholarship was Chang Ping-Cheng, a 17 year old table tennis player selected into the national team for extraordinary performance in 2022. He participated in the table tennis tryout for the 19 year old team the same year, and was selected into the team at 10th place. He won third place in the men's team competition in the National High School Games. Besides domestic training and competitions, he also actively competed in international competitions (2022 Jordan Junior & Cadet Open, 2022 Slovenia Junior & Cadet Open, 2022 Montenegro Youth Challenge, 2022 Slovakia Youth Challenge) and won third place in the events. His outstanding performance qualified him for the highest scholarship amount: NT\$30,000.



Talent cultivation



I Talent Cultivation Nursery Project

► Design Thinking Creative Integration :

Nanya Technology Corporation participates in semiconductor talent education projects under the theme of talent cultivation, and cultivates elite talent for Taiwan's memory industry. Nanya Technology Corporation co-organized the "Design Thinking Creative Integration" activity series with Ming Chi University of Technology in 2022 for more diverse development of Taiwan's young students.

"Design Thinking Creative Integration" is divided into three stages:

► Stage 1 Design Thinking:

Nearly 900 students from different departments are mixed in groups. After the design thinking training course, the SDGs are used to guide students to develop problem-solving abilities through design thinking.

► Stage 2 Creative Integration:

Expand cooperation with the College of Management and Design in creative integration practices, and 300 students from different departments formed 40 groups to jointly think about examples of ESG practices. Nanya Technology Corporation provided guidance in the contest and selected 5 outstanding projects. Work together with the school in supporting the practical application of projects, in order to accumulate capabilities for community empowerment and placemaking.

► Stage 3 Business Ethics:

Nanya Technology Corporation shares its experience with social engagement to guide students to think about the role of companies in ESG. Students are divided into groups and compete with each other. The feedback stimulates students to propose different ideas, and the group contest inspires students to be even more creative.

The purpose of the project is to develop students' cross-disciplinary teamwork ability, and link report topics to sustainability issues and placemaking issues of concern to society, so that students will think of solutions. The project hopes that students will not only become experts in their respective fields, but also become interdisciplinary talent capable of observing experiences and design thinking.

Talent cultivation





Humanistic care



Community harmony

I Placemaking: Community Empowerment Project

► Taishan Renaissance:

Nanya Technology Corporation is located in Taishan District, New Taipei City and has focused on being a good neighbor and showing humanistic care over the years. We observed that Taishan District has precious local cultural heritage and ecological resources. Hence, we co-organized the Taishan Renaissance activity series together with local schools (Ming Chi University of Technology), government agencies (Taishan District Office), local temples (Taishan Uptemple), and local organizations (cultural and historical organizations), jointly exploring local culture and creating new memories for precious traditional crafts.



Taishan Uptemple cultural tour

► Renaissance 1:Taishan Uptemple cultural tour

Volunteers of Taishan Uptemple and experts from the Department of Architecture Art Preservation lead a tour of the cultural origin of Taishan District "Taishan Uptemple" to understand its history, how it influenced local development, and its importance.



2022 Taishan Drum Festival

► Renaissance 2: Taishan Drum Festival

The development of temple culture is not limited to the architecture, but also involves people and music. The Taishan Renaissance activity series invited a local performance troupe for an innovative performance using traditional musical instruments. The unique oriental performance showcases three skills "singing, dancing, and music."



Introduction to drum arts techniques

► Renaissance 3: Introduction to drum arts techniques

Taishan District is well known among temples for its craftsmanship in drum-making. After experiencing the architectural features and music, masters with over two decades of experience in drum-making explain the process, and visitors can also experience drumming and stretching the drum head.



Yinghua Dapai ecological tour

► Renaissance 4: Yinghua Dapai ecological tour

Taishan District is not only known for its temples, but also the ecological park "Yinghua Dapai," all plants and trees in the park were jointly completed by local communities together with the district office. Different flowers bloom in the garden each season. The drainage canal in the park has a complete ecosystem of water animal and plant life. The Company invited professional lecturers from community college to take employees on a tour.

The Renaissance activity series was held over a period of six months and had a total of **88** participants.

► Taishan Lion Dance Culture Festival :

The Taishan Lion Dance Culture Festival, which has been held for 15 consecutive years, is a local cultural event of Taishan District. Nanya Technology Corporation has sponsored the Taishan Lion Dance Culture Festival for three consecutive years since 2019. Nanya Technology Corporation invited Changxing Lion Dance Troupe, which won first place during the Taishan Lion Dance Culture Festival numerous times, to perform at the groundbreaking ceremony of Fab 5A in June 2022, and allowed the over 500 guests to experience the power and beauty of the champion lion dance troupe.

Besides sponsoring and promoting the Taishan Lion Dance Culture Festival, 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 event of Taishan District from a different perspective by making lion dolls!





I Initiative fair trade coffee

► Unveiling ceremony of fair trade demonstration pantry:

Nanya Technology Corporation began selling "Fair Trade Coffee" at NT\$10 per cup in the Company's pantry in 2018, and 50,000 cups have been sold so far. We organized the "Fair Trade Day" event in 2022, and first renovated the pantry in the lobby of the head office into a fair trade demonstration pantry, in hopes that providing a space for exchanges will allow visitors and guests of Nanya Technology Corporation to gain the concept of fair trade, and thereby exert greater influence.

Nanya Technology Corporation held the unveiling ceremony of the fair trade demonstration pantry on October 20*. Since we have worked with fair trade certified companies for 3 years and above, Fairtrade Taiwan awarded a certificate for most influential enterprise in fair trade after conducting an internal evaluation, in order to show appreciation to the Company for supporting fair trade. We organized a fair trade seminar and invited Fairtrade Taiwan and Okogreen* to explain the relationship between fair trade and the SDGs, so that employees will understand that the coffee they enjoyed in the pantry has far greater meaning than just the coffee, and employees can jointly support sustainability measures with Nanya Technology Corporation in the easiest way.

► Fair trade market:

We organized a fair trade market on October 21 and invited fair trade businesses and local farmers to promote their products and the concept of fair trade at the Company, so that employees will better understand the fair trade initiative. Nanya Technology Corporation and its employees will continue to support fair trade products and aid the development of communities in third world countries to improve the lives of farmers.

*The pantry's standing sign was made together with ReWood using recycled road trees and embedded with fair trade coffee beans, presenting the concept of fair trade together with environmental protection.

*Okogreen – the first trading company in Taiwan to obtain FLO certification

Environmental conservation

Humanistic care



I Advocacy for Earth Hour

► The Earth Hour Initiative :

Earth Hour 60+ is the world's largest voluntary carbon reduction action. The event was launched in Sydney, Australia and turns off lights between 8:30 and 9:30 at night of the last Saturday every March. The initiative calls on families and commercial users to turn off unnecessary lights and electronic products for one hour, calling on people to face the issue of climate change through the action of turning off lights.

Nanya Technology Corporation has supported the initiative for 5 consecutive years, and besides sponsoring the organizer of Earth Hour in 2022, the Company invited people on its Facebook to jointly support the event. A supervisor led the filming of a promotional film and video of Nanya Technology Corporation's office buildings turning off lights. We invited employees to take photos of them supporting the event by turning off the lights, and also share their own tips for environmental protection. The event reached 4,563 people and led to 2,070 interactions.

Nanya Technology Corporation called on business partners a second time to join the Earth Hour 60+ initiative, which gained the support of 54 business partners. On the day of the event, total electricity savings in Taiwan was approximately 114,000 kWh according to statistics of Taiwan Power Company, which is equal to reducing carbon emissions by approximately 57,228 kg. On this basis, Nanya Technology Corporation is committed to continuing its green actions, sowing seeds of hope, and making greater positive impact to make the Earth an even better place!

Environmental conservation



I Doing one thing for Tamsui River

Part I

► Removing Mikania micrantha from Wugu Wetland

Nanya Technology Corporation supports "Doing one thing for Tamsui River" and began working with the Society of Wilderness in removing Mikania micrantha from Wugu Wetland in 2020. Mikania micrantha originated from South America and is listed by the International Union for Conservation of Nature (IUCN) as one of the world's top 100 invasive species because it is capable of asexual and seed reproduction. Its vines start from the soil surface and wrap around a tree until it loses space for contact with the sun and cannot perform photosynthesis. It is similar to strangling the tree and eventually causes the tree to wither. The purpose for removing Mikania micrantha is to maintain biodiversity and protect habitats, so that native species can continue to survive in the habitat without being harmed.

Over 50 employees and their family members signed up for the event in a summer day after the pandemic subsided, sweating profusely as they searched for Mikania micrantha. In the end, a 142.5 kg of Mikania micrantha was removed, contributing to the protection of biodiversity and habitats.



Part II

► Mountain Cleanup Activity of Nanya Technology Corporation :

Nanya Technology Corporation irregularly organizes cleaning activities for surrounding areas of its fabs every year. This year, nearly 70 employees and their family members volunteered despite the weather. A simple introduction of the mountain environment was provided before setting out. The mountain trail suitable for beginners also has a flower corridor where visitors can admire butterflies. Employee began picking up trash that did not belong to the beautiful mountains from the moment they set out, and also helped clean leaves and branches inside the ditch on the side of the trail, maintaining a clean ditch and road safety at the same time by preventing clogging in the ditch after days of heavy rain. The environment cleaning activity around fabs allows more employees to introduce their family to the Company's surrounding areas, and jointly make the environment better every year.



Community
harmony



Environmental
conservation

I Doing one thing for Tamsui River

Part III

► Coastal cleanup activity on 917 :

Every year 8 million metric tons of plastic waste enters the ocean, which is enough to cover every inch of the coastline around the world, severely damaging marine and coastal ecosystems worldwide. What is the purpose of picking up waste? If you can't pick up all of the waste, why continue? 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. Hence, the purpose is not only to "pick up", but also "reduce".

For International Coastal Cleanup Day on September 17, Nanya Technology Corporation co-organized a coastal cleanup activity with Advantech, Compaq Electronics, Inc., LITEON, Nan Ya Plastics Corporation, and Samsung Electronics. Together! Take away trash that does not belong to the beautiful coasts. The joint coastal cleanup event gathered together over 50 employees and their family members, and they picked up a total of 910.7 kg of trash!



Environmental
conservation





Humanistic care

Community harmony

I Love Connection Volunteer 2.0

► Chinese New Year's Eve Dinner held by the Taishan District Office :

Nanya Technology Corporation began implementing friendly neighbor measures and responding to local needs based on the spirit of giving back what is taken from society starting in 2020. Chinese New Year's Eve Dinner was suspended due to the pandemic in 2022, and Nanya Technology Corporation donated the NT\$50,000 budget for the event to local underprivileged residents, so that they can enjoy the holidays. Nanya Technology Corporation hopes that the donation will set an example, allow local residents to receive assistance, and increase public assistance for communities.



► Mid-Autumn Festival Charity Sale:

The pandemic subsided around Mid-Autumn Festival in 2022, and Nanya Technology Corporation invited Taiwan Gofe Care Association, Yu-Cheng Social Welfare Foundation, The Mustard Seed Mission, Down Syndrome Foundation, and Taiwan Foundation for the Blind to participate in the charity sale. Nanya Technology Corporation called together a volunteer team to assist with the charity sale and provide needed manpower that the charity organizations were lacking. Employees showed their love and buying power with the two-day charity sale generating NT\$233,713 in total revenue. Furthermore, Nanya Technology Corporation donated an additional NT\$50,000 to each charity organization, donating a total of NT\$250,000. Nanya Technology Corporation calls on employees to support the annual charity sale, and hopes that it will let more people know about and like the products of sheltered workshops.



► Donating rapid test kits:

The outbreak of COVID-19 in Taiwan in May 2022 caused a shortage in epidemic prevention supplies and related goods in a short period of time. Nanya Technology Corporation exerted its efforts in different aspects, and immediately donated 50,000 rapid test kits to New Taipei City Government for the home care box, supporting the government and contributing to Taiwan's epidemic prevention.





Humanistic care

I Love Connection_Volunteer 2.0

Nanya implemented the Love Connection Project to encourage employees to organize charity events by organization, club, or department. We welcome employees to propose charity ideas to the Company, and then implement the projects after obtaining approval.

► One year anniversary of the volunteer team :

Nanya Technology Corporation's volunteer team celebrated its one year anniversary on March 4, 2022. We not only filmed their thoughts over the past year, but also collected photos of volunteer activities into an anniversary film. We specially invited Liu Yao-Wen, head of the Building Asset Development Division of FPG, shared the "LOHAS Circle" Project with us, so that Nanya volunteers can understand the work, experience, and state of mind of volunteers from different perspectives. As the first project of Love Connection, Nanya Technology Corporation's volunteer team planned short-term, mid-term, and long-term indicators to achieve the goal of sustainability. Short-term: New employees of Nanya Technology Corporation all need to understand the importance of the "DNA of good deeds" during orientation and take part; Mid-term: Cultivate Nanya Technology Corporation volunteer instructors; Long-term: Volunteers support the Love Connection Project on their own. We hope that the management team's leadership and measures of the volunteer team will create a ripple effect and attract more employees to join the volunteer team.



[Nanya Volunteers One Year Anniversary Video](#)

► Father's Day Charity Road Running:

The Father's Day Charity Road Running originally scheduled in 2021, which was delayed for a long period of time due to the pandemic, was finally held on August 7, 2022 (Sunday). The road running event was co-organized with New Taipei City Runners Association before Father's Day, and also invited people with visual impairment to take part in the event free of charge. We also combined it with the activity of Nanya Technology Corporation's jogging club to run for love and health, and the remaining funds are donated to local charity organizations. Nanya Technology Corporation's volunteer team also took part by assisting at supply stations and cheering for all of the runners!



► Warm winter supplies in the pandemic:

Employees of Nanya Technology Corporation yield to none when it comes to showing they care, and often organize charity events on their own. Employees of the Production Division began raising funds to organize different charity events each quarter starting in 2016. Since the Love Connection Project was implemented, we have also utilized company resources to spread the love! We learned that the economic situation of students in Taishan was impacted by the pandemic at the beginning of 2022, and employees donated blankets, tampons, underwear, towels, and prepared frozen food to the food bank of Yi-Shiue Junior High School in Taishan District, New Taipei City, so that social workers of the school can distribute the supplies to students that need them. The Company also provided subsidies to purchase supplies for the food bank, giving supplies to students in need together with employees during the winter.



8

Integrity and Transparency

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Nanya 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.

Elevated sustainability governance

The Sustainable Development Committee was restructured from an internal management organization to a functional committee under the Board of Directors

Constituent stock of the DJSI World Index

Constituent stock of the DJSI World Index and Emerging Markets Index

TOP 5%

Top 5% in the 9th Corporate Governance Evaluation of TWSE Listed Companies





Strategy and Performance of Material Topics

Risk Management

Risk Management:
Establish effective risk improvement mechanisms and procedures
Loss management:
Operating stress test and lowering operating costs.

Effectiveness:
Mobilize all employees for risk management training and regular drills for operating risks.

2022 Goals

4 quarterly meetings and reported to the Board of Directors 2 times

2022 Performance Target achievement status

4 quarterly meetings and reported to the Board of Directors 2 times

2023 Goals

4 quarterly meetings and reported to the Board of Directors 2 times

Emergency response plan completion rate : 55 items

67 items

Emergency response plan completion rate: 55 items

Stress testing : Implement 7 aspects each year

8 aspects

Stress testing : Implement 7 aspects each year

Education and training : 100% of all employees

100%

Education and training: 100% of all employees

Business Integrity

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.

2022 Goals

Material violations of regulations : 0 cases

2022 Performance Target achievement status

0

2023 Goals

Material violations of regulations: 0 cases

Corruption cases : 0 cases

0

Corruption cases: 0 cases

Employees' labor ethical training completion rate : 100%

100%

Employees' labor ethical training completion rate: 100%

Employees' antitrust training completion rate : 100%

100%

Employees' antitrust training completion rate: 100%

Workplace violence : 0 cases

0

Workplace violence: 0 cases

Violation of trade secrets 0 cases

0

Violation of trade secrets 0 cases

Customer Service

Design and testing:
Use global engineering support services to resolve issues with customer design and testing.

Production and sales:
Implement rigorous control of quality and improve delivery efficiency.
After-sales services:
Use the customer complaint management system to quickly resolve customers' issues

2022 Goals

Customer satisfaction score : 91 points

2022 Performance Target achievement status

94.7

2023 Goals

Customer satisfaction score: Over 91 points

Customer participation in platform parameters measurement services : 930 cases

950 cases

Customer participation in platform parameters measurement services: 935 cases

Joint product verification services for customers : 24 cases

31

Joint product verification services for customers: 24 cases

Customer technical exchange and courses : 88 sessions

115 sessions

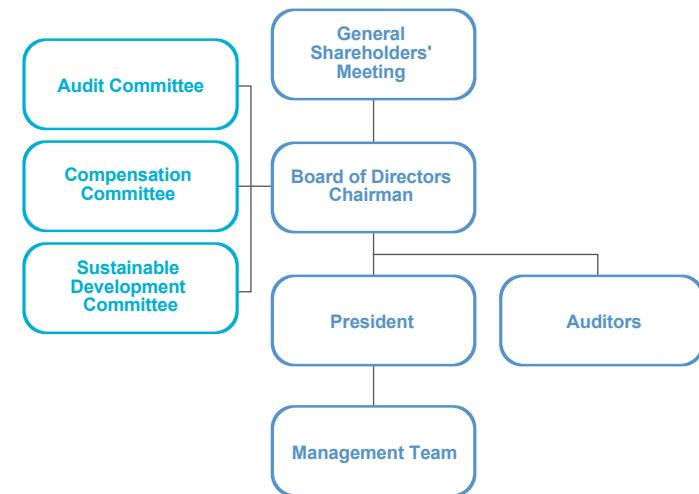
Customer technical exchange and courses: 92 sessions

8-1



Corporate Governance

Nanya believes that through comprehensive and efficient corporate governance mechanisms, we are able to reinforce the Company's operations and protect shareholders' interests. The Company was once again selected as a constituent of the Dow Jones Sustainability Indices (DJSI) World and Emerging Markets in 2022 and was listed in the S&P Global Sustainability Yearbook, ranking in the top 5% of the global semiconductors and semiconductor equipment industry. Currently, Nanya is a constituent stock of the FTSE4Good TIP Taiwan ESG Index and the TWSE Corporate Governance 100 Index. In addition, the Company was ranked in the top 5% for the fifth time in the 9th Corporate Governance Evaluation of TWSE Listed Companies released in 2023. These performances show that our continued efforts in corporate governance are recognized.



Note: On August 3, 2022, Nanya's Board of Directors approved the establishment of a Sustainable Development Committee and the merger of the original Risk Management Committee based on functional considerations.

► 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 directors possess the necessary professional knowledge, skills, and qualities to carry out their duties, and are guided by the principles of sustainable management to create the maximum interests for the shareholders. The main responsibilities of the Board of Directors are to ensure transparency of company information and compliance with laws and regulations, appoint senior managements, formulate earnings distribution proposals, and supervise and guide company operations. To establish a sound governance system for the Board of Directors, enhance its supervisory function, and strengthen its management capabilities, Nanya has formulated its [Rules of Meetings of the Board of Directors](#), which stipulate the relevant provisions for conducting its business to ensure compliance. The Board of Directors held a total of 6 meetings in 2022, with an average attendance rate of 96% among the directors, including attendance in person (93%) and attendance by proxy.



The Board of Directors held a total of **6** meetings in 2022, with an average attendance rate of **96%** among the directors, including attendance in person (93%) and attendance by proxy.

Nomination and Election of Board Members

Nanya has established fair, just, and open [Rules for the Election of Directors](#), encouraging shareholders to participate in the nomination and election of directors. The candidate nomination system and cumulative voting method are adopted 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 three-year term. The Company has also established regulations for evaluating the performance of the Board of Directors. The evaluations are conducted regularly every year and evaluation results serve as a reference for the nomination and re-election of directors.

Management of Conflict of Interest

Nanya has provisions on avoidance of interests in the rules of Meetings of the Board of Directors, and the charters of Audit Committee, Compensation Committee, and Sustainable Development Committee. If a director or a juristic person that the director represents is an interested party in relation to an agenda item, the director shall state the important contents of the interested party relationship at the respective meeting. When the relationship is likely to harm the interest of the company, that director shall not participate in discussion or voting on that agenda item and shall recuse himself or herself from the discussion or the voting on the item and shall not exercise voting rights as proxy for another director. In addition, the Company also has [Codes of Ethics for Directors and Managers](#), which requires relevant personnel to adhere to ethical standards when performing their duties and to avoid personal interest or potential conflicts of interest that may affect the overall interests of the company, in order to prevent actions that may harm the interests of the company and its shareholders.

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 Board of Directors consists of 12 members with diverse professional backgrounds, including 4 independent directors and 2 female directors, accounting for 33% and 17% of the total, respectively. Moreover, at least one of the independent directors has expertise in accounting or finance, and all independent directors hold concurrent position as independent directors in no more than three other public companies. There are 8 directors, representing 67% of the total, who do not hold managerial positions in Nanya. Additionally, the Chairman of the Board also does not concurrently serve as a senior executive of Nanya, which demonstrates the spirit of sustainable corporate governance through the separation of responsibilities. As of the end of 2022, 3 directors were aged between 51 and 60 years, while the others were over 60. The average tenure of the directors is 9.4 years.



Implementation
of Board
Diversity Policy

Professional Courses for Board Members

To enhance the professional competence of the directors, the Company arranges at least 6 hours of training courses for them every year. In 2022, the total number of training hours for the directors was 92 hours, with an average of 7.7 hours per director. The courses included a variety of topics such as economics, corporate governance, information security governance, sustainable development, circular economy, net-zero emissions, green industries, and legal compliance. For information on the training courses of the directors, please refer to pages 58 to 59 of Nanya's [2022 Annual Report](#).

In addition to their diverse professional backgrounds, Nanya's directors also have experience as senior managers, government officials, or public representatives, which provide them with the multidimensional abilities required to perform their duties as directors. In 2023, the Company will continue to plan and arrange training courses for the directors on topics related to sustainable development, corporate governance, or risk management, in response to the development trends of sustainability issues and corporate governance, and to strengthen the comprehensive abilities of the directors.



In 2022, the total number of training hours for the directors was **92** hours, with an average of **7.7** hours per director.

Functional Committees and Main Duties

To strengthen the supervisory functions and management mechanisms of the Board of Directors, the Audit Committee, Compensation Committee, and Sustainable Development Committee were set up under Nanya's Board of Directors. Each functional committee is responsible to the Board of Directors and submits their proposals to the Board of Directors for approval.

Audit Committee



- The Committee consists of 4 independent directors, with Mr. Ching-Chyi Lai serving as the convener.
- The Committee held 5 meetings in 2022, with a 100% attendance rate.

Authority and responsibility: To supervise the execution of the Company's business operations and financial status, audit the Company's financial statements, assist the Board of Directors in carrying out its supervisory responsibilities, and be responsible for tasks assigned by the Company Act, Securities and Exchange Act, and other relevant laws and regulations.

Compensation Committee



- The Committee consists of 4 independent Directors, with Mr. Shu-Po Hsu serving as the convener.
- The Committee held 2 meetings in 2022, with a 100% attendance rate.

Authority and responsibility: To establish and periodically review policies, systems, standards, and structures for the performance assessments and compensation of the directors and executives.

Sustainable Development Committee



- On August 3, 2022, Nanya's Board of Directors approved the establishment of a Sustainable Development Committee and the merger of the original Risk Management Committee based on functional considerations.
- The Committee consists of 7 directors, including 4 independent directors, with Mr. Pei-Ing Lee serving as the convener.
- The Committee held 1 meeting in 2022, with a 100% attendance rate.

Authority and responsibility: To deliberate on the Company's policies, strategies, and management guidelines regarding sustainable development and risk management; to oversee the Company's promotion of sustainable development and risk management related matters, as well as their implementation plans; to review significant information related to sustainable development, including the sustainability reports and other publicly disclosure matters, and to report to the Board of Directors.

Performance Evaluations of Board of Directors and Functional Committees

To implement corporate governance and improve the functionality of the Board of Directors, Nanya's Board of Directors has established the [Regulations of Performance Evaluation of the Board of Directors](#). The performance evaluations of the Board of Directors and its functional committees are regularly performed each year. In 2022, the performance evaluations were conducted on the Board as a whole, individual directors, the Audit Committee, the Compensation Committee, and the Risk Management Committee. The evaluation results were all "good" and were reported to the Board of Directors in November 2022. For information on the implementation of the 2022 performance evaluations for the Board of Directors and its functional committees, please refer to pages 32 to 33 of Nanya's [2022 Annual Report](#).

Compensation of Senior Executives

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.



- The Company's highest paid employee in Taiwan in 2022 received approximately **18.19** times the median total pay of other employees.
- The increase in pay of the highest paid employee in 2022 compared to 2021 was **2.96** times 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

Shareholding Status of Senior Executives

March 26, 2023

Position Title	Name	Number of Shares Held
President	Pei-Ing Lee	1,455,098
Executive Vice President	Lin-Chin Su	650,601
Vice President	Joseph Wu	610,000
Vice President	Rex Chuang	459,000
Vice President	Yau-Ming Chen	0
Assistant Vice President	Chi-Meng Su	0
Assistant Vice President	Mark Mao	0
Assistant Vice President	Jeff Lin	216,027
Assistant Vice President	Rex Chen	62,000
Assistant Vice President	Chuan-Jen Chang	173,048

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Risk Management

Nanya Technology Corporation established a Risk Management Committee under the Board of Directors in 2020 to strengthen board functions and risk management mechanisms. The Company further established the Sustainable Development Committee under the Board of Directors in August 2022 with consideration to the implementation of ESG to achieve sustainable development and updated development goals. The Risk Management Committee was then merged into the Sustainable Development Committee due considerations of authority and function. The Sustainable Development Committee Charter stipulates that the committee shall have no less than three members, and half or more of all members must be independent directors. The committee is currently formed by 4 independent directors and 3 directors.

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.
- The Company 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

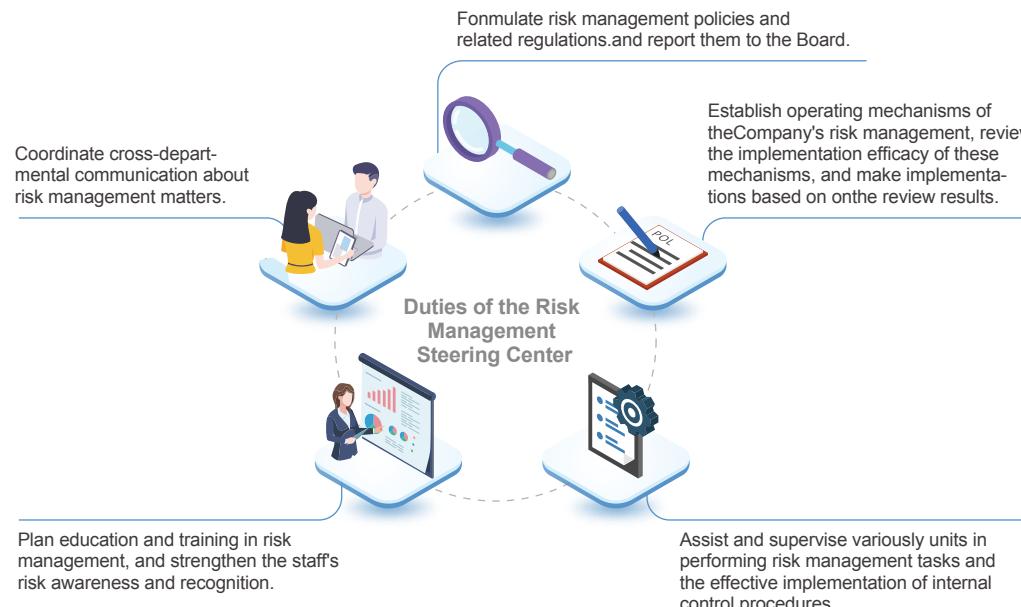
The board of directors is the highest level decision-making and supervision unit for risk management, and is responsible for establishing the Company's risk management policy and regulations. The board of directors supervises the implementation of the risk management system and the effective operation 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 twice a year and reports the situation of risk management or major risk items to the Board of Directors in a timely manner.



In accordance with the [Risk Management Regulations](#), Nanya established the Risk Management Steering Center. 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 the entire risk control. Moreover, to conform with the Company's operational strategies, the Steering Center set up five functional teams, i.e., industrial and operational, information security, hazard, finance, and legal, under its purview. Each risk management team not only shall gather risk information on internal and external environments to perform daily risk monitoring, but shall also constantly follow up and assess the risk level of risk factors, take improvement measures, and report implementation results of risk management to the Steering Center.

The Risk Management Steering Center shall meet quarterly to review the operational performance and business continuity plans of each risk management team to ensure the applicability, suitability, and effectiveness of the ongoing operations of these risk teams.

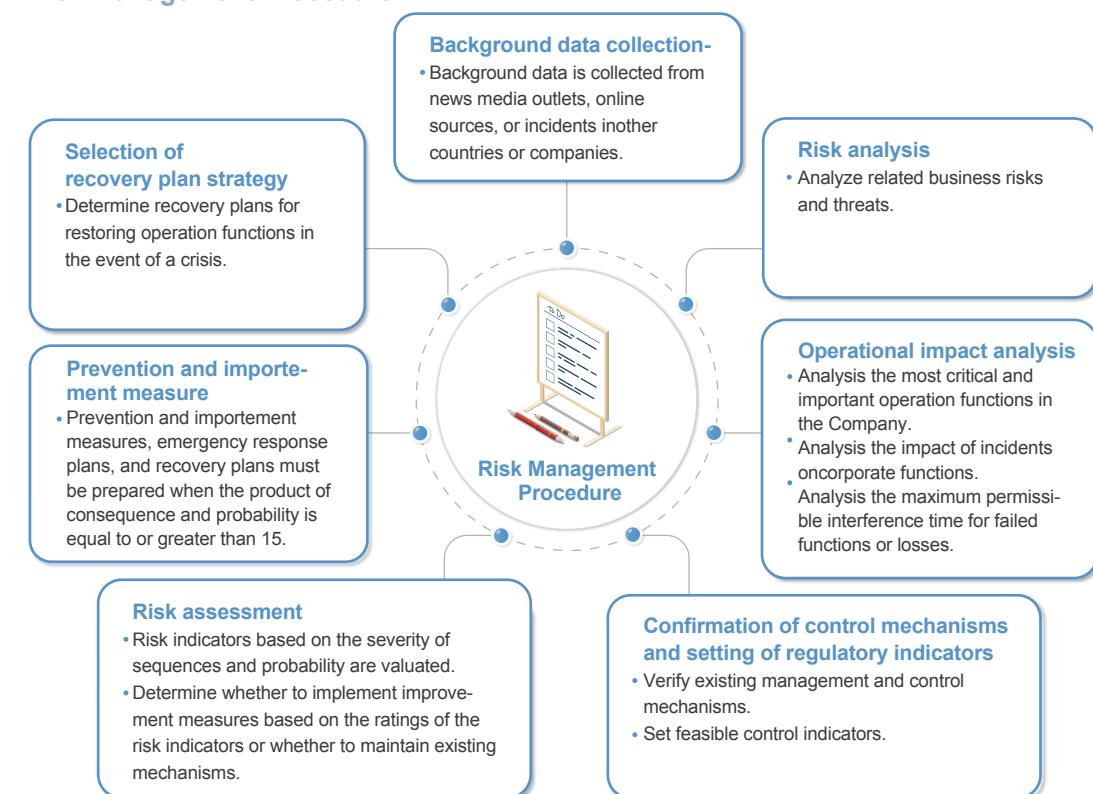
The Corp. Auditors shall annually check the implementation status of risk management policies and higher risk items, provide suggestions for improvements in a timely manner, and follow up the improvement results. In addition, external (third-party) audits are performed every two years.



► 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.

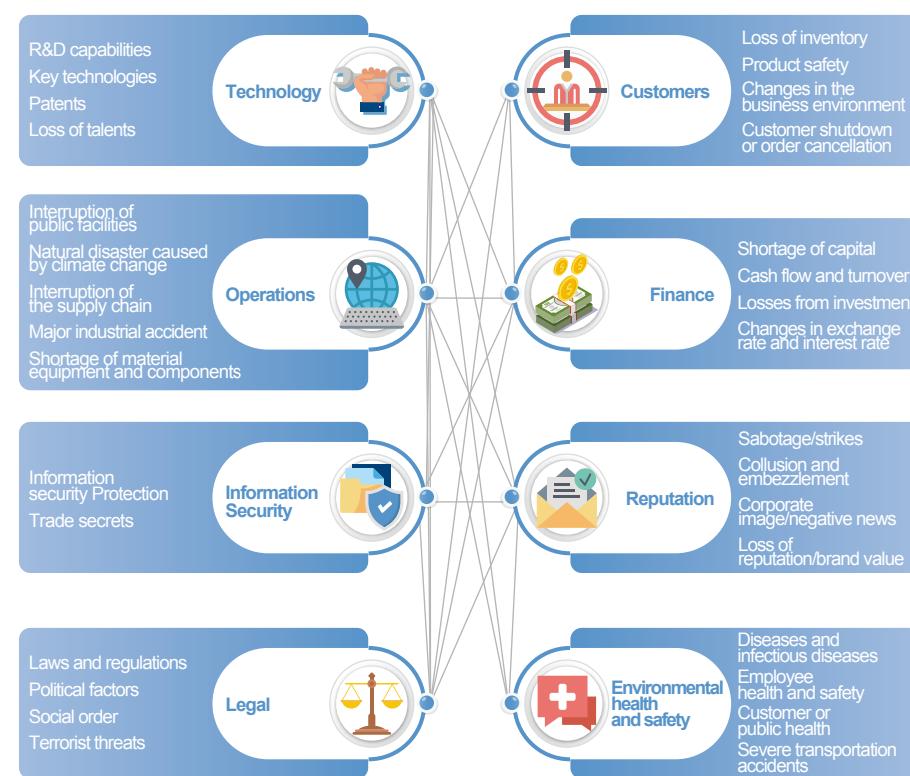
Risk Management Procedure



In accordance with the mechanisms and values of the ISO 31000 Enterprise Risk Management (ERM) Guidelines, Nanya Technology Corporation 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.

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, EHS, law, 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

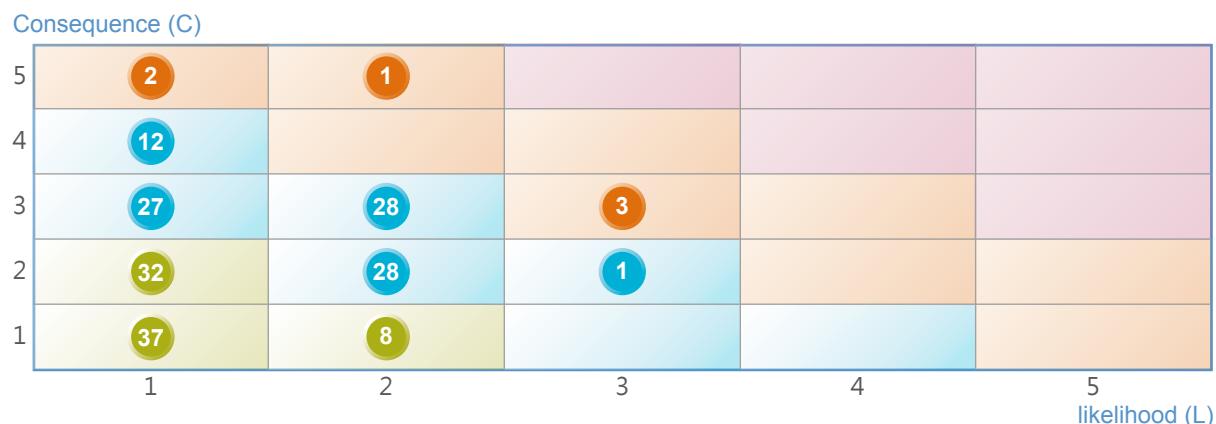
certification of ISO9001, ISO14001, ISO50001, ISO27001, and ISO45001. To reduce risks and damage of emergency incidents, Nanya has a complete set of operational norms and methods for handling emergency anomalies, covering manufacturing, supply chain and warehousing, information security, human resources 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, there are specific steps and improvement measures for the shortage of raw materials, events that affect 10% and above of production capacity (e.g. earthquake, typhoon, toxic gas, fire alarm, and labor shortage), utility system abnormality, automated system abnormality, contractor production capacity abnormality, and customers returning goods after sale.

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. We use quarterly meetings to discuss related prevention and improvement measures on a regular basis to enhance our standard operating procedures. We also conduct regular drills for emergency response measures to effectively minimize risks.

Risk Identification

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 179 risk items were proposed in 2022, 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; 6 items required improvement plans, 96 items should have indicators set up for monitoring, and 77 items were kept under observation.



Evaluation criteria of consequence: 1 = mild; 5 = severe

Evaluation criteria of likelihood 1 = rare; 5 = always

Response measures: ■ Continue observation ■ Set indicators for monitoring
■ Require improvement plan ■ Immediately make improvement

Response Measures to Risks

After risk identification, items that required improvement plans were mainly in the aspects of operations, accounting for 5 items, and information security, accounting for 1 item. Each team formulated and implemented response measures for the items, and also established handling mechanisms.

Operational risk

- COVID-19:** Continue to monitor domestic and overseas vaccination rate, encourage employees to be vaccinated as soon as possible and report it to the Company, so that we can monitor employee vaccination rate and herd immunity. At present, 96.65% of the Company's employees received the first shot, 95.62% received the second shot, 89.44% received the third shot, and 8.82% received the fourth shot. The Company has had 2,360 confirmed cases so far, in which 2,355 have completed isolation, and average rate of confirmed cases was 65.4%.
- 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.
- Manpower:** Strengthened talent training, improved salaries and benefits, collaborated with high-quality universities and colleges in internships to prevent unstable manpower, and cooperated with human resource agencies for a long period of time, so that the Company will be able to immediately recruit short-term manpower. The percentage of job openings filled internally increased from 1.26% in January 2022 to 55.88% in December, an increase of 29.35% compared with the previous year.



Information Security Risk

- Completed an access control list (ACL) for computers of high risk endpoints (1,113 computes in total), and installed the unified threat management (UTM) system on key equipment (10 in total) to lower the scope affected by risks.
- Installed an information security monitoring system on OT equipment 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.
- Added "supply chain information security threat"; the Company plans to implement differential management through supplier classification; design a self-evaluation form for suppliers to evaluate the current status of their information security, and then use suppliers' self-evaluation results and attributes as the basis for classification; conduct on-site audits for key high-risk suppliers.
- The goal is to complete audits of (3) high risk suppliers before November 30, 2023.



Finance Risk

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



Hazard Risk

- Under the continued operation of ISO45001 & ISO14001 management systems, the Safety and Hygiene Division continues to identify potential EHS risks. We have established indicators and continue to monitor low risk hazards. For medium and high risks, we proposed and implemented improvement plans, and presented the risks that were identified and their control measures in quarterly risk management meetings.
- Risk management will focus on expansion (construction) projects (parking lot, expansion of the new Fab 5A) in 2022, and will mainly aim to prevent occupational accidents from occurring in the construction process. The Company appointed additional personnel to carry out daily inspections and audits of the expansion area. Furthermore, project audits and management is carried out in coordination with the related departments. We also participate in monthly meetings of the construction site collaboration organization and deficiency improvement reviews, in hopes of eliminating or reducing the risk of severe occupational accidents during the expansion (construction) period.
- We have consistently directed our efforts to the implementation of Enterprise Risk Management (ERM), and we continue to identify potential risks and implement management measures for different levels of risk to mitigate the impact of incidents. We continue to improve our BCP/BCM to rapidly recover from impacts and reduce losses.



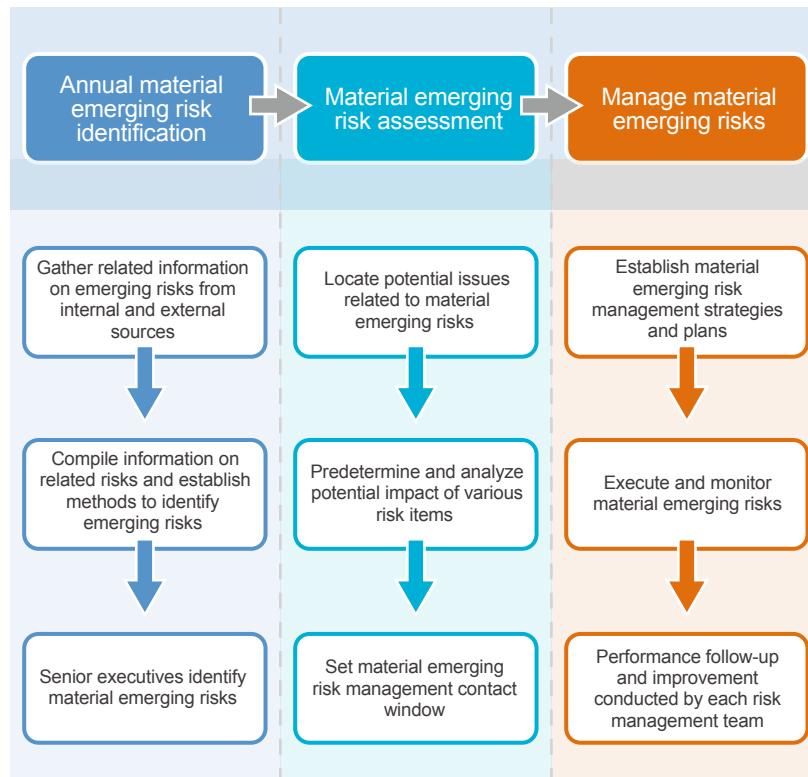
Legal Risk

- Compliance with the Personal Data Protection Act:** 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 and updated labor contracts and employee manuals of overseas subsidiaries to ensure employee and customer privacy. 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, and immediately update the versions to ensure their effectiveness.
- Compliance with the climate change regulations:** The Company became a founding member of the Semiconductor Climate Consortium (SCC) in 2022, and strives to continue reducing GHG emissions through technological innovations and maintaining close communication with members of the SCC. The Company publishes annual progress reports on the 3 major scopes of carbon emissions each year. We set short-term and long-term carbon reduction goals in coordination with government policy, in order to achieve net zero emissions by 2050. Carbon emission reduction measures are included in the planning and design of new fabs. The best available control technology (BACT) is used for air pollution prevention equipment. The prohibition or restricted use of GHG with high warming potential are prohibited or restricted, and may affect the use of process raw materials. We will evaluate a voluntary reduction plan to offset our emissions, and pay carbon fees according to the type of emissions, which may increase operating costs. The Company has low risk of being ordered to suspend operations.
- 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.



Emerging Risks

Nanya Technology Corporation 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 group 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.



Department heads gathered emerging risks in 2022, 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

The government's energy transformation and carbon reduction policy may put pressure on the Nanya's operations

Environmental risks

Risk description

- The government adopted a new energy policy to achieve a non-nuclear homeland and international carbon reduction commitment by 2025, and is thus promoting the energy transformation of Taiwan Power Company and general enterprises.
- The government will pass carbon reduction measures into law and promote the carbon reduction transition of enterprises to achieve its commitment to net zero emissions by 2050.
- The government may begin collecting carbon fees in 2024, which might increase the Company's operating costs.
- The government is expected to set carbon emission limits for each industry in 3-5 years to control total GHG emissions.

Impact

- During peak electricity usage in the future, if the power generators or transmission and distribution systems of Taiwan Power Company malfunction and renewable energy supply is unstable, it may result in power rationing.
- When carbon reduction measures are passed into law in the future, the cost of raw material production plants will increase and cause the Company's raw materials costs to increase, creating the issue of green inflation.
- When Taiwan begins to collect carbon fees in the future, Nanya Technology Corporation expects expenses to increase by NT\$132 million each year, which will impact profits.
- Additional expenses are required to purchase carbon rights when GHG emissions exceed the total limit.

Response measures

- To respond to and prevent the risk of power rationing, we have installed diesel fuel power generators and Dynamic Uninterruptible Power Supply (DUPS) to increase the operational resilience of our fabs, and planned the following measures:
 - Set electricity saving plans and reduce overall electricity consumption.
 - Reduce electricity use for non-production purposes when there is insufficient power supply.
 - Review available space and install solar panels to generate electricity for self use.
- In response to future limits on GHG emissions, the Company began implementing the Science Based Target (SBT) project in 2022 to reduce GHG emissions.
- Continue to observe the legislation of related laws and regulations.

Social Risks**Emerging Risk 2**
Insufficient key talents**Risk description**

- The semiconductor industry has become a key industry that has attracted global attention. Recently, many major companies are building new fabs, expanding production capacity, or upgrading technologies, and it has significantly increased demand on key semiconductor talent. Due to the severely low birth rate in Taiwan, the number of students graduating from science and engineering departments has significantly decreased, and impacted the mid-term and long-term talent supply of the overall industry.
- A domestic semiconductor manufacturer has announced that its new fab will recruit at least 15,800 employees. This does not include the manpower required when fabs that have passed the environmental impact assessment begin production in the future. As a result, the domestic semiconductor industry will continue to suffer from a labor shortage, which will increase the difficulty of recruiting key talent.

Impact

- The semiconductor industry has a shortage of technical talent, insufficient recruitment or loss of current talent will severely impact the product and process technology development of companies, which will further impact their long-term competitiveness.
- As new generation fabs are being built, a considerable amount of talent will be needed in the future, and 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.

Response measures

- 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 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.

Geopolitics**Emerging Risk 3**
Conflict between the United States and China has created tense political relations across the Taiwan Strait, creating uncertainty for future operations**Risk description**

- U.S. House of Representatives Speaker Nancy Pelosi visited Taiwan in August 2022, and caused China to conduct a large scale military exercise in the Taiwan Strait. The U.S. Congress recently passed several bills to support Taiwan and build closer relationships with Taiwan. Hence, cross-Strait relations may become a part of the conflict between the U.S. and China.

Impact

- If tensions in the Taiwan Strait rise, it may force the upstream supply chain to change its shipping route, which will significantly increase transportation time and cost.
- If tensions in the Taiwan Strait rise, it may also cause downstream customers to worry about the stability of the Company's deliveries, and transfer purchase orders to supply chains in other regions, affecting the company's purchase orders.
- If tensions in the Taiwan Strait rise, it may severely impact the confidence of international and domestic financial markets, and will impact the Company's operations.

Response measures

- Monitor the situation in the Taiwan Strait and increase inventory of raw materials when appropriate.
- Continue to develop new technologies and new products to enhance the company's technology and cost competitiveness, thereby strengthening customers' confidence.
- Consider increasing overseas hub to diversify the Company's operational risk and reduce customers' concern about the stability of delivery.

Other risks**Emerging Risk 4**
Information security – Hacking/Viruses may cause production, operational, or financial losses**Risk description**

- The rise and convenience of the Internet provides excellent channels and environment for cyber criminals. The number of information security incidents (mainly extortion) has significantly increased due to cyberattacks/viruses from hackers. The number of major information security incidents among public companies in Taiwan in the fourth quarter of 2022 was higher than the total of the first three quarters (as shown in the table below).

Major information security incidents of public companies in Taiwan in 2022

Quarter	2022Q1	2022Q2	2022Q3	2022Q4
Number of suppliers	3	0	2	6

Source: TWSE

- According to the Company's internal statistics, the number of hacking attempts in 2022 increased approximately 200% compared with 2021, showing a significant increase in information security risk.
- The supply chain has inadequate information security. When hackers cannot directly hack their main target, they will attack the relatively vulnerable supply chain instead to increase their chances of hacking their main target.

Impact

- If hackers obtain classified and sensitive data of the Company or customers, they will be able to threaten or extort the Company.
- Hackers that steal the Company's advanced process technologies will threaten the Company's sustainability and profitability in the long-term.
- If hackers paralyze the Company's operations, it will cause production or operational losses.

Response measures

- Establish complete monitoring mechanisms to immediately discover abnormal conduct and lower the probability of hacking or data leakage.
- Establish defense-in-depth to increase the difficulty of hacking, and encrypt classified files to prevent the data from being exploited or used for threats after being leaked.
- Continue to patch system vulnerabilities to lower known risks.
- Continue to analyze hacking methods and patch system vulnerabilities to block attacks.
- Continue to conduct information security incident drills to improve emergency response abilities.
- Establish supply chain classified management measures, and prepare a supplier information security self-evaluation questionnaire, to help suppliers examine potential risks and vulnerabilities, and thereby improve the overall information security of the supply chain.

► Risk Culture Construction

To establish a comprehensive risk management culture, Nanya Technology Corporation'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 2022 to review the implementation and operation of risk management.

The Risk Management Steering Center is headed by managerial officer (Executive vice president) as its director. 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 Technology Corporation provides a variety of incentives to encourage employee proposals and stimulate peers to think innovatively and reduce potential risks. The proposals are reviewed based on the expected benefits, creativity, application scope, completeness, and quality contributions, and incentives are provided as encouragement accordingly. The Company set up a 24-hour instant case report system information security line, employee feedback mechanisms etc. to provide employees with immediate response. We have deep-rooted the risk management culture among

all employees through TV walls, posters, and computer wallpapers. 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. Furthermore, the Company also irregularly organizes management activities to raise employees' risk awareness, such as the "Information Security Month" in 2022, during which information security seminars, online Q&A, and information security awareness training built employees' consensus of information security, and created a culture in which all employees participate in the prevention and improvement of risks.

	2019	2020	2021	2022
Number of improvement proposals put forward by employees and benefits				
Number of proposals (case)	225	207	207	212
Proposal (case-closing) bonus (Thousand NTD)	583	414	412	507
Proposal benefits (Thousand NTD)	368,722	1,583,318	882,517	756,744
Number of proposals in each category				
Process and equipment risks	105	67	61	68
Productivity and quality risks	91	114	85	41
Environmental health and safety risks	13	9	26	16
Other risks	16	17	35	87
Total	225	207	207	212

► Risk Management Education and Training

Nanya Technology Corporation annually arranges for the directors in the management to attend corporate governance and risk management courses held by institutions approved by the government. Moreover, the Company also arranged for Sustainable Development Committee members to attend risk management courses on the aspect of business strategies in 2022, so as to assist and strengthen 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 2022, with a total of 1,809 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 Technology Corporation 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 5 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.

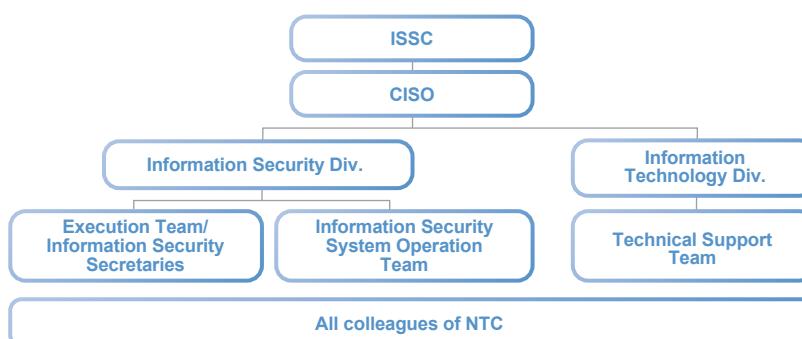
We have focused our efforts in the field of DRAM for several decades, and are fully aware of the challenges in developing DRAM processes and products, as well as the importance of advanced process development, production know-how, and intellectual property rights protection. This is why we take information 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 Technology Corporation 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, showing Nanya Technology Corporation's emphasis on its information security management system, while meeting international standards.

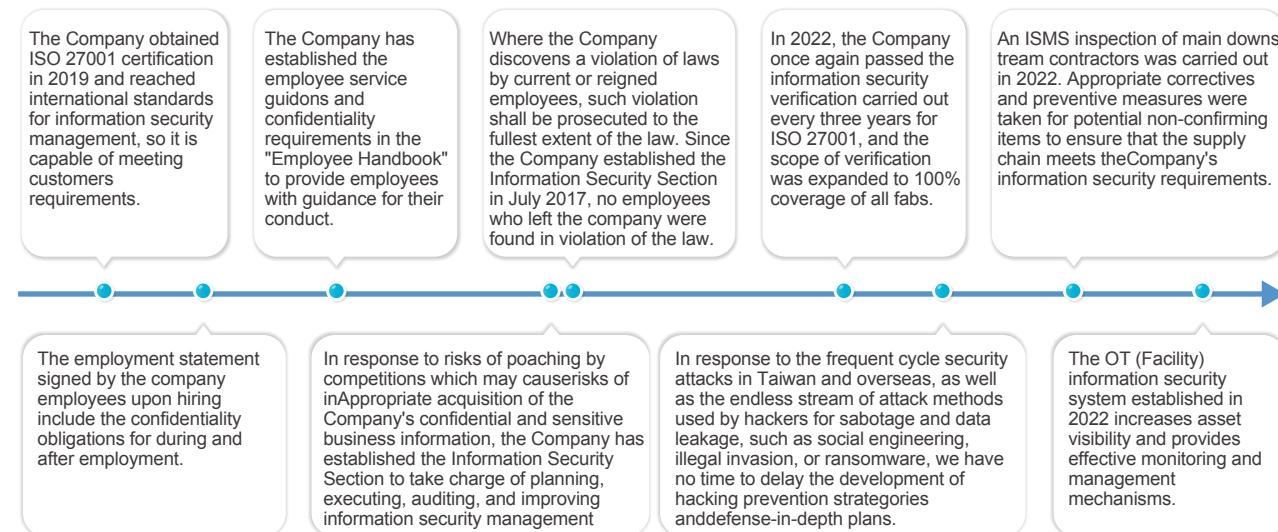
Nanya Technology Corporation established an inter-departmental Information Security Committee to advance information security management. The President serves as the convener and five level 1

supervisors were appointed as committee members. They include the Information Security Officer (Special Assistant Shin-An Niu) and heads of the Quality Assurance Division, Legal & IP Division, Human Resources Division, and Automated Information 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-Ing 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 coordination with the enactment of the Cyber Security Management Act, Nanya Technology Corporation obtains effective cyber security certificates the same as government agencies with Grade A information security responsibilities. We have already obtained 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, 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.



Nanya's improvement measures for information security management



Nanya's main measures for information security management



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 of severity and recovery cycle table

Degree 1	Degree 2	Degree 3
The suspension of operations of the system will suspend services provided with the primary functions.	The suspension of operations of the system will suspend services provided with the secondary functions.	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 Half a year	Recovery drill cycle Two years	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 each year 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 2022. 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

In terms of information security awareness training, Nanya Technology Corporation has invested many resources in hopes of raising information security awareness and building a consensus among all employees. We raise awareness among information security officers during monthly information security meetings, compare the performance of reports from supervisors ranked level 1 or above in quarterly information security meetings, conduct social engineering drills on a quarterly basis, and organize information security month activities each year. To develop a culture for the management of confidential information, all employees must complete reading courses of the "Company Confidential Information Management Regulations" each year. See the table below for courses and number of hours in 2022

Information Security Awareness Training Courses	Subjects	Number of hours
Information Security Month Online Q&A	All employees	1,827 hours
Information Security Seminar (Virtual Artillery Fire in the Russo-Ukrainian War – Modern Cyber Warfare)	Information security officers, Information Security Division	100 hours
Information Security Seminar (Sharing of Trade Secret Cases)	Supervisors, Information Security Section	104 hours
Social engineering exercises	All employees (excluding TA)	2,373 hours
Social engineering training	Employees who clicked on the link	198 hours
[Reading for all employees] Company Classified Information Management Guidelines	All employees	1,489 hours
[Reading for all employees] Sharing of Trade Secret Cases and Exchanges	All employees	775 hours
Total		6,866 hours

Information security month activities are organized every year to raise employees' information security awareness, and all employees participated in the production of the information security promotion clip. Implementation results are as follows

Item	Implementation results
Promote the participation of all employees and presentation in the form of short clips, and have share their own experiences of encountering fraud.	35 units submitted at least one short clip
Organized two physical information security seminars "Virtual Artillery Fire in the Russo-Ukrainian War – Modern Cyber Warfare" and "Sharing of Trade Secret Cases (Ministry of Justice Investigation Bureau)."	Unit supervisors and information security officers participated over 120 times.
All employees participate in Q&A on information security policy and rules.	99.9% of employees answered all questions correctly

Information security implementation results

Implementation results of Nanya Technology Corporation 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 2022 are shown in the table below:

Company Classified Information Management



Implementation measures

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.

Implementation results

There were no confidential information leakage incidents.

Social engineering exercises



Implementation measures

Every quarter 2 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.

Implementation results

There were over 28,000 participants in the 8 drills during the year.

Information security and monitoring



Implementation measures

Company's internal statistics, the number of hacking attempts has significantly increased since 2021. To lower the probability of hacking or data leakage and prevent data from being exploited or used make threats, the Company established a complete defense-in-depth system, analyzed hacking methods, continued to patch system loopholes, and appointed dedicated personnel for monitoring.

Implementation results

conduct penetration testing and red team assessments.

Business continuity

Implementation measures

1. 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.
2. 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 ≤ 1 time and < 24 hours each year.

Implementation results

1. Exercises were 100% completed for all 17 of the systems that required exercises to be performed in 2022.
2. Services of information systems were not suspended.

► Information Security Risk Protection

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 2022 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 cases
Amount of fines due to information security or network security incidents (NTD)	NT\$0

8-4



Business Integrity

Nanya Technology Corporation upholds the corporate culture and spirit for “diligence”. We use ethical, honest, fair, transparent, and responsible business philosophies to strengthen legal compliance. We established the “Code of Conduct for Directors and Managerial Officers” for senior executives and the “Ethical Corporate Management Best Practice Principles,” “Labor and Ethical Work Guidelines” and “Antitrust and Competition Legal Compliance Principles” for employees. We established the digital transaction platform for suppliers and a comprehensive auditing system to implement ethical governance and prevent violations of laws. Nanya Technology Corporation did not have any violations in 2022. Nanya Technology Corporation 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 Technology Corporation referenced the Code of Conduct of the Responsible Business Alliance and established the [Labor Ethical Management Policy](#) and Business and Ethical Code of Conduct as the basis for business conduct, and periodically carries out RBA VAP verification, receiving platinum grade with a perfect score in 2022. in which the Business and Ethical Code of 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 to ensure there are no violations of human rights. The “Labor and Ethics Policy” and “Business and Ethical Code of 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%. We continued to offer the RBA Labor and Ethical Code of Conduct Course and Business and Ethical Code of Conduct Course for all employees in 2022; training coverage reached 100%. We also offered the digital RBA Labor and Ethical Code of Conduct Course for all new recruits.



To continue to optimize the workplace environment, Nanya Technology Corporation 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”, “Business and Ethical Code of 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 training,” and “zero illegal infringement in the workplace”. The training completion rate was 100% for all courses.

Ethical corporate management and labor ethical education results

	2020	2021	2022	2023 Goals
“RBA Labor and Ethical Code of Conduct Course” completion rate ^{Note 1}	100%	100%	100%	100%
“Business and Ethical Code of Conduct Course” completion rate ^{Note 2}	100%	100%	100%	100%
“Anti-corruption Course” completion rate ^{Note 3}	100%	100%	100%	100%
“Senior Manager Ethical Corporate Management Course” completion rate ^{Note 4}	100%	100%	100%	100%
Completion rate of “Advocacy Briefing on Prevention of Insider Trading” ^{Note 5}	100%	100%	100%	100%
“Occupational Hazards and Preventive Training” completion rate ^{Note 6}	100%	100%	100%	100%
“Antitrust promotion” completion rate ^{Note 7}	100%	100%	100%	100%

Note 1: A total of 3,603 individuals completed the “RBA Labor and Ethical Code of Conduct Course” in 2022. (organized in October-November 2022)

Note 2: A total of 3,603 individuals completed the “Business and Ethical Code of Conduct Course” in 2022. (organized in October-November 2022)

Note 3: A total of 3,601 individuals completed the “Anti-corruption Course” in 2022. (organized in July-August 2022)

Note 4: The “Senior Executive Ethical Corporate Management Course” was incorporated into the “Business and Ethical Code of Conduct Course” and a total of 10 individuals completed the training in 2022.

Note 5: A total of 3,603 individuals completed the “Insider Trading Prevention Training” in 2022. (organized in October-November 2022)

Note 6: The “Occupational Hazards and Preventive Training” course includes both physical and digital courses. In 2022, a total of 2 physical courses were held, and the attendees consisted of department heads, project supervisors, chief engineers/managers, and entry-level managers of direct units (105 individuals received training), and the digital courses were provided to all employees (3,603 individuals received training).

Note 7: A total of 3,532 individuals completed the “Anti-trust Act Course” in 2022. (organized in September-October 2022)

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 Technology Corporation established the “[Antitrust Policy](#)”, “Antitrust and Competition Legal Compliance Principles” and the “Antitrust and Competition Legal Compliance Operating Procedures” 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 the compliance handbook. No cases occurred in 2022.

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 165 of Nanya Technology Corporation's [2022 Annual Report](#)). The Company has engaged counsels to deal with the case to protect its interests.

► Anti-corruption

All employees must abide by Nanya's “[Business and Ethical Code of 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 Business and Ethical Code of 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.

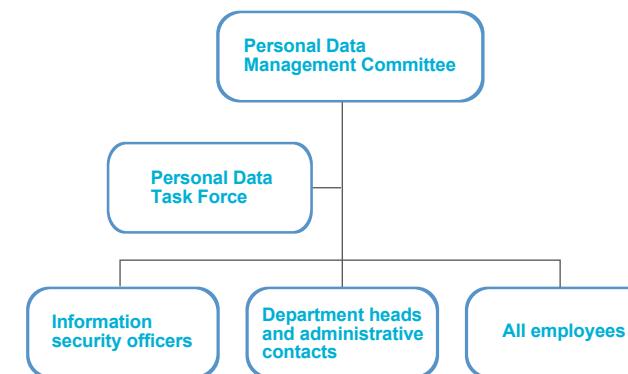
Personnel holding positions involved in business, procurement, outsourcing, construction supervision, and budget and other interests of vendors may not accept the invitation of vendors to any form of entertainment, and may not accept money or other benefits from vendors, in order to prevent all forms 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 2022 and provided 1,801 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”. No cases of corruption had occurred from 2019 to 2022.

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 2022.

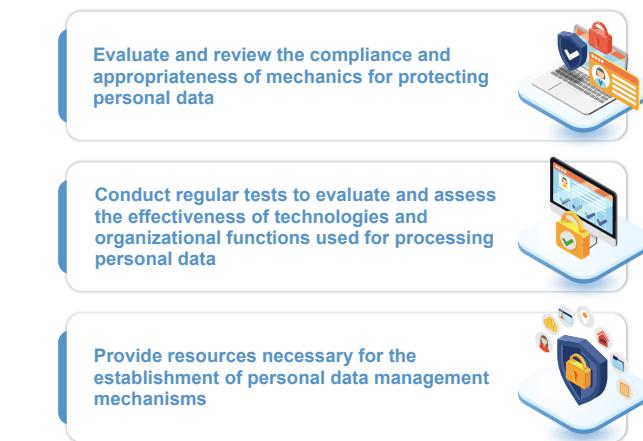
► Protection of Personal Data

The Company has established the Personal Data Management Procedures 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 manage personal data processing risk, the Company compiles a personal data inventory and assesses whether it is in compliance with current policy each year. We then implement 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 were found in 2022.

Structure of the Personal Data Management Committee



Duties of the Personal Data Management Committee



Duties of the Personal Data Management Committee

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 and implemented related systems in subsidiaries to increase employees' awareness for personal information protection and reduce the risks of violations. All 3,603 employees received personal data protection training in 2022 with good results. 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 2022. Furthermore, the data is not used for other purposes.

Number of violations of personal data regulations and fines

	2019	2020	2021	2022
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.

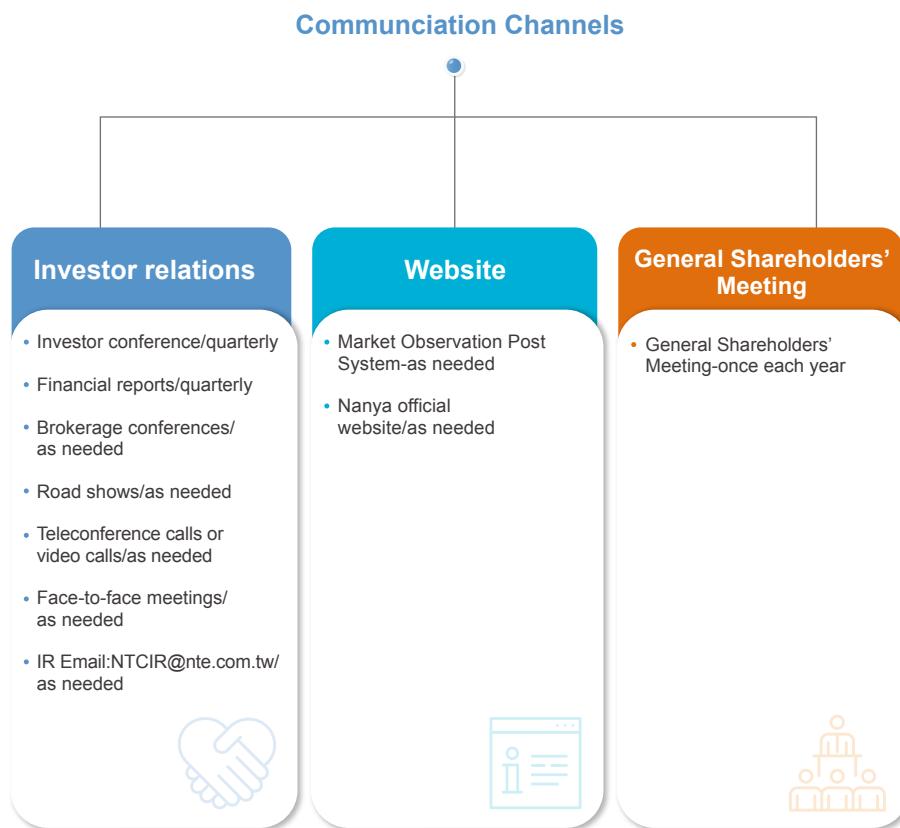
Internal audit items

	2019	2020	2021	2022
Number of audit items	45	45	42	42
Number of anomalies discovered	4	3	2	3 ^{Note}
Anomaly improvement rate	100%	100%	100%	100%

Note: The 3 items include 1 engineering-related item, 1 computer-related item, and 1 finance-related item; all improvements were completed.

Information Disclosure

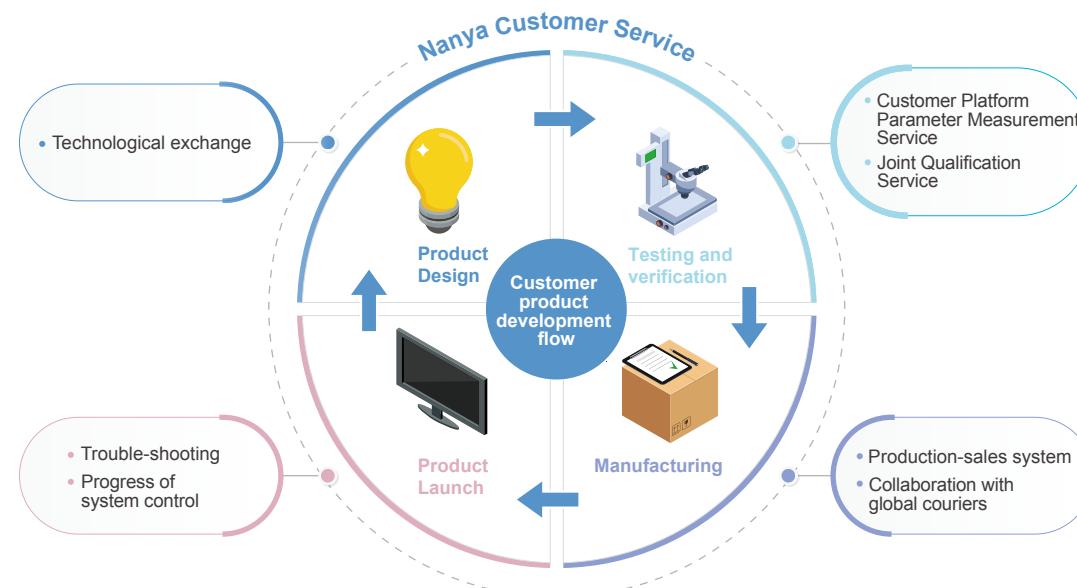
Nanya Technology Corporation uses multiple and transparent channels to disclose related information to stakeholders in real time. In 2022, we conducted 4 quarterly investor conferences and participated in 25 investor forums and seminars organized by external securities brokers. We also uploaded financial data and related information and videos to the company website/[Investor Relations Section](#) and Market Observation Post System in accordance with regulatory requirements so that investors are able to receive correct and transparent information related to the Company's operation and financial results in real-time.



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 controller chip makers 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.

Customer service process



▶ Product Design and Testing Verification Stage

In order to improve the efficiency and frequency of customer service 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, organizing irregular technology exchange events to meet the technical needs of customers. Despite business travel restrictions due to the pandemic over the past three years, Nanya Technology Corporation continued to provide uninterrupted services by switching to online technology exchanges. A total of 115 sessions were held in 2022 and provided technical support and helped resolve issues faced by engineers of customers in design and testing.

In addition, through the highly efficient, intensive, and high-quality customer platform parameter measurement service, of which 950 cases were completed in 2022, Nanya assisted customers in understanding the characteristics of their product platforms so that the new product development progress and verification cycles of customers were significantly accelerated, reducing investment risks and helping final products to be launched in a timely manner in the demand market. Nanya also provides joint qualification service for customers to assist them in development and verification at the initial stage of products. Therefore, compatibility issues may be detected early, and improved before mass production. A total of 31 cases were completed under the joint qualification services in 2022.

▶ Production and Sales Stage

Nanya Technology Corporation 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.

▶ 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 complaint handling process

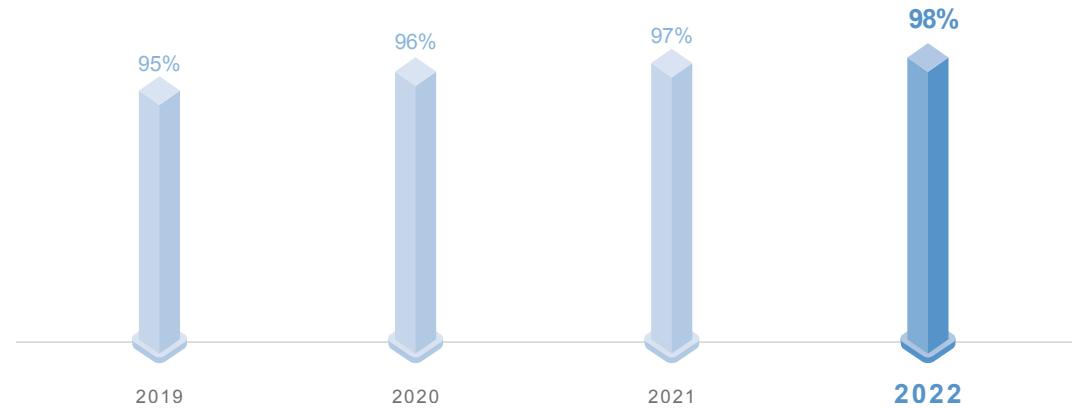


Note: If the case requires other analysis to verify the root cause, we update the progress of analysis according to the analysis plan until the case is closed.

Achieving rate of customer complaint cases

98% of customer complaint cases were resolved within target deadlines in 2022. We will continue to maintain frequent communication with customers and understand how customers use our products and failure conditions in the shortest time possible, in order to accelerate problem analysis and solve problems. The cases that were not resolved within the deadline involved more complex analysis, and required customer platform analysis, measurement platform signals, parameters adjustment, and development of testing programs. This is why the cases took longer. Progress is periodically updated and analyzed in the analysis process, and plans are discussed and analyzed with customers.

Achieving rate of customer complaint cases



Customer Privacy Protection

Customers are extremely important partners of Nanya Technology Corporation, and the privacy and confidential information of customers are treated as if they were the Company's confidential information. To ensure confidential information is well protected, Nanya Technology Corporation 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 2022, 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 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, business 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.

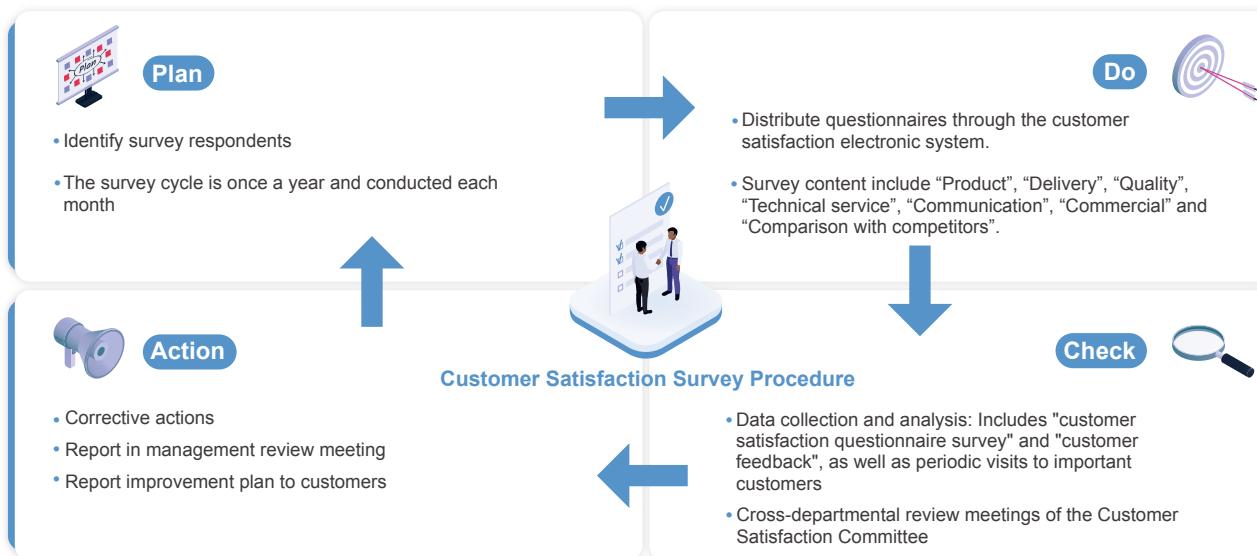
In addition to the customer satisfaction survey, customers regularly conducts business and technical review meetings with Nanya 's service team, Nanya is able to keep close relationships with customers and provide better service.

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.

Customer Satisfaction Survey Procedure



The average overall satisfaction score of 2022 was 94.7 points, reaching the target of 91 points. Continue to maintain a high level of customer satisfaction above 91 points

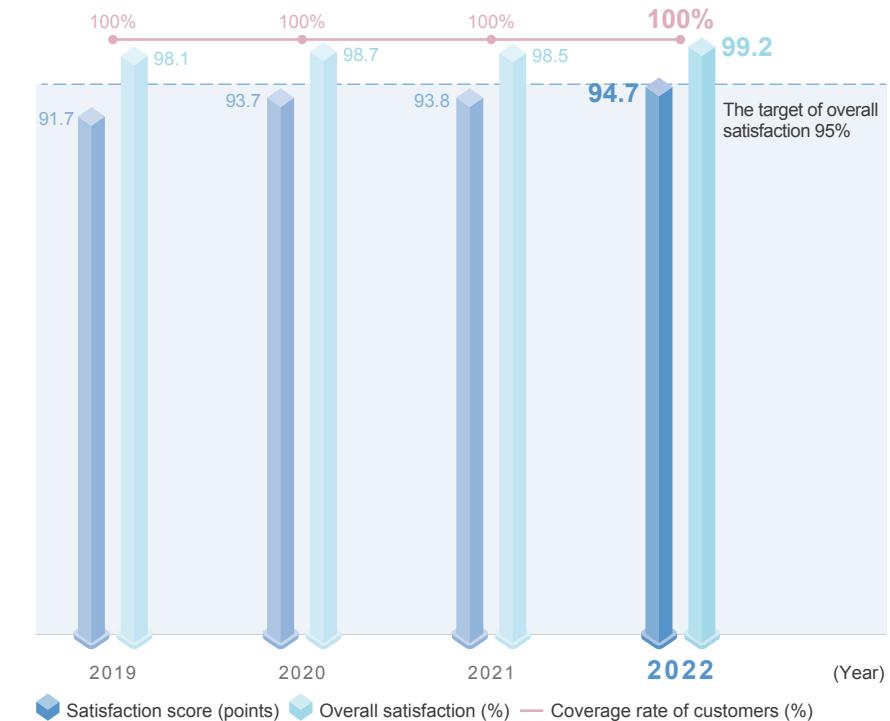
Our customer satisfaction has gradually increased and the target score for 2023 is 91 points and above. The target setting of the customer satisfaction survey is to consider the fluctuation of the industrial characteristics and the annual regular review of the performance and benchmarking, and set a reasonable target, submitted to the President for approval by the Quality Assurance Division.

The overall performance of Nanya over the years has been affirmed by customers. In 2022, 99.2% of customers are satisfied with the overall performance of Nanya. It has maintained a high level of customer satisfaction ratio of more than 95% for five years. The goal for customer satisfaction is 95% and above in 2023.

Customers highly recognize the Nanya's performance on delivery, technical service and communication, 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 2022, there were no product recalls.

Customer satisfaction results



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9-1



About this Report

Report Overview

This report is the 13th Sustainability Report issued by Nanya, and contains information regarding the Company's corporate governance, environmental sustainability development, employee care and social welfare practices from January 1, 2022 to December 31, 2022. The scope of contents includes Nanya Technology Corporation and subsidiaries, in which environmental and labor safety performance related data does not 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 very low significance to environment related use and consumption (compared with Nanya's 12-inch fab in New Taipei City, Taiwan). The statistics provided in this report have been obtained from Nanya's audited financial statements.

Date of Publication

Nanya's Sustainability Report is published annually

- Current edition: June 2023
- Last edition: June 2022
- Next edition: June 2024



Information disclosure timeframe
January 1, 2022 to December 31, 2022

Scope of data
Nanya's operations system include Nanya Technology Corporation and its subsidiaries

Data quality management

- Financial data: KPMG Taiwan
- Organization GHG inventory ISO 14064-1 : SGS
- Sustainability Information AA1000AS V3 : AFNOR ASIA

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 (V5.1) : TUV

Guidelines and Standards for Drafting
GRI Standards 2021

Level of Guarantee
AA 1000 Type II High Assurance Level

Sustainability Contact

- Sustainability and Risk Management Division
- Email: NTCESG@ntc.com.tw

Report Management

Procedures



9-2 Sustainability Performance

Primary indicators

Chapter of the Sustainability Report
on Nanya indicators

GRI Standard No.

2020

2021

2022

A Trustworthy Company		Business strategies and performance	201-1	610.1	856.0	569.5		
Operating revenue (NT\$100 million)				76.9	228.5	146.2		
Net income (NT\$100 million)				13.1	49.2	22.6		
Income tax expenses (NT\$100 million)				40.0	114.7	66.0		
Cash dividend (NT\$100 million)				51.4	75.0	78.4		
R&D expenses (NT\$100 million)				84.8	112.6	207.1		
Capital expenditures (NT\$100 million)				2.51	7.40	4.72		
Earnings per share (NT\$)				25%	25%	33%		
Ratio of independent directors (%)				100%	100%	96%		
Attendance rate of Board members (%)				100%	100%	100%		
"RBA Labor and Ethical Code of Conduct Course" completion rate (%)		Innovation	2-9	100%	100%	100%		
"Business and Ethical Code of Conduct Course" completion rate (%)				100%	100%	100%		
Anti-corruption training completion rate (%)				100%	100%	100%		
Internal audit anomaly improvement rate (%)				100%	100%	100%		
Grievance and complaint cases				205-3	3	4		

The Best Partner for Our Customer

Annual R&D expenses as a percentage of revenue (%)	Innovation	205-2	8.4%	8.8%	13.8%
R&D personnel as a percentage of all employees (%)			26.0%	26.8%	27.1%
Total number of patents approved worldwide			4,636	5,101	5,913
Number of trade secrets registered			4,031	1,877	3,469
Benefits from improvement proposal activities (100 Million NTD)			15.83	8.83	7.57
Time-based handling rate of customer complaints (%)	Integrity and Transparency	205-3	96%	97%	98%
Customer satisfaction score			93.7	93.8	94.7
Coverage of customer satisfaction survey (%)			100%	100%	100%

Primary indicators

Chapter of the Sustainability Report on Nanya indicators

GRI Standard No.

2020

2021

2022

A Promoter of Shared Value		Responsible procurement	308-1	100%	100%	100%
Completion of Sustainability Management Self-evaluation Questionnaire by Tier 1 suppliers for risk self-assessment each year reached (%)				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 (%)				100%	100%	100%
Cumulative number of high risk significant suppliers subjected to audits of the Supplier Health Examination and Improvement Project each year				27	37	13
Use of compliant minerals by suppliers based on the results of required due diligence on responsible minerals (%)				100%	100%	100%
Audit the due diligence on responsible minerals of at least 3 suppliers every year				100%	100%	100%
Completion of safety and health guidance provided to high risk significant suppliers (%)			204-1	100%	100%	100%
Increase the ratio of local materials purchases (%)				30%	30%	30%
Increase the ratio of materials purchased locally (%)				23%	25%	23%
Percentage of major suppliers (including significant suppliers) that signed the Supplier (Contractor) Code of Conduct (%)		414-1	100%	100%	100%	
Percentage of new suppliers that signed (%)			100%	100%	100%	
Percentage of significant suppliers that signed (%)			100%	100%	100%	
Number of major suppliers (Tier 1)		2-6	304	295	282	
Number of Material Tier 1 Suppliers			82	80	80	
Proportion of Material Tier 1 Suppliers (%)			27%	27%	28%	
Proportion of procurement from Material Tier 1 Suppliers (%)			68%	72%	69%	
Percentage of major suppliers assessed with high sustainability risk (%)		308-2	5%	5%	5%	
Percentage of significant suppliers assessed with high sustainability risk (%)			5%	5%	5%	
Percentage of Tier 2 significant suppliers assessed with high sustainability risk assessment (%)			5%	5%	5%	
Number of suppliers audited		308-1	20	20	20	
Average score of sustainability audit			81	88	90	
Number of non-conforming items in sustainability audit			64	81	74	
Improvement completion rate of sustainability audit (%)			100%	100%	100%	

Primary indicators

Chapter of the Sustainability Report on Nanya indicators

GRI Standard No.

2020

2021

2022

A Practitioner of Green Technology		Green	302-5	1	8	3
Primary indicators	Chapter of the Sustainability Report on Nanya indicators			2020	2021	2022
Raw material consumption improvement plan: Extensions to use cycle (Item No.)						
Raw material consumption improvement plan: Formula development of new processes (Item No.)						
Raw material consumption improvement plan: Reductions of process consumption (Item No.)						
GHG emissions (metric tons - CO ₂ e) (includes Scope 1 and Scope 2 market coefficient method)			305-1	469,744	430,048	440,954
Scope 1 (Metric tons - CO ₂ e)			305-2	90,327	56,409	59,788
Scope 2 (Metric tons - CO ₂ e) (market coefficient method)			305-1	379,417	373,639	381,166
Scope 2 (Metric tons - CO ₂ e) (regional coefficient method)			305-2	379,417	374,945	385,177
Scope 3 (Metric tons - CO ₂ e)			305-3	1,151,865	1,221,991	740,675.3
Fluorine-containing GHG emissions (metric tons - CO ₂ e)				44,669	43,239	45,248
GHG emissions per unit product area (Scope 1+2) (kg CO ₂ e/wafer area (cm ²))				0.78	0.73	0.75
GHG emissions per unit capacity (Scope 1+2) (kg CO ₂ e/thousand die)				420	383	405
GHG emissions per unit revenue (Scope 1+2) (kg CO ₂ e/NT\$1 million)				7,700	5,024	7,743
PFC reduction performance (metric tons CO ₂ e)				589,870	597,952	631,790
PFC emissions per unit capacity (kg CO ₂ e/thousand die)				433	427	421
PFC emissions per unit revenue (kg CO ₂ e/NT\$1 million)				732	505	747
Energy use (MWh) (including electricity, natural gas, and steam)				812,712	826,279	831,862
Energy use (MWh) (Non-renewable energy)				812,350	823,679	823,982
Energy use (MWh) (Renewable energy)				362	2,600	7,880
Energy costs (NTD 10k)				170,206	177,674	193,587
Energy costs per unit production capacity (NTD 10k/thousand die)				0.152	0.158	0.178
Energy cost per unit revenue (NTD 10k/NT\$1 million)				2.79	2.08	3.4
Non-renewable electricity consumption (MWh)				712,562	728,787	736,419
Renewable electricity consumption (MWh)				362	2,600	7,880
Electricity consumption per unit revenue (MWh/NT\$1 million)				11.7	8.5	13.1
Electricity consumption per unit production capacity (MWh/thousand die)				0.64	0.65	0.68
Natural gas consumption (cubic meter)				4,494,478	4,682,857	4,780,740

Primary indicators

Chapter of the Sustainability Report
on Nanya indicators

GRI Standard No.

2020

2021

2022

A Practitioner of Green Technology		Green	302-1	4.0	4.2	4.4
Primary indicators	Chapter of the Sustainability Report on Nanya indicators			73.7	54.7	83.9
Natural gas consumption per unit production capacity (m ³ /thousand die)						
Natural gas consumption per unit revenue (cubic meter/NT\$1 million)						
Cumulative electricity savings from energy conservation measures implemented since 2017 (MWh/year)			302-4	51,265	58,850	63,228
Number of days production was suspended due to climate disasters			201-2	0	0	0
NOx emissions (metric tons)				10.05	10.34	10.50
SOx emissions (metric tons)				1.92	1.66	1.66
VOCs emissions (metric tons)				15.85	15.68	17.31
Reduction in air pollution emissions per unit product (%) (the baseline year is 2017)				-45.6	-46.3	-38.8
VOCs reduction rate (%)				≥ 90%	≥ 90%	≥ 90%
Abnormalities in air pollution prevention equipment (cases)			*	0	0	0
Number of companies (plants) that obtained ISO 14001 certification				1	1	1
Percentage of plants with ISO 14001 certification (%)			403-1	100	100	100
Water consumption (thousand tons)				3,369	3,456	3,388
Process water recycling rate (%)				87.3	90.8	92.9
Water consumption per unit production capacity (Metric tons/thousand die)				3.01	3.08	3.11
Water consumption per unit revenue (Metric tons/NT\$1 million)				55.2	40.4	59.5
Reclaimed/Reused Water Volume (Thousand tons)				5,132	5,488	5,700
Ultra-pure water consumption (Thousand tons)				3,416	3,517	3,578
Ultra-pure water consumption per unit production capacity (metric tons/thousand die)				3.05	3.13	3.29
Ultra-pure water consumption per unit revenue (Metric tons/NT\$1 million)				56.0	41.1	62.8
Diesel consumption (liter)			302-1	17,720	26,280	30,500
VOCs emissions per unit wafer area (kg/m ²)				0.30	0.26	0.27
VOC emissions per unit production capacity (g/thousand die)				17.6	14.2	14.0
VOC emissions per unit revenue (g/NT\$1 million)				365.5	259.8	183
Wastewater discharge volume (Thousand tons)			303-4	2,705	2,718	2,695

Primary indicators

Chapter of the Sustainability Report
on Nanya indicators

GRI Standard No.

2020

2021

2022

A Practitioner of Green Technology		Green	303-4	2.42	2.42	2.48		
Wastewater discharge volume per unit production capacity (metric tons/thousand die)				44.3	31.8	47.3		
Waste water discharge volume per unit revenue (Metric tons/NT\$1 million)				822,139	873,414	1,221,153		
Environmental accounting expenses (NT\$ thousand)			23413.1	24585.7	23,981.3			
Total volume of waste (metric ton)			6090.0	7112.7	6383.2			
General waste (Non-hazardous waste) (metric ton)			17323.1	17473.0	17,598.1			
Hazardous waste (metric ton)			95.0	94.9	92.1			
Waste recycling rate (%)			388.3	416.3	406.3			
Waste generated per unit wafer area (kg/wafer area m ²)			20.9	21.9	22.0			
Waste generated per unit capacity (kg/thousand die)			383.8	280.1	431.7			
Waste generated per unit revenue (kg/NT\$1 million)								

An Attractive Employer for Professional Talent

Talent	2-7	3542	3554	3685
		2596	2572	2670
		973	982	1015
		15	15	16
	404-1	1.05%	1.05%	1.01%
		134,829	171,178	163,746
		2,128	2,603	3,091
		111,235	147,861	157,720
		31.4	41.6	42.8
		10,353,266	10,623,689	9,604,391
	2-7	2,923	2,989	2,606
	*	12.8	16.7	10.0
	404-1	894%	1196%	796%
	2-7	27.47%	27.60%	27.54%

Primary indicators

Chapter of the Sustainability Report
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An Attractive Employer for Professional Talent

Percentage of entry-level managers that are female (%)
Percentage of mid-level managers that are female (%)
Percentage of senior managers that are female (%)
Percentage of managers in departments related to production and revenue that are female (%)
Percentage of STEM-related positions held by female employees (%)
Absence rate (%)
Turnover rate (%)
Turnover rate of new employees within 1 year (%)
Voluntary turnover rate (%)
Number of union members
Percentage of employees with union membership (%)
Female-to-male total salary ratio of managerial roles
Female-to-male remuneration ratio of managerial roles
Female-to-male total salary ratio of non-managerial roles
Female-to-male total remuneration ratio of non-managerial roles
Percentage of job openings filled by internal employees (%)
Unpaid parental leave reinstatement rate (%)
Unpaid parental leave retention rate (%)
Percentage of employees with average approval of 7 points and above (10-point scale)
Safety - Disabling Injury Frequency Rate
Safety - Disabling Injury Severity Rate
Frequency-severity indicator
Deaths due to occupational injury – Employees
Deaths due to occupational injury – Contractors
RBA Self-Assessment Questionnaire (SAQ) score
Occurrence per thousand people
Occupational diseases caused by chemical exposures

Talent

405-1	9.20%	9.38%	9.59%
	16.30%	15.63%	20.00%
	4.35%	4.35%	4.29%
	37.11%	36.89%	37.66%
	15.54%	15.92%	16.34%
401-1	0.35	0.33	0.23
	5.01%	7.26%	9.05%
	7.47%	9.40%	14.99%
	4.74%	7.09%	8.80%
407-1	82	83	86
	2.39%	2.41%	2.38%
405-2	93.72%	94.55%	95.68%
	94.91%	94.55%	95.28%
	110.34%	108.71%	108.42%
	113.49%	111.47%	111.43%
401-3	72.10%	84.50%	85.90%
	80.00%	66.67%	82.35%
	83.33%	87.50%	80.00%
	72%	72%	76.2%
	0.14	0(employees);0.16	0
403-9	6	0(employees);1	0
	0.03	0(employees);0.01	0
	1	0	0
	0	1	0
205-2	92.9	92.6	93.3
403-9	0.021	0.021	0
403-10	0	0	0

Primary indicators

Chapter of the Sustainability Report
on Nanya indicators

GRI Standard No.

2020

2021

2022



An Active Participant in Giving Back to Society

Breakdown of investment amount by type of charity: Charities (%)	Common Good	*	3.17%	8.09%	5.44%
Breakdown of investment amount by type of charity: Community investment (%)		*	3.96%	2.49%	9.97%
Breakdown of investment amount by type of charity: Commercial initiatives (%)		*	92.87%	89.41%	84.59%
Breakdown of resources invested in charity: Cash contributions (%)		*	93.35%	89.60%	83.54%
Breakdown of resources invested in charity: Material contributions (%)		*	2.10%	2.12%	7.72%
Breakdown of resources invested in charity: Employee volunteers (%)		*	0.37%	0.44%	0.50%
Breakdown of resources invested in charity: Management costs (%)		*	4.19%	7.84%	8.24%

9-3 List of Significant Suppliers

- ASAHI KASEI EMD TAIWAN CORPORATION HSINCHU BRANCH
- CMC MATERIALS SINGAPORE PTE LTD.
- NITTA DUPONT TRADING COMPANY
- NORTHERNWEST CORPORATION
- ROHM AND HAAS ELECTRONIC MATERIALS A
- SILTRONIC SINGAPORE PTE. LTD.
- SK SILTRON CO., LTD.
- TOKYO OHKA KOGYO CO., LTD.
- ULVAC, INC.
- Ever Team International Corp.
- Air Products and Chemicals, Inc.
- Praxair Chemax Semiconductor Materials Co., Ltd.
- Toppan Chunghwa Electronics Co., Ltd.
- Formosa Biomedical Technology Corp.
- Formosa Sumco Technology Corporation
- INNOS TAIWAN INTERNATIONAL TRADING CO., LTD.
- TAIYO NIPPON SANZO ENGINEERING TAIWAN, INC.
- NIPPON SANZO TAIWAN, INC.
- Nikko Metals Taiwan Co., Ltd.
- TOSOH SMD TAIWAN LTD.
- TAIWAN MAXWAVE CO., LTD.
- SHIN-ETSU HANDOTAI TAIWAN CO., LTD.
- Showa Denko International (Taiwan) Co., Ltd.
- PHOTRONICS DNP MASK CORPORATION
- SUMITRONICS TAIWAN CO., LTD.
- HONEYWELL ELECTRONIC MATERIALS TAIWAN CO., LTD.
- FUJIFILM Electronic Materials Taiwan Co., Ltd.
- DDP Specialty Products Taiwan Co., Ltd.
- TAIWAN KANTO DENKA CO., LTD.
- TAIWAN POLYGAS TECHNOLOGY CO., LTD.
- KEMITEK INDUSTRIAL CORP.
- MARKETECH INTERNATIONAL CORP.
- Air Liquide Far Eastern Ltd.
- Air Liquide Far Eastern Ltd. Taichung Branch
- Nan Ya Plastics Corp. Mailiao Branch
- Showa Specialty Gas (Taiwan) Co., Ltd.
- ENTEGRIS ASIA LLC TAIWAN BRANCH (U.S.A.)
- PRAXAIR SURFACE TECHNOLOGIES, INC., TAIWAN BRANCH (USA)
- VERSUM MATERIALS TECHNOLOGY, LLC TAIWAN BRANCH (U.S.A.)
- ROHM AND HAAS ELECTRONIC MATERIALS CMP ASIA INC., TAIWAN BRANCH (U.S.A.)
- Federal Machinery Co., Ltd.
- TES Solutions Co., Ltd.
- GIGA GAS & ELECTRONIC MATERIALS COMPANY
- TOPCO SCIENTIFIC CO., LTD.
- CMC Materials B.V., Taiwan Branch
- Botai Advanced Materials Co., Ltd.
- WAH LEE INDUSTRIAL CORP.
- Versum Materials Taiwan Co., Ltd.
- Versum Materials Taiwan Co., Ltd. Taichung Branch
- Merck Performance Materials Ltd.
- GlobalWafers Co., Ltd.
- GlobalWafers Co., Ltd. Taisil Branch
- ASIA UNION ELECTRONIC CHEMICAL CORP.
- KANTO-PPC Inc.

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GRI Standards Index

Usage Statement

Nanya Technology Corporation has reported contents for 2022/01/01-2022/12/31 according to GRI Standards 2021.

GRI 1 Version

GRI 1: Foundation 2021

Applicable GRI Standards

N/A

Information Disclosed

Corresponding Chapter

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GRI 2: General Disclosures 2021

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2-5	External assurance	Appendix - Assurance Statements	181
2-6	Organizational activities, value chain, and relationship with other entities in the value chain	<ul style="list-style-type: none"> • About Nanya • Sustainable Supply Chain Management Nanya Technology Corporation'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 415 Tier 1 suppliers in 2022, mainly distributed in Asia (65.7%), America (23.1%), and Europe (6.7%). • Please refer to the appendix for the list of significant suppliers 	18 116
2-7	Employee information	<ul style="list-style-type: none"> • Attracting and Retaining Talent Employee Diversity: As of 2022, the Company has a total of 3,685 formal employees in Taiwan and in overseas subsidiaries (including 89 interns). There were 3,579 employees in Taiwan, accounting for 97.12% of all employees, and the 106 formal employees in overseas subsidiaries accounted for 2.88%. 	52
2-8	Information on other workers	Attracting and Retaining Talent	52
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GRI 2: General Disclosures 2021

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2-13	Appointments for managing impact	<ul style="list-style-type: none"> • Sustainable Governance and Organization • Corporate Governance 	25 141
2-14	Role of the highest governance unit in sustainability reporting	Sustainable Governance and Organization	25 141
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2-21	Percentage of Annual Remuneration	<ul style="list-style-type: none"> • Corporate Governance • Compensation of Senior Executives 	143
2-22	Statement on the Sustainable Development Strategy	President's Message	3
2-23	Policy commitments	<ul style="list-style-type: none"> • Corporate Governance • A Happy and Safe Workplace 	141 75

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General Disclosures
GRI 2: General Disclosures 2021

2-24	Internalize policy commitments	<ul style="list-style-type: none"> Innovation – Strategy and Performance of Material Topics Talent – Strategy and Performance of Material Topics Green – Strategy and Performance of Material Topics Responsible Procurement – Strategy and Performance of Material Topics Common Good – Strategy and Performance of Material Topics Integrity and Transparency – Strategy and Performance of Material Topics 	41	
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			91	
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			140	
2-25	Procedures for remedying negative impacts	<ul style="list-style-type: none"> Innovation – Strategy and Performance of Material Topics Talent – Strategy and Performance of Material Topics Green – Strategy and Performance of Material Topics Responsible Procurement – Strategy and Performance of Material Topics Common Good – Strategy and Performance of Material Topics Integrity and Transparency – Strategy and Performance of Material Topics 	41	
			51	
			91	
			115	
			128	
2-26	Mechanisms for seeking recommendations and matters of concern	<ul style="list-style-type: none"> Corporate Governance A Happy and Safe Workplace 	141	
			75	
2-27	Regulatory compliance	None had occurred in 2022	-	
2-28	Membership of associations	About Nanya	19	
2-29	Approach to stakeholder engagement	Materiality Analysis	27	
2-30	Collective bargaining agreements	<ul style="list-style-type: none"> A Happy and Safe Workplace The employees of Nanya have established a labor union since April 2012. Although the Company and the labor union have not signed a group agreement, we still actively maintain communication and harmony. Various communication channels allow the labor union to fully perform its functions and express opinions. This improves the harmony between labor and management and benefits for employees. 	87	

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Ethical Corporate Management
GRI 3: Material topics in 2021

3-1	Procedures for deciding on material topics	Materiality Analysis	27
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3-3	Management of material topics	Materiality Analysis	27

GRI 205 Anti-corruption

205-1	Operations assessed for risks related to corruption	The Company annually conducts assessments on operations in Taiwan and overseas based on the compliance status of the internal regulations on ethical corporate management and internal audit systems. No risk of corruption was found.	155
205-2	Communication and training about anti-corruption policies and procedures	<ul style="list-style-type: none"> Business Integrity <ul style="list-style-type: none"> 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% 	154
205-3	Confirmed incidents of corruption and actions taken	<ul style="list-style-type: none"> Business Integrity <ul style="list-style-type: none"> There were no corruption cases in 2022 	154

GRI 206 Anti-competitive Behavior

206-1	Legal actions for anti-competitive behavior	None had occurred in 2022	154
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**R&D and Innovation****GRI 3: Material topics in 2021**

3-3	Management of material topics	Materiality Analysis	27
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specific topics

*	*	<ul style="list-style-type: none"> R&D and Innovation <ul style="list-style-type: none"> R&D expenses accounted for 13.8% of revenue, up 5% compared to 2021; R&D personnel accounted for 27.1% of employees, up 0.3% compared to 2021. A total of 90 AI applications were developed as of 2022 and annual benefits reached NT\$360 million. 	43
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Customer Service

GRI 3: Material topics in 2021

3-3	Management of material topics	Materiality Analysis	27
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GRI 418 Customer privacy

418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	<ul style="list-style-type: none"> Customer Service <p>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 2022.</p>	159
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Risk Management

RI 3: Material topics in 2021

3-3	Management of material topics	Materiality Analysis	27
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Specific topics

-	-	<ul style="list-style-type: none"> Risk Management <p>Nanya Technology Corporation established the functional committee – Sustainable Development Committee under the Board of Directors in 2022, and merged the Risk Management Committee established by the Board of Directors in 2020 into the Sustainable Development Committee.</p>
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Supply Chain Sustainability Management

GRI 3: Material topics in 2021

3-3	Management of material topics	Materiality Analysis	27
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GRI 204 Procurement Practices

204-1	Percentage of purchases from local supply chains	<ul style="list-style-type: none"> Sustainable Supply Chain Management <p>Local materials accounted for 30% of the procurement amount in 2022</p>	117
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GRI 308 Supply Chain Environmental Assessment

308-1	New suppliers that were screened using environmental criteria	<ul style="list-style-type: none"> Sustainable Supply Chain Management <p>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>	119
308-2	Negative environmental impacts in the supply chain and actions taken	<ul style="list-style-type: none"> Sustainable Supply Chain Management <p>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>	116

GRI 414 Supply Chain Social Assessment

414-1	New suppliers that were screened using social criteria	<ul style="list-style-type: none"> Sustainable Supply Chain Management <p>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>	119
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Information Disclosed	Corresponding Chapter	Page	Information Disclosed	Corresponding Chapter	Page
Climate Change					
GRI 3: Material topics in 2021					
3-3 Management of material topics	Materiality Analysis	27	3-3 Management of material topics	Materiality Analysis	27
GRI 305 Emissions					
305-1 Direct (Scope 1) GHG emissions	<ul style="list-style-type: none"> Greenhouse Gas Inventory Scope 1 emissions was 59,788 metric tons CO₂e in 2022 	94	302-1 Energy consumption within the organization	<ul style="list-style-type: none"> Energy Management - Energy consumption mainly included purchased electricity (accounted for 89.5% of the Company's energy consumption), natural gas (accounted for 6% of the Company's energy consumption), and steam (accounted for 4.5% of the Company's energy consumption). The Company began purchasing renewable energy in 2020, and purchased renewable energy (electricity) accounted for 0.95% of the Company's energy consumption. 	94
305-2 Energy indirect (Scope 2) GHG emissions	<ul style="list-style-type: none"> Greenhouse Gas Inventory Scope 2 emissions was 381,166 metric tons CO₂e in 2022 	94	302-2 Energy consumption outside of the organization	<ul style="list-style-type: none"> Information unavailable / incomplete 	
305-3 Other indirect (Scope 3) GHG emissions	Greenhouse Gas Inventory Scope 3 emissions was metric 940,525 tons CO ₂ e in 2022	95	302-3 Energy intensity	<ul style="list-style-type: none"> Energy Management Electricity consumption per unit capacity was 0.68 MWh/NT\$1 million in 2022 (an increase of 5% compared to 2021), and natural gas consumption per unit capacity was 4.4 m³/NT\$1 million (an increase of 5.3% compared to 2021). 	97
305-4 GHG emissions intensity	405 kg CO ₂ e/thousand die 7,743 kg-CO ₂ e / NT\$1 million	93	302-4 Reduction of energy consumption	<ul style="list-style-type: none"> Energy Management A total of 25 energy conservation plans were completed in 2022, and saved an estimated 4,378 MWh. 	99
305-5 Reduction of GHG emissions	<ul style="list-style-type: none"> Greenhouse Gas Reduction In order to reduce the emissions of F-gases into the air, we formulated the acceptance criteria of F-gases reduction rate processed by Local Scrubber. The gas treatment efficiency of C₄F₈ should reach above 90%, and the reduction rate of processing C₃F₈, C₄F₆, C₄F₈, CHF₃, CH₂F₂, and SF₆ should reach more than 95% while the reduction rate of NF₃ should be over 99%. 	96	302-5 Reductions in energy requirements of products and services	<p>Innovation – Green Products</p> <p>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.</p>	97
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	<ul style="list-style-type: none"> Air Pollution Prevention -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%; Reduction rate of overall volatile organic gas emissions is maintained above 90% NOx emissions was 10.5 metric tons and SOx emissions was 1.66 metric tons in 2022 	110			

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Energy Management

GRI 3: Material topics in 2021

3-3	Management of material topics	Materiality Analysis	27
GRI 302 Energy			
302-1	Energy consumption within the organization	<ul style="list-style-type: none"> Energy Management <ul style="list-style-type: none"> - Energy consumption mainly included purchased electricity (accounted for 89.5% of the Company's energy consumption), natural gas (accounted for 6% of the Company's energy consumption), and steam (accounted for 4.5% of the Company's energy consumption). - The Company began purchasing renewable energy in 2020, and purchased renewable energy (electricity) accounted for 0.95% of the Company's energy consumption. 	97
302-3	Energy intensity	<ul style="list-style-type: none"> Energy Management <p>Electricity consumption per unit capacity was 0.68 MWh/NT\$1 million in 2022 (an increase of 5% compared to 2021), and natural gas consumption per unit capacity was 4.4 m³/NT\$1 million (an increase of 5.3% compared to 2021).</p> 	97
302-4	Reduction of energy consumption	<ul style="list-style-type: none"> Energy Management <p>A total of 25 energy conservation plans were completed in 2022, and saved an estimated 4,378 MWh.</p> 	97
302-5	302-5	<ul style="list-style-type: none"> Innovation – Green Products <p>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.</p> 	97

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Water Management

GRI 3: Material topics in 2021

3-3	Management of material topics	Materiality Analysis	27
GRI 303 Water (2018)			
303-1	Interactions with water as a shared resource	<ul style="list-style-type: none"> Water Resource Management <p>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.</p> 	100
303-2	Management of water discharge-related impacts	<ul style="list-style-type: none"> Water Resource Management <p>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.</p> 	100
303-3	Water withdrawal	<ul style="list-style-type: none"> Water Resource Management <p>Total water withdrawal was 3,388 thousand m³ in 2022, in which Taoyuan Canal is the main source of water, accounting for approximately 96.6% (3,274 thousand m³), followed by well water at approximately 1.8% (60 thousand m³), tap water at approximately 0.8% (26 thousand m³), and rainwater at approximately 0.8% (28 thousand m³).</p> 	100
303-4	Water discharge	<ul style="list-style-type: none"> Water Resource Management <p>Total water discharge was 2,695 million liters in 2022, down 0.8% compared to 2021</p> 	100
303-5	Water consumption	<ul style="list-style-type: none"> Water Resource Management <p>Total water consumption was 693 million liters in 2022</p> 	100

Information Disclosed	Corresponding Chapter	Page	Information Disclosed	Corresponding Chapter	Page
	Waste Management			Employee Development	
GRI 3: Material topics in 2021			GRI 3: Material topics in 2021		
3-3 Management of material topics	Materiality Analysis	27	3-3 Management of material topics	Materiality Analysis	27
GRI 306 Waste (2020)			GRI 404 Training and education		
306-1 Waste generation and significant impacts related to waste	<ul style="list-style-type: none"> • 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. 	113	404-1 Average hours of training per year per employee	<ul style="list-style-type: none"> • Talent Cultivation Training or learning and development activities organized by Nanya Technology Corporation provided over 157,000 hours of training in 2022, and employees on average received 30 hours of training. 	63
306-2 Management of significant impacts related to waste	<ul style="list-style-type: none"> • Recycling 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. Recycled wastes in the plant, for example, copper sulfate waste liquid was directly converted to copper cakes for recycling. Acidic wastes were outsourced for recycling, such as sulfuric acid and phosphoric acid. Dummy wafers were recycled for 8-11 times. 	113	404-2 Programs for upgrading employee skills and transition assistance program	<ul style="list-style-type: none"> • Talent Cultivation 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 735 employees in on-the-job degree programs. 	70
306-3 Waste generation	<ul style="list-style-type: none"> • Waste Management total waste was 23,981 metric tons in 2022, including 6,388 metric tons of general waste and 17,594 metric tons of hazardous waste 	104	404-3 Percentage of employees receiving regular performance and career development reviews	<ul style="list-style-type: none"> • Talent Cultivation The ratio of employees subject to multi-aspect performance evaluations (180-degree evaluation, 360-degree evaluation) was 100% in 2022 	71
306-4 Waste disposal and transfer	<ul style="list-style-type: none"> • Waste Management In 2022, 18,182 metric tons of waste was disposed of and transferred, accounting for 75.8% of total waste generated, in which 1 metric ton was "prepared for reuse," 18,181 metric tons was "reused," and 1 metric ton was "other recycling." 	112			
306-5 Direct disposal of waste	<ul style="list-style-type: none"> • Waste Management In 2022, 5,799 metric tons of waste generated by Nanya was directly disposed, in which 3,907 metric tons was incinerated and used as energy, accounting for 16.3% of total waste generated; 1,052 metric tons of waste was directly incinerated, accounting for 4.4% of total waste generated; none of the waste was directly buried, but 105 metric tons of waste was solidified and then buried, accounting for 0.4% of total waste generated; 736 metric tons of waste was disposed of using other methods (including physical treatment and recycling, purification and reuse), accounting for 3.1% of total waste generated. 	111			
			Occupational Health and Safety		
GRI 3: Material topics in 2021			GRI 3: Material topics in 2021		
3-3 Management of material topics	Materiality Analysis	27	3-3 Management of material topics	Materiality Analysis	27
GRI 403 Occupational Health and Safety (2018)			GRI 403 Occupational Health and Safety (2018)		
			403-1 Occupational safety and health management system	<ul style="list-style-type: none"> • Occupational Health and Safety 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 39.7% of the committee members. They jointly review the performance of safety and health work and projects. 	88
			403-2 Hazard identification, risk assessment, and incident investigation	<ul style="list-style-type: none"> • Occupational Health and Safety -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. - There were no major, severe, and disabling occupational accidents in 2022, but 28 false alarms were still analyzed. 	89

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Occupational Health and Safety

GRI 403 Occupational Health and Safety (2018)

	<ul style="list-style-type: none"> Occupational Health and Safety 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) 	89	
403-3	Occupational health services		
403-4	Worker participation, consultation, and communication on occupational health and safety	<ul style="list-style-type: none"> 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 	88
403-5	Worker training on occupational health and safety	<ul style="list-style-type: none"> Occupational Health and Safety A total of 254 hours of safety and health education and training courses required by law were completed in 2022 and trained 4,362 participants; 54 emergency response drills were conducted to enhance employee training and response abilities. 	88
403-6	Promotion of worker health	<ul style="list-style-type: none"> 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). 	84
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	<ul style="list-style-type: none"> Occupational Health and Safety Continue to propose improvement plans for medium and high risks of clean room operations; invested NT\$2.961 million in 2022 	88
403-8	Workers covered by an occupational health safety management system	<ul style="list-style-type: none"> Occupational Health and Safety Covers all workers in plant areas (including: employees 87% and other non-employee workers 14.9%) 	88
403-9	Work-related injuries	<ul style="list-style-type: none"> Occupational Health and Safety There were no occupational injuries in 2022. 	89
403-10	Work-related ill health	<ul style="list-style-type: none"> Occupational Health and Safety There were no occupational disease cases in 2022. 	89

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Talent Retention and Employee Care

GRI 3: Material topics in 2021

3-3	Management of material topics	Materiality Analysis	27
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GRI 202 Market Presence (Material Topic)

202-1	Ratios of standard entry level wage by gender compared to local minimum wage	<ul style="list-style-type: none"> Talent retention In 2022, the average salary of non-managerial full-time employees at Nanya Technology Corporation was NT\$1,581,000, down 8.88% compared to 2021. The median salary of non-managerial full-time employees was NT\$1,350,000 	59
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GRI 401 Employment

401-1	New employee hires and employee turnover	<ul style="list-style-type: none"> Employee Diversity -There were 412 new employees in 2022, new employees accounted for approximately 11.18% of all employees - The total turnover rate was 9.05% and voluntary turnover rate was 8.8% in 2022 	56
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401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	<ul style="list-style-type: none"> Talent retention - 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 2022. This allows employees to work in a happy and safe environment. - The Company provides more frequent employee health examinations than required by law 	57
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401-3 Parental leave

	<ul style="list-style-type: none"> Employee Care In 2022, a total of 327 employees were entitled to take unpaid parental leave, and a total of 32 people had actually applied; reinstatement rate was 82.35% and retention rate was 80%. 	80
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Community Involvement

GRI 3: Material topics in 2021

3-3	Management of material topics	Materiality Analysis	27
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GRI 413 Local Communities (Material Topic)

413-1	Operations with local community engagement, impact assessments, and development programs	<ul style="list-style-type: none"> Community Involvement 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 7 social welfare foundations, engaging in 10,307 interactions with communities. 	129
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Human Rights

GRI 3: Material topics in 2021

3-3	Management of material topics	Materiality Analysis	27
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GRI 406 Non-discrimination (Material Topic)

406-1	Incidents of discrimination and corrective actions taken	<ul style="list-style-type: none"> Employee Human Rights Protection <ul style="list-style-type: none"> -All employees signed the labor and ethics policy, and took the courses "2022 Policy and Code of Conduct Training," "2022 Unsafe Workplace Behavior and Prevention Training," and "2022 Personal Data Protection Promotion"; all employees were required to take the courses. 100% of employees received training, and received a total of 10,809 hours of training. -Established 2025 long-term human rights goals -There were no incidents of discrimination in 2022 	82
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GRI 409 Forced or Compulsory Labor (Material Topic)

409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	<ul style="list-style-type: none"> Employee Human Rights Protection <ul style="list-style-type: none"> Ensure there is no compulsory labor through RBA internal audits Sustainable Supply Chain Management <ul style="list-style-type: none"> 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. 	83
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GRI 200: Economic Series

GRI 201 Economic Performance

201-1	Direct economic value generated and distributed	Business strategies and performance (Ch1) Attracting and Retaining Talent Appendix – Nanya Sustainability Performance	20 52 163
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201-3	Defined benefit plan obligations and other retirement plans	Talent retention Corporate Governance	57 141
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GRI 203 Indirect Economic Impacts

203-1	Infrastructure investments and services supported	Social influence	129
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203-2	Significant indirect economic impacts	<ul style="list-style-type: none"> Community Involvement <ul style="list-style-type: none"> -Engaged in industry-academia collaboration with 5 schools -Sponsored 4 campus events -Jointly implemented internship programs with 12 schools -Organized 14 company visits -Organized 36 seminars -Donated to 7 social welfare foundations 	132
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GRI 300: Environmental Series

GRI 301 Materials

301-3	Reclaimed products and their packaging materials	Green Product Development
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GRI 400: Social Series

GRI 402 Labor/Management Relations

402-1	Minimum notice periods regarding operational changes
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- Employee Diversity
 - 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.

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GRI 405 Diversity and Equal Opportunity

405-1	Diversity of governance bodies and employees
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- Corporate Governance
 - Corporate Governance – 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.
- Employee Diversity
 - Nanya had a total of 3,685 formal employees (including 89 interns) in Taiwan and overseas subsidiaries in 2022, and also hired employees from 16 different countries and employees with disabilities, creating a workplace with diversity.

141
52

405-2	Ratio of basic salary and remuneration of women to men
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- Talent retention
 - Talent retention
 - Female-to-male total salary + remuneration ratio of managerial roles was 95.28%; Female-to-male total salary + remuneration ratio of non-managerial roles was 111.43%

57

GRI 415 Public Policy

415-1	Political donations
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- Business Integrity
 - 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

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GRI 417 Marketing and Labeling

417-2	Incidents of non-compliance concerning product and service information and labeling
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None had occurred in 2022

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417-3	Incidents of non-compliance concerning marketing communications
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None had occurred in 2022

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9-5 SASB Index

CODE	Properties	Accounting Metric	Reference Chapter/Page
Greenhouse Gas Emissions			
TC-SC-110a.1	Quantitative	1.Scope 1 emissions 2.PFCs emissions	Greenhouse Gas Inventory / 94
TC-SC-110a.2	Qualitative Description	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	Greenhouse Gas Inventory / 94
Energy Management in Manufacturing			
TC-SC-130a.1	Quantitative	1.Total energy consumed 2.Percentage of grid electricity 3.Percentage of renewable	Energy Management / 97
Water Management			
TC-SC-140a.1	Quantitative	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 / 100
Waste Management			
TC-SC-150a.1	Quantitative	Amount of hazardous waste from manufacturing, percentage recycled	Recycling Outside Plant / 104
Employee Health & Safety			
TC-SC-320a.1	Qualitative Description	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	Occupational Health and Safety / 88
TC-SC-320a.2	Quantitative	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	

CODE	Properties	Accounting Metric	Reference Chapter/Page
Recruiting & Managing a Global & Skilled Workforce			
TC-SC-330a.1	Quantitative	1.Percentage of foreign employees 2.Percentage of employees located overseas	Employee Diversity / 52
Product Lifecycle Management			
TC-SC-410a.1	Quantitative	Percentage of products by revenue that contain IEC 62474 declarable substances	Hazardous Substance Free Product Management / 49
Materials Sourcing			
TC-SC-440a.1	Qualitative Description	Description of the management of risks associated with the use of critical materials	Responsible Mineral Sourcing Management / 124
Intellectual Property Protection & Competitive Behavior			
TC-SC-520a.1	Quantitative	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	Status and Strategy of Intellectual Property / 44

CODE	UNIT OF MEASURE	Metric Content	Chapter/Page
ACTIVITY METRIC			
TC-SC-000.A	Quantitative	Total production from own manufacturing facilities and production service contracts	Product and business performance / 20
TC-SC-000.B	Quantitative	Percentage of production from owned facilities	

9-6



Contents Corresponding to the UN Global Compact

Principle	Contents or Overview of Report	Page	Principle	Contents or Overview of Report	Page
Human Rights	Businesses should support and respect the protection of internationally proclaimed human rights Please refer to "Talent: Employee Human Rights Protection" in this report for details.	p82	Businesses should support a precautionary approach to environmental challenges	Nanya implemented the TCFD in 2018 and became a supporter in 2021. We actively establish and strengthen mechanisms in response to climate change and published our first TCFD report in 2022, in hopes of lowering the impact of climate risks. Please refer to "Green: Climate Change Adaptation" in this report for details.	p93
	Businesses should make sure that they are not complicit in human rights abuses. Please refer to "Responsible Procurement: Sustainable Supply Chain Management Process, Responsible Mineral Sourcing Management" of this report for details.	p119 p124		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.	p46
Labour	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining Please refer to "Talent: Employee Human Rights Protection" in this report for details.	p82	Businesses should encourage the development and diffusion of environmentally friendly technologies	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 Improve the Sustainability of supply chain" in this report for details.	p97 p122
	Businesses should uphold the elimination of all forms of forced and compulsory labour Please refer to "Talent: Employee Human Rights Protection" in this report for details.	p82		All Nanya employees must comply with the Business and Ethical Code of Conduct, and also complete anti-corruption education and training. Please refer to "Integrity and Transparency: Anti-corruption" of this report for details.	p155
	Businesses should prohibit all forms of child labor, and also explicitly prohibits child labor in its human rights policy and Business and Ethical Code of Conduct. Please refer to "Talent: Employee Human Rights Protection" in this report for details.	p82			
	Businesses should eliminate discrimination in employment and occupation, and explicitly states that it has zero tolerance for discrimination in its human rights, Business and Ethical Code of Conduct, and Written Statement on Prohibition of Workplace Violence, establishing a number of grievance and whistleblowing channels. Please refer to "Talent: Employee Human Rights Protection, Employee Protection and Communication" in this report for details.	p82			

9-7



Table of Sustainability Indicators for Disclosure

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*106 GJ 2. Percentage of purchased electricity: 89.5% 3. Renewable energy use rate: 0.95%	Green / Energy and Resource Management / Energy Management
2.Total water withdrawal and total water consumption	Quantified	1,000 m ³	1. Total water withdrawal: 3388 m ³ 2. Total water consumption: 693 m ³	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: 17598 t 2. Percentage of hazardous waste recycled: 97.4%	Green / Environmental Pollution Prevention / Waste Management
4.Describe the type of occupational accident, number of people, and percentage	Quantified	Percentage (%), quantity	All 0	Talent / Happy and Safe Workplace/ Occupational Health and Safety
5.Disclosure of Product Lifecycle Management: Includes the weight of scrapped products and electronic waste and the percentage recycled	Quantified	Metric tons (t), percentage (%)	1. Weight: 4.2ton 2. Percentage recycled: 100%	Green / Environmental Pollution Prevention / Waste Management
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: 1,216,594 thousand pieces Low power products: 53,107 thousand pieces	Business Strategies and Performance / Annual Output and Markets

9-8



Risks and Opportunities of the Company Brought by Climate Change and Response Measures Taken by the Company

Item	Corresponding chapter
1.Describe supervision and governance of climate-related risks and opportunities by the board of directors and management.	Chapter 5 Green – Climate Change Management Chapter 8 Integrity and Transparency – Risk 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 – Climate Change Management TCFD Report
3.Describe the impact of extreme weather events and transition actions on the Company's financial position.	Chapter 5 Green – Climate Change Management TCFD Report
4.Describe how the identification, assessment, and management process of climate risks is integrated in the overall risk management system.	Chapter 5 Green – Climate Change Management Chapter 8 Integrity and Transparency – Risk Management
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 – Climate Change Management
6.If there is a transition plan in place in response to climate-related risks, describe the contents of the plan and the indicators and goals used to identify and manage physical risks and transition risks.	Chapter 5 Green – Climate Change Management
7.If internal carbon pricing is used as a planning tool, describe the basis for pricing.	None
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
9.GHG inventory and assurance (please fill in the "GHG inventory and assurance" form below)	

9-9 2022 GHG Inventory and Assurance

Basic information on the Company

- Company with capital of NT\$10 billion and above, steel industry, cement industry
- Company with capital of NT\$5 billion and above but less than NT\$10 billion
- Company with capital less than NT\$5 billion

Pursuant to the sustainable development roadmap of TWSE/TPEX-listed companies, at least the following shall be disclosed

- Individual inventory of the parent company
- Inventory of subsidiaries in the consolidated financial statements
- Individual assurance for the parent company
- Assurance for subsidiaries in the consolidated financial statements

Gross emissions (Metric ton CO ₂ e)	Intensity (ton-CO ₂ e / NT\$1 thousand)	Description of assurance
Scope 1		
Nanya	59,788	0.00105
Subsidiary ¹	*	ISO14064-1:
Subsidiary ²	*	SGS
Total	59,788	0.00105
Scope 2		
Nanya	381,166	0.00669
Subsidiary ¹	*	
Subsidiary ²	*	
Total	381,166	0.00669
Scope 3 (may be voluntarily disclosed)	940,525	ISO14064-1: SGS

*Subsidiaries are mainly sales bases and have no production activities. Greenhouse gas emissions have no significant impact on the total amount (<1%). The current inventory has been completed, and the third-party verification has not yet been conducted due to contract restrictions. It is expected to be completed and disclosed before 2025.

* The intensity is calculated based on the company's revenue of NT\$56.95 billion in 2022.

The emissions of 7 items in Scope 3 GHG emissions passed verification is 740,675.3 metric tons CO₂e in 2022.

9-10 Assurance Statement



Independent Assurance Statement

NANYA TECHNOLOGY CORPORATION's 2022 SUSTAINABILITY REPORT

AFNOR GROUP was established in 1926. We are the National Standardization Body of France, a permanent council member in ISO and one of the leading certification bodies in the world. This verification work was carried out by AFNOR ASIA LTD., a subsidiary of AFNOR GROUP. All the members of the verification team have professional backgrounds and have accepted AA1000 AS, AFAQ 26000, ISO 9001, ISO 14001, ISO 14064, ISO 45001, ISO 50001, and other sustainability-related international standard trainings. All assigned verifiers have been approved as the lead auditors or verifiers. AFNOR Group hereby provides a summary of NANYA TECHNOLOGY CORPORATION's Sustainability Report of 2022 (hereinafter referred to as "the Report") but was not involved in any way in its preparation.

AFNOR Group and NANYA TECHNOLOGY CORPORATION (hereinafter referred to as "NANYA TECHNOLOGY") are independent entities. AFNOR ASIA LTD., was commissioned by NANYA TECHNOLOGY to conduct the assessment and assure the Sustainability Report of 2022 was in accordance with AA1000 Assurance Standard (v3) and the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards).

SCOPE

The disclosure scope of the Report covers the economic, environmental and social activities and operational performance of the NANYA TECHNOLOGY's operating system, including NANYA TECHNOLOGY CORPORATION and its subsidiaries in Taiwan.

AFNOR Asia is responsible for:

1. According to the Type 2 of the AA1000 Assurance Standard (v3), evaluate NANYA TECHNOLOGY's compliance with the AA1000 Accountability Principle (2018), and verify the reliability and quality of the specific sustainability performance information and data disclosed in the Report. The verification scopes include sustainability issues, response mechanism, performance information, management systems of information, and the processes of materiality evaluation and stakeholder participation.
2. In accordance with the GRI Standards, we verified the statement options and material topics disclosed in the Report compiled by NANYA TECHNOLOGY.



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Assurance Statement

REFERENCES

The scope of the assurance includes an assessment of the quality, accuracy and reliability of specific performance information, and assessment of adherence to the following reporting criteria :

- AA1000 Accountability Principles (2018)
- GRI Standards

METHODOLOGY

- Review the process and management of the principles of inclusivity, materiality, responsiveness and impact described in the Report related to the AA1000 Accountability Principles (2018).
- The Report is reported in accordance with the GRI Standards, and the content of the Report is reviewed for general disclosures and specific topic disclosures that comply with the GRI Standards.
- Conduct interviews with the management team to confirm stakeholder communication and response mechanisms.
- The qualitative and quantitative information produced, collected, and disclosed by the Report was reviewed through a validated sampling plan.
- Interviews with members of the organization related to sustainable development management and report writing, including representatives of all levels and departments.
- The verification team inspected and reviewed the documents, materials and information related to the report by interviewing the responsible personnel of each group of NANYA TECHNOLOGY.
- Check the sufficiency and completeness of supporting materials and evidence for the content of the Report.

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CONCLUSION

◆ AA1000 Accountability Principles

Inclusivity

NANYA TECHNOLOGY has continued to implement a wide range of stakeholder engagement programs to identify and understand the important information generated by issues of concern to stakeholders. The report has fairly reported and disclosed economic, environmental and social information, which is sufficient to support appropriate plans and goals. Future reports may:

- sustaining corporate sustainable development strategies, effectively integrating internal and external resources, managing risks and opportunities, clearly setting program goals, and presenting sustainability-related performance that stakeholders are concerned about.
- continuously strengthen the existing mechanism for identifying stakeholders and materiality issues, collect and understand stakeholders' concerns, specific methods of participation, and reasonable expectations and interests.

Materiality

NANYA TECHNOLOGY has released relevant information on sustainable management to enable stakeholders to judge the company's management and performance, and develop and implement a decision-making mechanism for material issues to accommodate issues from all parties. Future reports may:

- expand the number of questionnaires and returns of stakeholders, continue to collect and disclose significant sustainable development information, and fully disclose significant sustainable development information.
- continue to strengthen the identification mechanism of positive and negative impacts; materiality considerations and related impacts, strengthen the risk and opportunity management and control of materiality issues, and implement them into the operating procedures of each department.

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Responsiveness

NANYA TECHNOLOGY has developed and implemented a stakeholder response mechanism and the comparison of SDGs, clearly declaring relevant policies and communicating with stakeholders, and responding to expectations and opinions from stakeholders. Future reports may:

- continue to strengthen the response and communication mechanism of various departments and stakeholders, strengthen the depth and breadth of disclosed data and increase their comparability.
- continue to compile the responses of stakeholders to this report as a reference for future refinement.

Impact

NANYA TECHNOLOGY has developed and implemented a process for understanding, measuring, evaluating and managing the impact of the organization, and provided the necessary capabilities and resources, and committed to making a comprehensive and balanced disclosure of the measurement and evaluation of the organization's impact on stakeholders and itself. Future reports may:

- continuously strengthened the risk and opportunity monitoring and measurement mechanism of various major sustainable actions and related impacts, and implement them into the operating procedures of various departments.

◆ Global Reporting Initiative Sustainability Reporting Standards

Based on the results of the review, we confirm that the Report complies with GRI reporting requirements in terms of general disclosure items and specific topic disclosures, including material topic management and disclosure items. Future reports may:

- continuously collect and disclose performance information that can be extended to other regions or operating bases in the future, and strengthen the depth and breadth of disclosed information, strengthen the content of management policy disclosure, and more completely present the context of sustainability and related sustainability performance.
- continuously collect major issues, risks and opportunities, strengthen management and control, practice results, and gradually implement various operations and management actions of subsidiaries in various operating bases, so as to expand the influence of enterprises on sustainable management.

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ASSURANCE OPINION

In our opinion, the information and data presented in the Report by NANYA TECHNOLOGY provides a fair and balanced representation. We believe the focuses on economic, environmental, and social aspects of NANYA TECHNOLOGY in 2022 are well represented.

Afnor Group has developed a set of process for the Assurance of Sustainability Reports based on current practice guidance provided in the AA1000 Assurance Standard (v3) and GRI Standards. We believe that the evidence collected by onsite assessment has exhibited that NANYA TECHNOLOGY did follow the guidance of AA1000 Assurance Standard (v3) and GRI Standards, and their self-declaration in response to the Global Reporting Initiative.

ASSURANCE LEVEL

In accordance with the AA1000 Assurance Standard (v3), we verified this assurance statement corresponding to a high level. The scope and methods are as described in this statement.

LIABILITY

This assurance statement is intended for the use of NANYA TECHNOLOGY CORPORATION only. AFNOR is not responsible for any other uses. Our responsibility is only based on the scope and methodology described, and to provide stakeholders an independent assurance statement.

For and on behalf of AFNOR :

Trevor Wilmer
The Director for Certification and Assessment
MAY/02/2023

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