



3 Innovation

The Best Partner for Our Customers

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As one of Nanya Technology's four core values, *Innovation* is the driving force behind our technological growth and competitive edge. We aim to strengthen product research, development, and manufacturing to meet diverse customer needs and become the Best DRAM Partner for Smart World.

919 cases

In 2025, 919 patents were granted to Nanya Technology.

31.0%

In 2025, R&D expenditure accounted for 10.6% of revenue, while R&D personnel represented 31.0% of employees, which demonstrates Nanya Technology's commitment to technological development.

NT\$420 million

At the end of 2025, Nanya Technology had developed 152 AI applications with annual benefits reaching NT\$420 million.



Strategy and Performance of Material Topics

◆ Exceeded goals ◆ Achieved ◆ Not achieved

Material Topics and Strategy	2025 Goals	2025 Performance	2026 Performance
R&D and Innovation - Designing new next-generation products - Developing 10nm-class process technologies - Entering the high-density server module market - Smart factory - Increasing the number of granted patents	Third-generation 10nm-class DRAM process and 16Gb DDR5 products meet shipping verification standards	◆ Designs for the pilot product of third-generation 10nm-class DRAM was completed in Q3 2025. The products are currently in trial production.	Third-generation 10nm-class DRAM process and 16Gb DDR5 products meet shipping verification standards
	Training a total of 550 engineers and equipping them with AI theoretical and practical skills	◆ A total of 550 engineers were trained and equipped with AI theoretical and practical skills	Training a total of 600 engineers and equipping them with AI theoretical and practical skills.
	Completing the development of a total of 150 smart applications	◆ Completed the development of a total of 152 smart applications.	Completing the development of a total of 170 smart applications.
	Number of patents granted in Taiwan >250	◆ Number of patents granted in Taiwan: 328	Number of patents granted in Taiwan: 375
Environmentally Friendly Products - Technology enhancement: Developing advanced and efficient products and helping consumers reduce energy consumption and carbon emissions during product use - Consideration of product lifecycle: Increasing the environmental friendliness of products - Hazardous substance management: Ongoing promotion of the initiatives to replace hazardous substances in product manufacturing materials	Proportion of advanced processes such as 20nm accounts for 96% and above	◆ Proportion of advanced processes such as 20nm accounted for 97.3% and above	Proportion of advanced processes such as 20nm $\geq$ 96%
	Completing product life cycle inventory on 100% of products	◆ Completed product life cycle inventory on 100% of products	Completing product life cycle inventory on 100% of products
	100% of products comply with hazardous substances free regulations and customer hazardous substance specifications.	◆ 100% of products complied with hazardous substances free regulations and customer hazardous substance specifications.	100% of products comply with hazardous substances free regulations and customer hazardous substance specifications.
	100% of raw materials free of PFOA-related substances	◆ 100% of raw materials were free of PFOA-related substances	100% of raw materials free of PFOA-related substances

3.1 / R&D and Innovation

Recognizing the growing trend of smart products that improve the quality of life and contribute to energy conservation and carbon emissions reduction, Nanya Technology invests substantial resources annually in developing new DRAM products, next-generation manufacturing processes, and advanced 3D stacked packaging technologies. We provide value-added services to customers, strengthen intellectual property rights and trade secret protection, and accelerate our advancement in product diversification and smart factories. Looking ahead, Nanya Technology will continue developing more advanced third- and fourth-generation 10nm-class DRAM process technologies and products.

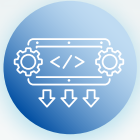
» Investment in Innovative R&D

Item	Year	2022	2023	2024	2025
Investment in Innovative R&D	Operating revenue (A) (in NT\$100 million)	570	299	341	666
	R&D and innovation expense (B) (in NT\$100 million)	78.4	75.8	76.9	70.4
	R&D expense as a percentage of operating revenue (B/A)	13.8%	25.3%	22.5%	10.6%*
	Total number of employees (C)	3,685	3,647	3,693	3,835
	Total number of R&D and innovation personnel (D)	1,000	1,054	1,098	1,190
	R&D personnel as a percentage of total employees (D/C)	27.1%	28.9%	29.7%	31.0%

*R&D expenses accounted for 10.6% of revenue in 2025, down from 2024, primarily due to the economic recovery, which increased revenue from NT\$34.1 billion in 2024 to NT\$66.6 billion.



| The Smart Factory of Nanya Technology



Smart Manufacturing - Phase 1

Production and Manufacturing
Automation

2007

Advancing Factory Automation

- 12-inch wafer fab construction
- Enhanced automation for equipment, material handling, and dispatching
- Real-time equipment health monitoring
- Advanced process control technologies



Smart Manufacturing - Phase 2

Big Data Integration and Application

2014

Manufacturing Information Integration

- Establishment of a big data integration platform
- Yield engineering data integration
- Production information integration

2015

Information Analysis Applications

- Enhanced engineering data analysis applications
- Data mining applications
- Development of intelligent optimal scheduling technologies

2018

AI Development

- AI technologies implementation and talent cultivation
- AI application development: prognostics and health management/process control/productivity enhancement/quality inspection/yield analysis/process development/labor safety/information security/energy management

2021

Adoption of New Digital Technologies and the Full Activation of AI

- Comprehensive implementation of AI technology
- Workflow automation
- Cloud services and edge computing applications

2027

Establishing New 12-Inch Fab

- Smart infrastructure
- Smart application systems



Nanya Technology's 12-inch wafer fab is equipped with the necessary infrastructure for a smart factory, including highly automated production lines, wafer fab IoT, a large-scale sensor network, and big data platform. Leveraging AI technology, Nanya Technology has expanded innovative applications across eight key categories: prognostics and health management, process control, productivity enhancement, quality inspection, yield analysis, process development, labor safety and information security, and energy management.

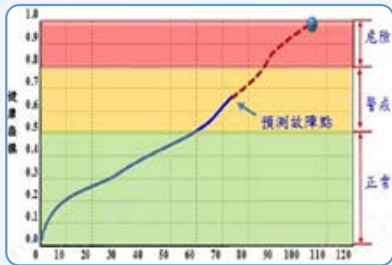
Currently, Nanya Technology has developed a range of innovative applications for its production lines, including prognostics and health management, advanced process control, production scheduling optimization, wafer quantity prediction, smart material handling, wafer probe mark inspection, defect image recognition, yield wafer image recognition, and automatic measurement of engineering images. These applications effectively enhance overall operation efficiency and generate benefits across three key aspects: Yield, Quality and Output.



AI Application Categories

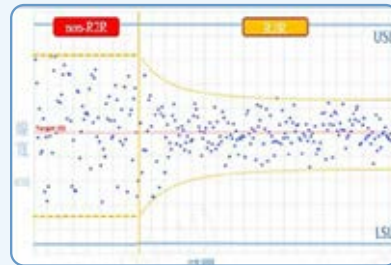
01

Prognostics and Health Management



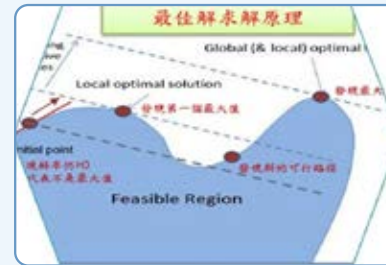
02

Process Control



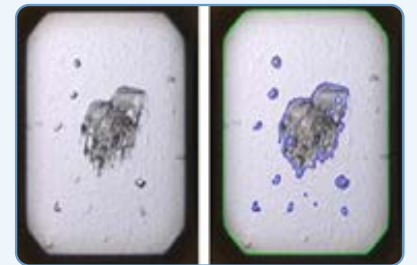
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Productivity Enhancement



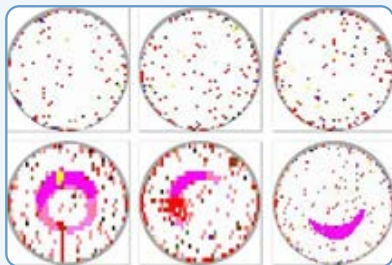
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Quality Inspection



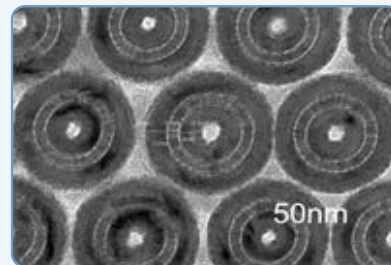
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Yield Analysis



06

Process Development



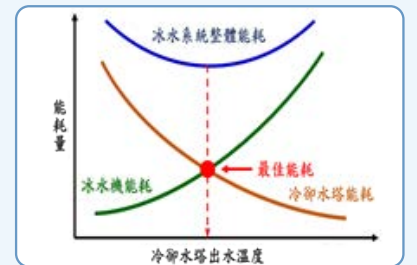
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Labor Safety and Information Security



08

Energy Management

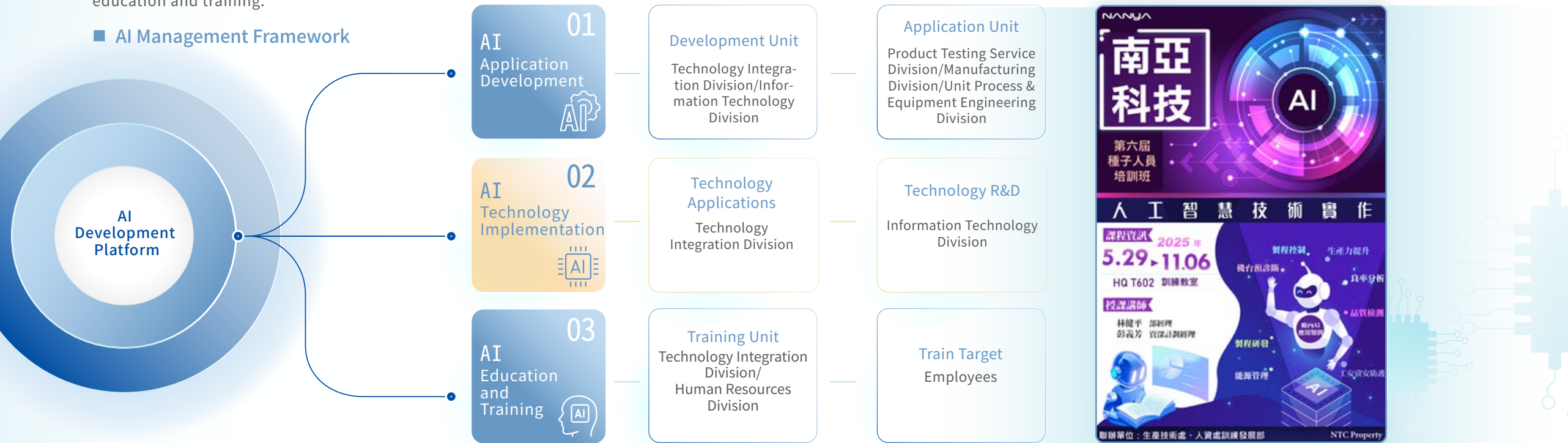


AI Development Benefits and Promotion

In 2025, 18 smart applications were completed. From 2018 to the end of 2025, Nanya Technology developed a total of 152 smart applications. These applications help improve product yield and quality, reduce abnormal scrap, increase equipment utilization, lower maintenance costs and raw material consumption, expand production capacity, and enhance workforce efficiency, generating an annual benefit of NT\$420 million. With the ongoing development of new AI applications, Nanya Technology anticipates that the cumulative benefits will reach NT\$2.1 billion over the next 5 years (2026 to 2030).

Innovation and promotion are primarily driven through a cross-functional framework, supported by three key platforms: AI application development, AI technology implementation, and AI education and training.

AI Management Framework



01. AI Application Development Platform - 60 engineering personnel, including domain experts, information experts, and statistics experts are brought together to systematically develop highly efficient smart systems.

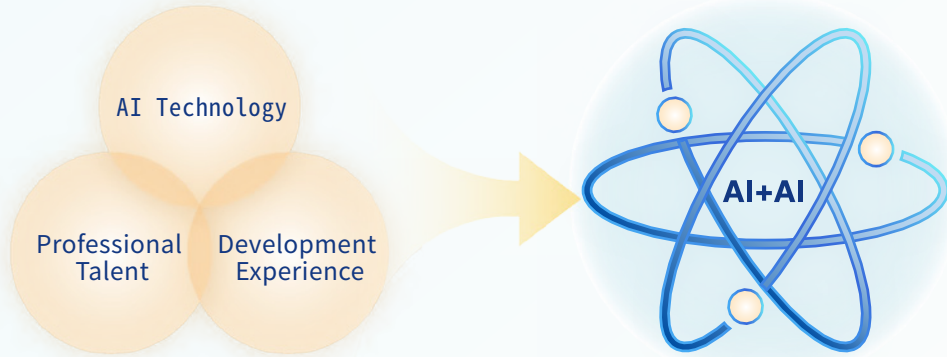
02. AI Technology Implementation Platform - Strengthen the AI team's technical capabilities by systematically introducing technologies such as machine learning, deep learning (CNN¹, RNN², object detection, generative AI), and edge computing.

03. AI Education and Training Platform - Training is conducted through a combination of external instructors and self-directed training by internal trainers, targeting company employees whose work is related to AI applications. In 2025, training was completed for 50 engineers, bringing the cumulative total to 550 engineers trained from 2018 through the end of 2025, equipping them with theoretical knowledge and practical technical skills in AI.

Note 1: CNN: Convolutional Neural Networks

Note 2: RNN: Recurrent Neural Networks

■ 2018-2026 AI Application Development Plan



Cultivating Development Capabilities

Since 2018, Nanya Technology has built an AI technology application team which focuses on learning and implementing AI technologies to gradually apply AI in various work settings. Nanya Technology has connected additional smart systems, such as wafer yield analysis system, intelligent optimal scheduling system, production line stability control system, and universal image monitoring management system. These initiatives have amplified intelligence and efficiency, making overall production line operations more effective. In the future, Nanya Technology will continue to deepen and expand its technical applications, introducing more advanced AI technologies, enhancing cross-system integration capabilities, and extending these across all application units, thereby comprehensively improving factory manufacturing performance.

Nanya Technology introduced and obtained TIPS (Grade A) certification in 2023, establishing standards and related management procedures for the preliminary evaluation, process documentation, and results review of AI application development. The fundamental principles governing AI applications are security and legality. All related software and systems must be properly licensed, and cloud-based architectures are prohibited to prevent the leakage of confidential company information. AI applications are intended solely for work-related purposes and may not be used for personal or other non-business purposes, nor for any illegal or infringing activities.

AI Intelligent Enhancement

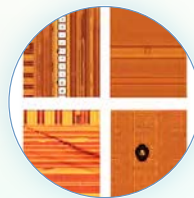
■ AI Computing Power Investments and Key Achievements

AI research and applications require powerful computing resources to shorten model training cycles, improve real-time inference, and provide the computational foundation for larger-scale, more complex algorithms, thereby accelerating innovation and the implementation of diverse applications. To support the adoption of AI technologies, more than NT\$30 million has been cumulatively invested since 2018 in the procurement and deployment of GPU computing resources. These investments have not only strengthened the company's continued advancement in AI technologies but also laid the foundation for the development of AI applications.

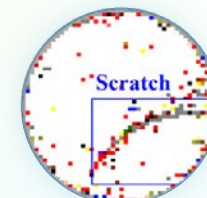
Image recognition is one of the most influential technologies in artificial intelligence because it enables machines to *see* and understand visual information, thereby playing a critical role across a wide range of applications. To date, it has been widely applied to various quality inspection scenarios on production lines. Key achievements include replacing manual visual inspections to reduce labor requirements and minimize the risk of misjudgment; shifting inspection frequency from sampling-based inspections to full inspections to improve inspection effectiveness and enable real-time anomaly detection; and monitoring not only non-conforming products or equipment based on defect quantities, but also unusual defect distribution patterns.

» Image Recognition

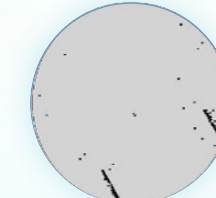
Visual Inspection



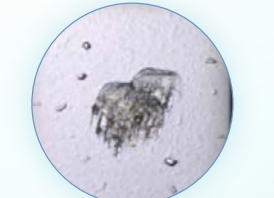
Yield Inspection



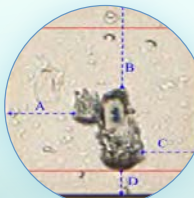
Scratch Inspection



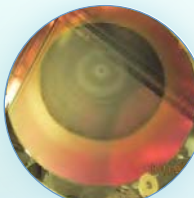
Probe Mark Inspection



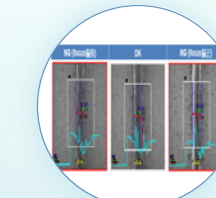
Bond Pad Inspection



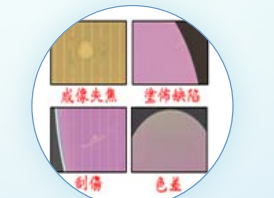
Wafer Backside Inspection



Process Optimization



After-Development Inspection



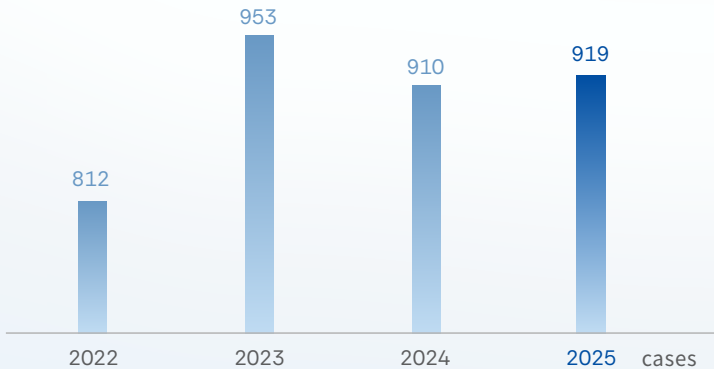
Intellectual Property Right Status and Strategy

Nanya Technology not only works with world-class partners to adopt advanced technologies, but also invests heavily in the development of proprietary technologies. Over the years, Nanya Technology boasts a considerable amount of intellectual property. At the end of 2025, Nanya Technology had received over 8,600 patents worldwide, not only protecting the results of technological development, but also securing our competitive edge. With this powerful tool for both technological and business competition, Nanya Technology flexibly utilizes intellectual property rights to effectively defend against frivolous patent lawsuits.



Nanya Technology **had no material legal incidents related to intellectual property rights in 2025.**

» Patents Granted to Nanya Technology Performance



Nanya Technology's Intellectual Property Right Strategy



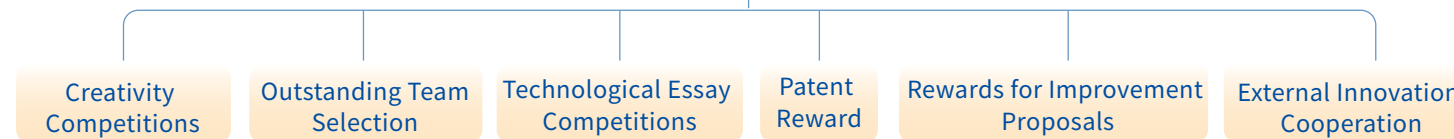
In addition to patents, trade secrets are also extremely crucial intellectual assets in the semiconductor industry. In recent years, Nanya Technology has actively introduced advanced manufacturing process technologies, developed new products, and innovated sales models. Among the intellectual assets produced during these processes, some have been protected by patent applications. Others, however—whether they are technologies, methods, processes, formulas, programs, designs, or other information that can be used for production, sales, or operations—are considered trade secrets as long as they remain confidential and possess economic value. These trade secrets are protected by a rigorous information security system. Additionally, in September 2024, Nanya Technology passed the Taiwan Intellectual Property Management System (TIPS) Grade A certification once again, further affirming the quality of Nanya Technology's intellectual property right management system.

Incentives for Innovation

As one of Nanya Technology's core values, *Innovation* is the driving force behind our technological growth and competitive edge. We believe that the key to ongoing innovation comes from the improvement ideas proposed during daily operations. Constantly optimizing processes, gaining experience, and building on results allows us to drive more forward-looking developments. To encourage employees to propose innovative ideas, Nanya Technology organizes annual innovation activities, including improvement proposals, patent reward, creativity competitions, essay contests, and outstanding team competitions. We recognize and reward innovative ideas proposed by each employee. Through these programs, Nanya Technology aims to embed innovation into the mindsets of our employees and further extend it to external partnerships, creating a systematic innovation force that keeps driving our Company's growth and competitive edge.



Mechanism to Drive Creativity



» Results of Innovative Activities

Year		2022	2023	2024	2025
Patent Reward	Number of patents granted	812	953	910	919
Rewards for Improvement Proposals	Number of proposals	212	193	163	161
	Actual annual benefits (in NT\$ thousand)	756,744	755,784	366,233	563,138 ^(Note)
Technological Essay Competitions	Number of entries	103	118	122	115
Outstanding Team Competitions	Number of entries	17	16	17	17

Note: 1. After many years of hard work, the self-developed 10nm-class technology has achieved significant results. Because of this, major improvement projects related to manufacturing processes in the fab have gradually decreased.

2. Having deepened the functional training for dedicated personnel in managers' offices and seed personnel since 2025, we are implementing administrative rewards for excellent units in 2026 to comprehensively enhance the quality and effectiveness.



Rewards for improvement proposals are categorized into seven functional areas: quality, manufacturing process, production capacity, equipment, environmental, safety and hygiene (ESH), and others. Nanya Technology encourages employees to focus on prevention instead of conducting non-conforming handling afterward. In addition to the proposers and their direct supervisors, the proposal process also includes forming an expert review taskforce for examining the proposal's specifics, effectiveness, and contribution level from multiple perspectives. In 2025, a total of 161 improvement proposals were submitted, generating actual annual benefits of NT\$563.138 million, a 54% increase compared with 2024.

» Improvement Proposal Workflow



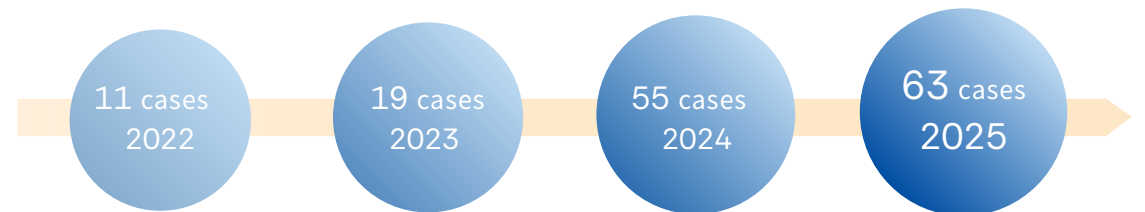
» Outstanding Cases

Category	2025 Improvement Proposals	Benefit Summary
 Quality Improvement	fA25004431 Anomaly Prevention	The CPCIM system replaced manual inspection procedures with automated controls to prevent abnormal incidents, resulting in annual cost savings of approximately NT\$12.6 million.
 Process Improvement	fA25010935 Yield Improvement	To improve production yield for next-generation products, we continuously verified and optimized process transfer conditions to progressively increase yield, resulting in annual cost savings of approximately NT\$4.24308 million.
 Production Capacity Improvement	fA25001083 Production Capacity Improvement	We developed a new board design to increase testing capacity, reduce per-unit BIB manufacturing costs, and improve testing efficiency, resulting in annual cost savings of approximately NT\$89.763 million.
 Other Improvement	fA25009998 Efficiency Improvement	We established an automated workflow applicable to all products to improve process efficiency and accuracy, resulting in approximately NT\$74.876 million in cost savings.

Category	2025 Improvement Proposals	Benefit Summary
 Equipment Improvement	fA25007287 Process Improvement	Based on the specifications required for new process development, we carried out process integration improvements and independently modified equipment, reducing the need to purchase new machines and saving approximately NT\$293 million in direct equipment procurement cost.
 ESH Improvement	fA25000950 Residual Gas Reduction Improvement	We changed the Si ₃ H ₆ packaging specification from 5 kg (30L) to 12 kg (30L), reducing the number of cylinder replacements from 161 cylinders per year to 57 cylinders per year. This also reduced residual cylinder pressure, saving approximately 257.5 lb annually, while lowering gasket costs and leakage risks, resulting in annual cost savings of approximately NT\$4,399 thousand per year.
 AI Improvement	fA25009113 Prognostics System	We implemented a predictive health diagnostic system using outlier analysis to detect abnormalities in the hot exhaust fan system at an early stage, eliminating issues before they occur and preventing unexpected shutdowns of production process equipment, resulting in approximately NT\$330 thousand in cost savings.

In terms of scaling the impact of our technological R&D results, Nanya Technology integrates external innovation resources to accelerate and boost R&D outcomes. For example, we collaborate with National Taiwan University, National Tsing Hua University, National Yang Ming Chiao Tung University, National Central University, Ming Chi University of Technology, Chang Gung University, IMEC, ITRI, and testing equipment suppliers in areas like basic research for next-generation memory, product design, and product testing. We also jointly develop 10nm-class processes and materials with mask and equipment manufacturers, and rapidly develop diverse application products through wafer-level customized packaging with downstream system developers. Over the past 4 years, Nanya Technology has increased open innovation projects each year to support its short-, medium-, and long-term R&D plans.

» Technology R&D Open Innovation Program



3.2 / Green Product Development

Nanya Technology works together with its customers toward the goal of protecting our green planet. We have adopted Life Cycle Thinking (LCT) and the Design for Environment principles. Nanya Technology, long committed to developing advanced, efficient, and eco-friendly products, continues to help customers develop products with low-energy consumption design while leveraging its influence on the supply chain for hazardous substance management and responsible mineral sourcing management. To keep improving the environmental friendliness of our products, Nanya Technology set environmental health and safety performance indicators and launched projects to reduce waste, promote resource reuse, and cut greenhouse gas (GHG) emissions. Aligned with the Green Product Promotion Committee on green product management, Nanya Technology takes seven environmental impact aspects into consideration from the very beginning of new product development. These include procurement, manufacturing, transportation, product use, disposal, and recycling. Such a comprehensive approach seeks to identify improvement opportunities that will enhance environmental benefits.

» Nanya Technology's Design for Environment Matrix

	Procurement	Manufacturing	Transportation	Product Use	Disposal and Recycling
Energy Efficiency	✓	✓	✓	✓	
GHG Emissions	✓	✓	✓	✓	
Material Reduction	✓	✓	✓		
Responsible Mineral Sourcing	✓				
Hazardous Substances Free	✓	✓			
Waste Reduction		✓			✓
Water Resource Reduction		✓			

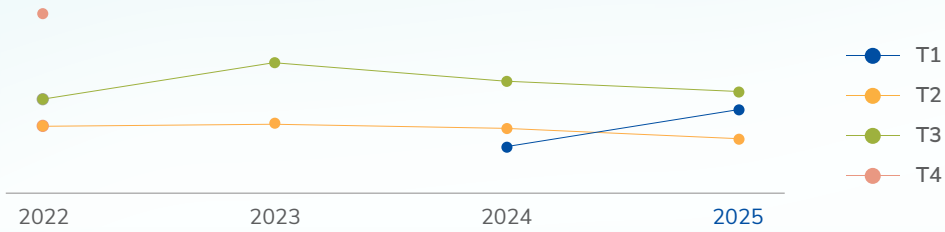
| Life Cycle Assessment

In response to international environmental trends, Nanya Technology adopted the life cycle assessment tool Simapro to conduct 100% product Life Cycle Assessments (LCA), which allowed us to calculate the environmental footprint of our products and identify areas for improvement. Meanwhile, we also gathered environmental data and coefficients during the analysis process to build a decision support system for green product development. Nanya Technology performed quantitative LCAs at each stage of a product's life cycle, and took multiple factors into consideration. In accordance with the quantification and communication requirements and guidelines outlined in the ISO 14040 series for Product Environmental Footprint life cycle impact assessments, Nanya Technology participated in product environmental footprint declarations, while referencing the regulations of ISO 14064-1 GHG inventory and ISO 14067:2018 Carbon Footprint International Standards to carry out these declarations. The analysis covered various DRAM products made by Nanya Technology, with life cycle boundaries including raw material manufacturing, transportation, wafer manufacturing, component packaging, module assembly, product use, and recycling/disposal. Since our main production activity is memory wafer manufacturing and other components are outsourced, the primary system boundary is set at wafer manufacturing. Among 28 measures to improve environmental footprint sources, reductions in GHG emissions from the three main sources listed in the results of the 2025 product life cycle assessment are as follows:

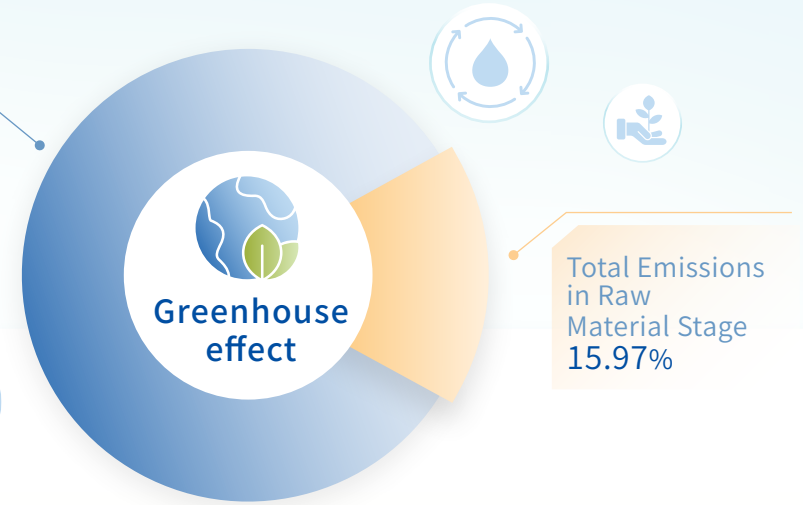
» Three Hotspots of Greenhouse Effect Listed in the 2025 Product LCA Results

	 Electricity Use	 LIQUID OXYGEN (LO2)	 Production wafer
Percentage of Product Carbon Footprint	79.91%	4.04%	3.92%
Improvement Plan	Promote energy-saving improvement initiatives	Require LO2 suppliers to implement energy-saving and carbon reduction management programs	Require 12-inch wafer suppliers to implement energy-saving and carbon reduction management programs
2025 Performance Results	1. Completed 30 ISO 50001 energy management initiatives. Energy-saving benefits achieved: 4,695 MWh 2. Purchased 80.16 million kWh of renewable energy	Suppliers have joined the SBTi and committed to achieving a 25% absolute reduction in Scope 1 and Scope 2 GHG emissions by 2030.	Suppliers have joined the SBTi and committed to achieving a 25% absolute reduction in Scope 1 and Scope 2 GHG emissions by 2030.
Future Improvement Directions	1. Continue implementing ISO 50001 energy-saving initiatives 2. Continue purchasing renewable energy according to plan	Continue requiring suppliers to implement energy-saving and carbon reduction management programs	Continue requiring suppliers to implement energy-saving and carbon reduction management programs

» Trends in Product Carbon Footprint for 10nm/20nm/30nm/40nm Processes

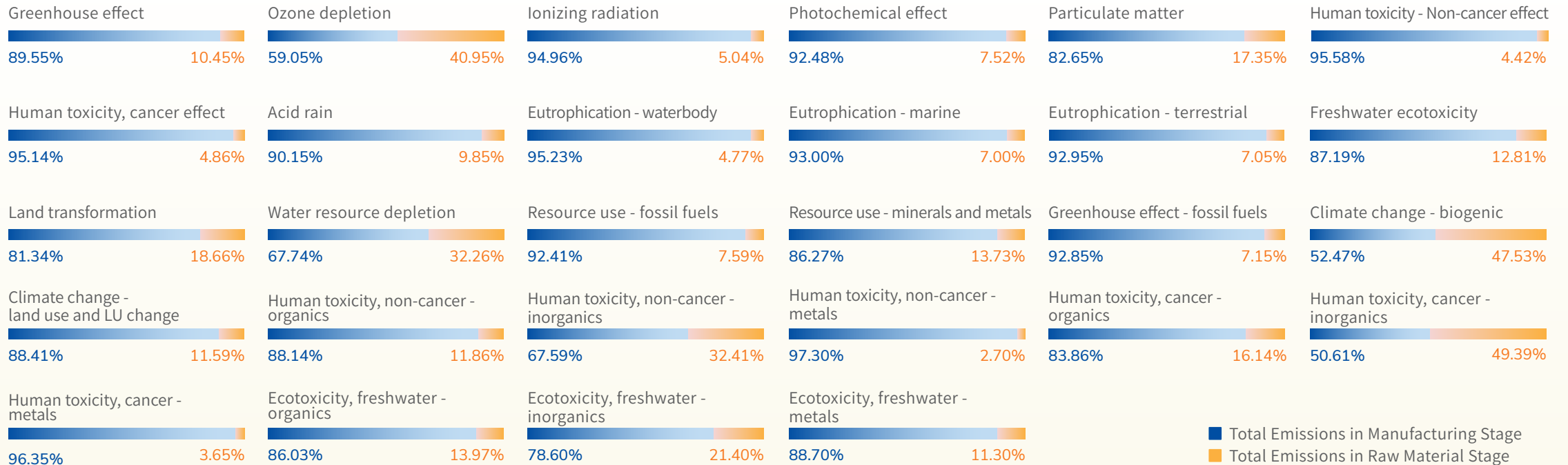


Total Emissions in
Manufacturing
Stage 84.03%



The 2025 product life cycle inventory was completed. Nanya Technology used its staple product, the 20nm 4Gb DDR3 memory, to illustrate the ratio of 28 environmental footprint items across the raw material and manufacturing stages. The manufacturing stage at the factories accounted for about 84.03% of greenhouse effect, while raw material procurement accounted for around 15.97%.

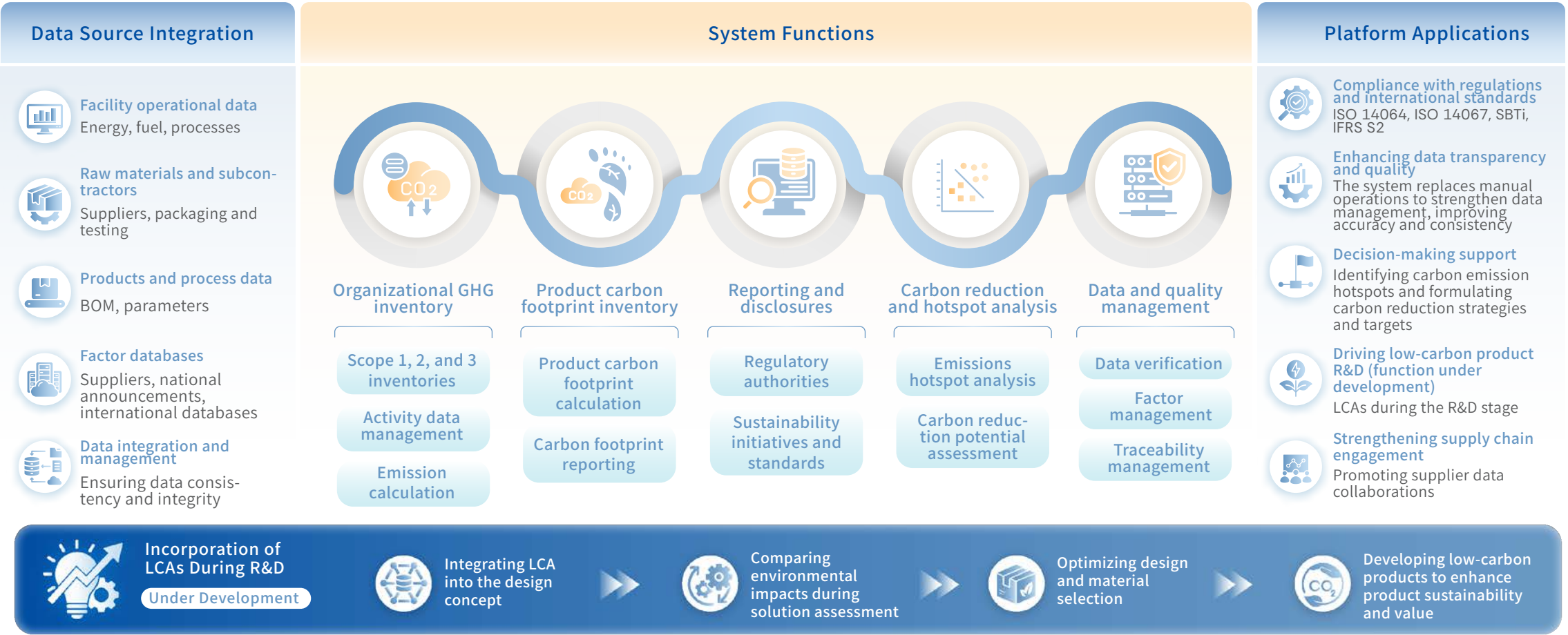
» Proportion of Total Emissions from Raw Materials and Manufacturing Stages of 20nm 4Gb DDR3



■ Total Emissions in Manufacturing Stage
■ Total Emissions in Raw Material Stage

In response to global net-zero trends and stakeholder expectations, Nanya Technology has implemented the digital transformation of its carbon management. In 2025, the Company completed the establishment of its "Sustainable Carbon Management Platform," incorporating digitalized management functions for organizational greenhouse gas inventories, carbon footprint of products (CFP), life cycle assessments (LCA), emissions hotspot analysis, and Design for Environment (currently under development). By comprehensively managing relevant data across the sourcing, manufacturing, and production/sales ends, the platform enhances the accuracy and traceability of carbon emissions information while continuously strengthening Nanya Technology's sustainable competitiveness.

» Overview of the Sustainable Carbon Management Platform Functions



Green Product Design

In response to global climate change and the surge in electricity demand driven by AI-powered digital transformation, Nanya Technology embeds environmental sustainability at the very beginning of the product life cycle. In addition to advancing DRAM R&D, we leverage process shrinkage and next-generation architectures to provide the market with sustainable solutions that combine high performance with ultra-low power consumption. These efforts position us as a key force in promoting energy-saving transformation.

R&D Strategy 1: Advance Process Shrinkage to Maximize Resource Efficiency

We continue to advance 10nm-class process technologies to increase production capacity per unit area, achieving both energy savings and carbon reduction.

01. Capacity growth and low-carbon footprint:

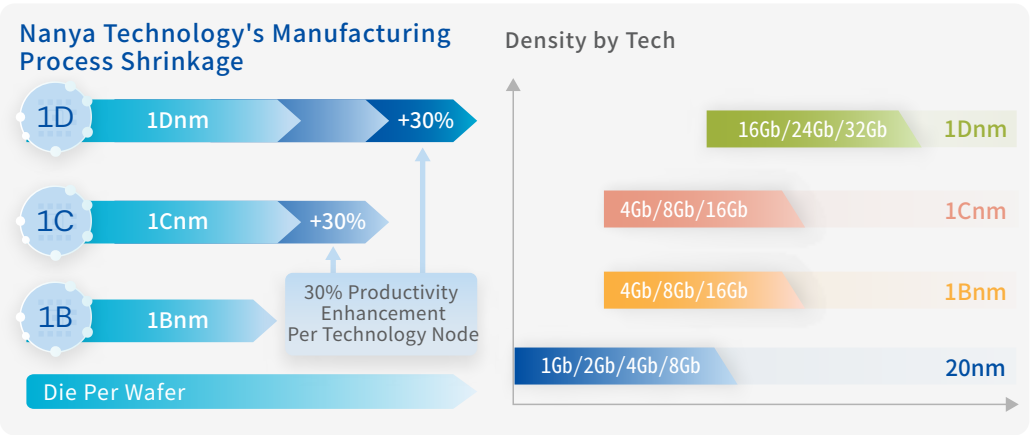
As process evolves from 1B to 1C and 1D, die per wafer (DPW) increases by more than 30% with each generation. Through economies of scale, water and energy consumption are effectively distributed, significantly reducing the carbon footprint per unit product.

02. Process development blueprint:

1Bnm has reached stable mass production; 1Cnm DDR5 has entered trial production and validation, with the trial production of LPDDR5 initial samples progressing in parallel; early-stage 1Dnm DDR5 pilot products are also approaching design completion.

03. High-density transition:

Strategic focus on high-density products of 16Gb and above, with continued advancement toward 24Gb and 32Gb.



R&D Strategy 2: Advancing Memory Generations to Drive Low-Carbon Transformation in End Devices

Energy consumption during product use is central to emissions reduction. Through continuous technological upgrades to optimize power efficiency, we reduce the energy burden on data centers and mobile devices at the source. Environmental responsibility is thus extended upstream from the end system manufacturers to the wafer fabrication phase.

01. High bandwidth and low voltage:

DDR5 5600Mbps products are entering mass production, with bandwidth scaling to 6400/7200/8000Mbps; LPDDR5x targets the mobile computing market, aiming for 8533/9600Mbps bandwidth, combined with fast sleep technologies to optimize both dynamic and static power consumption.

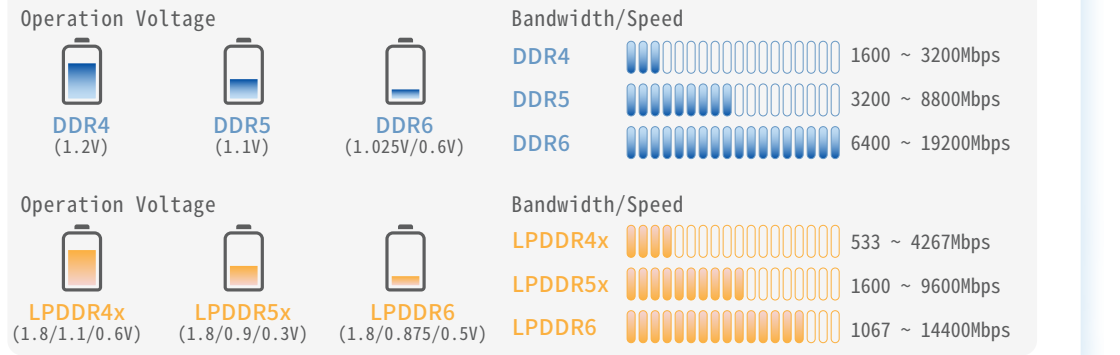
02. Built-in intelligent architecture:

On-die ECC (Error Correction Code) is introduced to enhance stability in extreme environments while recovering failed marginal dies, maximizing the value of each silicon wafer.

03. Highly integrated design:

DDR5 module products optimize PMIC configurations to improve conversion efficiency and help customers reduce materials used for motherboard components, enabling lighter, thinner, and more environmentally friendly electronic products.

Nanya Technology's Product Planning and the Evolution of Product Specifications



R&D Strategy 3: 3DS Stacking Technology Empowering Green Computing in the AI Era

To address the high-load demands of AI computing, we leverage TSV (Through-Silicon Via) technology to provide critical support for high-performance computing.

01. Through-silicon via (TSV) technology:

TSV technology is implemented in 1Bnm DDR5 products, doubling storage capacity while significantly reducing energy loss during high-frequency data transmission.

02. Edge AI solutions:

High-bandwidth solutions are developed for AI PCs and smartphones to support localized computing, reducing the energy demand of network infrastructure caused by cloud data transmission. Nanya Technology is also investing in the development of customized ultra-high-bandwidth DRAM, with products currently in trial production and validation. Through high levels of integration, we aim to achieve product light-weighting and a two-fold improvement in performance for our customers.

Environmental External Benefits

From the outset of new product development, Nanya Technology keeps the environmental impact in mind throughout the entire product lifecycle. For electronic products, energy consumption during the usage phase is one of the most significant indicators of environmental impact. Nanya Technology actively develops energy-efficient products to help customers lower energy consumption when using electronic products, thereby reducing GHG emissions.

	Product	Mainstream process products (low power DRAM and 20nm consumer DRAM)
	Scope	Total sales volume equivalent in 2025
	Calculation baseline	Power consumption of mainstream process products in the current year compared with the previous generation
	Calculation method	Totaling the power consumption difference between all products sold in the current year and their respective previous-generation product
		 Benefits Nanya Technology saved more than 1.20485 billion kWh of electricity, approximately 4,337 terajoules ($4,337 \times 10^{15}$) ^{Note 1} , which is equivalent to the average annual electricity consumption of 329,000 households ^{Note 2} . GHG emissions were reduced by 562,667 ton-CO ₂ e ^{Note 3} , which is equivalent to 1,446 times the carbon absorption of Daan Forest Park in one year ^{Note 4} .

Note 1: Estimated based on the average annual residential electricity consumption of 3,666 kWh per household in 2025, as derived from Taipower's website data on actual monthly electricity usage by residential and small business customers (as of 2026/3/20).

Note 2: Estimated using the monthly residential and small-scale commercial electricity usage data on Taipower's website; the annual household consumption is 3,601 kWh/year (as of January 9, 2026).

Note 3: The electricity carbon emission factor adopted is 0.467 kg CO₂e/kWh for 2025, as announced by the Energy Administration.

Note 4: Based on the Energy Administration's estimation that one Daan Forest Park absorbs 389 metric tons of CO₂ annually.

Nanya Technology continues to develop advanced process technologies. So far, next-generation products based on advanced processes have reduced power consumption by approximately **15%** compared to previous generations.



Collaboration with main chip customers to adopt multi-chip packaging, reducing the number of test channels during backend processes and cutting energy consumption.



By enhancing the development of low-power product lines and expanding the product portfolio, Nanya Technology aims to address the needs of various mobile electronic devices.



Sustainable Products

According to the Semiconductor Technical Screening Criteria under the Taiwan Taxonomy's Reference Guidelines for the Identification of Sustainable Economic Activities, mature 12-inch wafer processes (10 nm and above) must achieve a threshold of $\leq 1.31 \text{ kgCO}_2\text{e}/\text{cm}^2$ to be classified as a green economic activity. In 2025, the emissions intensity for Nanya Technology's sustainable products was $0.90 \text{ kgCO}_2\text{e}/\text{cm}^2$ (per unit of wafer area) for processes of 10nm and above. The associated revenue and investment projects comply with the principles of *Substantial Contribution*, *Do No Significant Harm*, and *Minimum Safeguards*. In 2025, our Taxonomy-aligned sustainable revenue accounted for 93.4% of total revenue.

The Company is committed to developing products that support low-carbon transition. Our product design focuses on high-performance computing, low-power chips, and advanced process technologies to effectively reduce energy consumption in end-use applications. These products are widely used in AI-related servers, mobile devices, personal computers, and other areas.

During the manufacturing process, the Company consistently introduces energy-efficient equipment and process optimization measures to reduce greenhouse gas emissions and electricity intensity per unit of product. Meanwhile, we promote the use of renewable energy and water recycling and reuse, while offering project incentives to advance low-carbon technologies and enhance product energy efficiency. Furthermore, we have established a sustainability performance evaluation mechanism for senior executives, guiding management to effectively balance short-term performance with long-term sustainable development. In alignment with the Company's sustainable development strategy, the Five New Initiatives Project includes courses related to advanced process proprietary technologies and the development and sales of new products. The Company has also established a comprehensive supply chain management mechanism that requires suppliers to implement greenhouse gas management practices and establish energy-saving and carbon-reduction goals. This mechanism ensures that the procurement and sourcing of raw materials meet sustainability standards while reinforcing our information disclosure and risk management.

Nanya Technology Definition of sustainable products	Semiconductor Technical Screening Criteria: $\leq 1.31 \text{ kgCO}_2\text{e}/\text{cm}^2$ for mature 12-inch wafer processes (10nm and above)
Reference	Taiwan Taxonomy
2025 Sustainable Product Data	Emissions intensity for processes of 10nm and above (per unit of wafer area): $0.90 \text{ kgCO}_2\text{e}/\text{cm}^2$
2025 Sustainable Products	Sustainable revenue accounted for 93.4% of total revenue.



Goal

In 2025, designs for third-generation 10nm-class DRAM pilot products were completed in the third quarter, with trial production currently underway. Our 2026 goal is to achieve shipment qualification standards for our third-generation 10nm-class DRAM process and 16Gb DDR5 products, while progressively advancing leading-edge process development to reduce emissions intensity per unit of wafer area.



R&D

The Company is dedicated to developing products that align with the low-carbon transition. In 2025, R&D spending accounted for 10.6% of total revenue, and R&D personnel made up 31.0% of all employees, demonstrating Nanya Technology's commitment to innovation and R&D.



Equipment

① We develop AI applications to improve product yield and quality, eliminate abnormalities and scrap, optimize equipment utilization, and lower both maintenance costs and raw material consumption. A total of 152 smart systems were developed in 2025, with a target of 170 systems to be developed in 2026.

② Renewable energy investment amounted to NT\$440 million in 2025, with a target of NT\$500 million in 2026.
③ Investment in power backup systems amounted to NT\$330 million in 2025, with a target of NT\$1.39 billion in 2026.
④ Investment in process gas abatement equipment amounted to NT\$1.47 billion in 2025, with a target of NT\$1.38 billion in 2026.



Incentives

① Patent proposal bonus: To encourage submissions, the Legal & IP Division grants bonuses to inventors based on preliminary reviews, the Patent Evaluation Committee's evaluation results, and final determinations made by R&D or relevant supervisors.
② Patent grant bonus: When a patent application receives a patent certificate in a key application country designated by the Patent Deployment Committee, the Legal & IP Division grants a bonus to the inventor after consulting lead reviewers from the evaluation committee in the relevant technical fields.

③ Technological essay competitions: To enhance employees' technological capabilities and the quality of their technological essay writing, the Company organizes technological essay competitions divided into two categories: "technological essays" and "technological improvement/physical artifact." Tiered awards and submission incentives are provided based on evaluation results to encourage employees' active participation in technical exchange, knowledge sharing, and continuous improvement, thereby reinforcing the Company's technological expertise and fostering a culture of innovation.
④ To motivate sales personnel and enhance their product profit contributions, we increase average selling prices and optimize the product mix while launching a sales incentive program.

Going forward, Nanya Technology will continue to align with the Taiwan Taxonomy and international sustainability standards by increasing the proportion of products that qualify as green economic activities and enhancing related disclosures, thereby strengthening the Company's competitive advantage and long-term value in the transition toward net zero.

» Sustainable Revenue as a Percentage of Total Revenue, 2022–2025

Item	2022	2023	2024	2025
Operating revenue (NT\$100 million)	569.5	298.9	341.3	665.9
Percentage of sustainable revenue (%)	83.5%	81.8%	87.4%	93.4%

Green Product Management

In 2005, Nanya Technology established the Green Product Promotion Committee (GPPC) to implement Hazardous Substances Free (HSF) management. During product production, Nanya Technology consistently implemented measures to prevent pollution, save energy, reduce waste, and avoid the use of hazardous substances under regulatory restrictions. By integrating and connecting suppliers of raw materials and on-site process materials, as well as subcontractors providing back-end IC assemblies and shipping packaging materials, Nanya Technology successfully created an effective green product supply chain. This supply chain, involving both upstream and downstream vendors, complies with current international environmental regulations and trends. We, through the Green Product Promotion Committee, and the Bureau of Standards, Metrology and Inspection (BSMI) of the Ministry of Economic Affairs of Taiwan implements mandatory environmental regulations in accordance with CNS 15663 "Guidelines for Reducing the Content of Restricted Chemical Substances in Electrical and Electronic Equipment, and refer to EU and other countries' regulations as well as international customers' hazardous substance management standards to formulate the "General Guidelines for Environmental Management of Parts and Materials," continuously implementing effective control over raw materials and related products to reduce the environmental impact throughout the product lifecycle.

To accelerate the substitution and elimination of hazardous substances, Nanya Technology continuously participates in semiconductor industry and supply chain associations, technology platforms, and industry initiatives, jointly collecting regulatory trends, assessing the feasibility of alternative materials with industry partners, and promoting the exchange and collaboration of hazardous substance substitution technologies.

Simultaneously, the company continues to invest R&D resources and related budgets to research and validate low environmental impact materials, process chemicals, and packaging alternatives, gradually reducing the use of hazardous substances in products and processes, and promoting the phased elimination of hazardous substances in line with international regulations, customer requirements, and sustainability goals.

Under the "General Guidelines for Environmental Management of Parts and Materials," all products must meet international regulations and customer requirements. We also use a material hazard-free management system to ensure that the wafers, IC packages, and DIMM module products we produce comply with the relevant hazardous substance management standards.

Nanya Technology defines green products as those that comply with the requirements of BNDCU-0012 General Rules for "Environment-Related to be Controlled" Substances in Parts and Materials, which aligns with the following regulations and standards:

» Complying with the requirements of the Waste Electrical and Electronic Equipment Directive (WEEE) and the Restriction of Hazardous Substances (RoHS) Directive Requirements of 2011/65/EC & 2015/863 (recast)

Restricted Substance	Restricted Level	Threshold Limit (ppm)
Cadmium (Cd)		<100 ppm
Lead (Pb)		<1,000 ppm, Exemption 7C-1 applies to certain products that use resistors
Mercury (Hg)		<1000 ppm
Hexavalent Chromium (Cr6+)		<1000 ppm
Polybrominated Biphenyls (1-10 Bromine) (PBBs)	Homogenous Material	<1000 ppm
Polybrominated Diphenyl Ethers (1-10 Bromine) (PBDEs)		<1000 ppm
Specific Phthalate: DEHP		<1000 ppm
Specific Phthalate: BBP		<1000 ppm
Specific Phthalate: DBP		<1000 ppm
Specific Phthalate: DIBP		<1000 ppm

All products

Compliance with the RoHS Directive

100%



Risk Management

- Conduct hazardous substance testing for products
- Conduct supply chain substance-of-concern investigations
- Responsible mining investigation report

» Complying with IEC 61249-2-21 Halogen-Free (HF) requirements

Restricted Substance	Restricted Level	Threshold Limit (ppm)
Bromine (Br)	Homogenous Material	<900 ppm
Chlorine (Cl)		<900 ppm
Bromine (Br) + Chlorine (Cl)		<1500 ppm

» Complying with the European Union's Packaging and Packaging Waste Regulation EU/2025/40 (PPWR) requirements for the total sum of 4 heavy metals

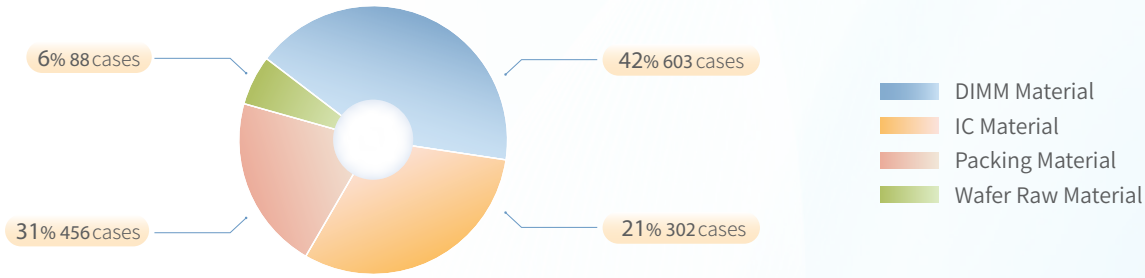
Restricted Substance	Restricted Level	Threshold Limit (ppm)
Cadmium (Cd)	Homogenous Material	The total sum of 4 heavy metals <100 ppm
Lead (Pb)		
Mercury (Hg)		
Hexavalent Chromium (Cr6+)		

» Complying with the United States Toxic Substances Control Act Section 6(h) requirements for non-use of 5 PBT substances

Restricted Substance	Restricted Level	Threshold Limit (ppm)
Phenol, Isopropylated Phosphate (PIP 3:1) CAS No. 68937-41-7	Finished Product	Prohibited
Decabromodiphenyl Ether (DecaBDE) CAS No. 1163-19-5		Prohibited
Pentachlorothiophenol (PCTP) CAS No. 133-49-3		Prohibited, except when the concentration is <1% by weight
Hexachlorobutadiene (HCBD) CAS No. 87-68-3		Prohibited
2,4,6-Tri-Tert-Butylphenol (2,4,6-TTBP) CAS No. 732-26-3		Prohibited, except when the concentration is <0.3% by weight

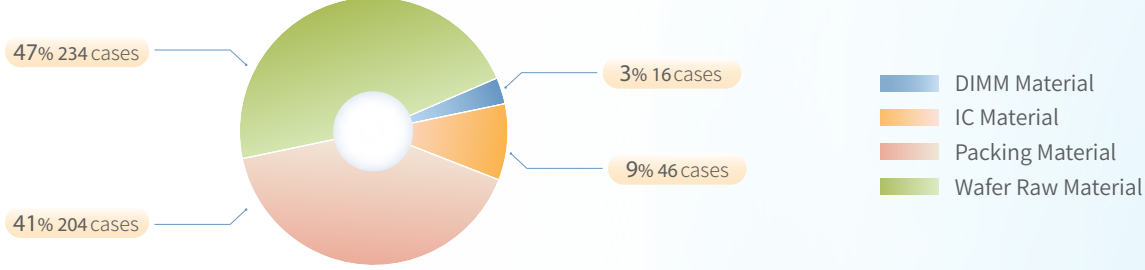
» 2025 RoHS Reports Compliance

To fulfill green product compliance verification requirements, a total of 1,449 test reports were reviewed in 2025, as detailed below:



» 2025 Concerned Substances Survey of Supply Chain

In compliance with regulatory requirements or customer specifications regarding prohibited or restricted substances, such as those outlined in EU REACH, EU POP, and GADSL regulations for homogeneous substances or finished products, we have managed, prohibited or restricted substances of concern in accordance with the applicable regulation scopes. We conducted a total of 8 versions of supply chain substance of concern surveys, including EU REACH SVHC (Substances of Very High Concern) regulatory compliance surveys (conducted every 6 months), specific customer concerned hazardous substance surveys, and due diligence surveys for Responsible Minerals Sourcing. A total of 500 supply chain survey reports were completed as follows:



- Completed EU REACH SVHC (Substances of Very High Concern) V.33,V.34 and V.35 surveys, with a total of 3 versions (CS Survey V.62/V.62.1/V.66/V.68) for the Supply Chain Substances of Concern Investigation Report, totaling 246 reports with a completion rate of 100%.
- Completed customer-required hazardous substance surveys (CS Survey V.67), for the Supply Chain Substances of Concern Investigation Report, totaling 9 reports with a completion rate of 100%.
- Completed responsible mining due diligence with 2 versions (CS Survey V.61, V.63 ,V.65) for the Supply Chain Substances of Concern Investigation Report, totaling 245 reports with a completion rate of 100%.



Green Chemistry Laboratory

Quality is the key factor in determining technical capability. To meet customer requirements and standards for process yields and product reliability, Nanya Technology's chemical laboratory is consistently investing in refining its testing methods and techniques. This investment is driven by goals to enhance green manufacturing and quality capabilities.



Improving work
efficiency

Implementing a data
automation system, leading
to a 65% reduction in report
printing paper usage



Protecting personnel
workplace safety

Assessing zero use of
n-Hexane for equipment
cleaning

