

5 Green

A Producer via Green Technology

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Committed to *Creating Shared Value* , Nanya Technology actively inventories potential environmental impacts from its operations, and address topics such as nature, climate, energy, resources, pollutant emissions, and circular utilization. By focusing on product design and advanced technological R&D at the source, we aim to provide consumers with more effective, lower-carbon products. In addition, we have adopted standards that exceed regulatory requirements and align with global sustainability frameworks to prevent or reduce the risks of impacts. Sustainability performance indicators have also been formulated to review progress, so as to ensure that we fulfill our commitment to green production.

93.6%
The reduction rate of perfluorocarbon (PFCs) emissions during industrial processes

CDP A List
Included in CDP's Climate Change and Water Security A List in 2025

78,773Mwh
Total energy savings from energy conservation measures completed between 2017 and 2025

Strategy and Performance of Material Topics

◆ Exceeded goals ◆ Achieved ◆ Not achie ved

Material Topics and Strategy	2025 Goals	2025 Performance	2026 Goals
Greenhouse Gas (GHG) Management • SBT Target: Reduction of Scope 1+2 GHG emissions by 25% by 2030 compared to 2020 baseline; reduction of Scope 3 product unit emissions by 27% by 2030 compared to 2020 baseline. • Energy savings and carbon reduction: Setting short-, medium-, and long-term reduction targets and actively implementing relevant management measures. • Low-carbon manufacturing: Advancing production technologies to reduce GHG emissions during the manufacturing process.	12.5% reduction in Scope 1+2 GHG emissions in 2025 compared to 2020	◆ Reduction by 11.2%[Note1]	15% reduction in Scope 1+2 GHG emissions in 2026 compared to 2020
	13.5% reduction in Scope 3 GHG emissions per product unit in 2025 compared to 2020	◆ Increase by 14.6%[Note1]	16.2% reduction in Scope 3 GHG emissions per product unit in 2026 compared to 2020
	Reduction rate exceeding 93% in process perfluorocarbon (PFCs) emissions	◆ Reduction rate reached 93.6%	Reduction amount exceeding 93% in process perfluorocarbon (PFCs) emissions
	0 days of production interruption due to climate change-related disasters	◆ Keep at 0	0 days of production interruption due to climate change-related disasters
Energy Management • Implementation of energy conservation measures: Systematic energy management via ISO 50001 to improve energy efficiency. • Innovative applications: Acquiring the latest energy conservation technologies and methods through external collaboration and training.	From 2017 to 2025, energy-saving measures achieved a cumulative total of 75,000 MWh ($2.7x10^8$ MJ) per year.	◆ 78,773 MWh ($2.84x10^8$ MJ)	From 2017 to 2026, energy-saving measures achieved a cumulative total of 82,500 MWh ($2.97x10^8$MJ) per year.
	Renewable energy usage of 78,000 MWh ($2.81x10^8$ MJ)	◆ 80,160MWh ($2.89x10^8$ MJ)	Renewable energy usage of 90,000 MWh ($3.24x10^8$ MJ)
Water Management • Risk response: Establishing backup water sources as well as water reservoirs and coordinating water usage via inter-facility emergency response organizations. • Wastewater reclamation and reuse: Building categorized treatment systems and implementing multi-stage reuse mechanisms to improve reclamation rates. • Water usage reduction: Reducing water usage through daily management.	Cumulative water consumption per unit of production capacity decreased by more than 35.5% compared to 2017.	◆ 34%[Note2]	Cumulative water consumption per unit of production capacity decreased by more than 35.5% compared to 2017.
	Production losses due to water restrictions: 0 wafers	◆ 0 wafer（片）	Production losses due to water restrictions: 0 wafers
	Average percentage in key water pollution indicators exceeds regulatory standards by 52% or more	◆ 63%	Average percentage in key water pollution indicators exceeds regulatory standards by 55% or more
Waste and Pollution Prevention • Circular economy: Increasing reuse rate of waste for more efficient resource utilization. • Source reduction: Continuously promoting waste reduction and increasing recycling rates. • Volatile organic compounds (VOCs): Continuously enhancing prevention equipment.	Number of environmental regulation violation cases: 0	◆ 0 cases	Number of environmental regulation violation cases: 0
	On-site audit and guidance rate for waste treatment vendors ≧ 98%	◆ 98.4%	On-site audit and guidance rate for waste treatment vendors ≧ 98%
	Volatile organic compounds (VOCs) reduction rate >92%	◆ 95.4%	Volatile organic compounds (VOCs) reduction rate >95%

Note 1: The annual carbon reduction target was not achieved as the 2025 market recovery drove greenhouse gas emissions beyond the levels projected in the original emission reduction plan.
Note 2: Due to an issue with the MBR membrane in the wastewater treatment system, the volume of reclaimed water was reduced, resulting in water consumption per unit of production capacity not meeting the target.

5.1 / Nature and Climate Management

Numerous scientific studies have shown that Earth's ecosystems have already been altered by human activities. For example, global warming has led to climate change and biodiversity loss. In response, Nanya Technology recognizes the dependencies and risk impacts of our operations (production site: Nanlin Science Park) and value chain on nature and climate. In 2023, we became an early adopter of the Task Force on Nature-related Financial Disclosures (TNFD). Following the TNFD and International Financial Reporting Standards S2 (IFRS S2), we announced a biodiversity policy and established a robust LEAP operational mechanism to assess nature- and climate-related dependencies and risks across our operations, upstream suppliers, and downstream customers. We also formulated response strategies (including transition plans) and actions, set management targets and indicators, and aim to mitigate impacts of risks.

Nanya Technology identifies material topics related to nature and climate through interviews with executives and relative personnel. These issues are managed through a robust corporate governance framework that facilitates two-way engagement between the Board of Directors and executive management, which in turn supports the implementation of nature and climate-related governance. This section outlines the key priorities of nature and climate management. For full details, please refer to our 2025 *Nature and Climate Report*.

Adaptation

In line with the disclosure framework, we developed strategies and actions to address nature- and climate-related issues in four aspects—governance, strategy, risk management, and indicators and targets. We aim to reduce the impacts of dependencies and risks, and our 2025 efforts are outlined below:

Governance

Management Strategies and Actions	2025 Implementation Status
• At the board governance level, nature and climate are included as agenda items of the Board of Directors, which serves as the highest governance body responsible for overseeing climate-related risks and opportunities. Climate transition considerations are integrated into Nanya Technology's overall business strategy. A Sustainable Development Committee, composed entirely of Board members is established under the Board and meets semi-annually to report on ESG and climate change-related performance, impact assessments, and progress toward the achievement of sustainability targets. In major capital expenditure decisions, the Board of Directors also incorporates low-carbon transition and energy strategies into its evaluation process, ensuring that the Company's resource allocation is aligned with long-term decarbonization targets and the sustainable development pathway.	• In 2025, Nanya Technology convened a total of six Board meetings and two Sustainable Development Committee meetings, with agenda items including the *Sustainability Report, Nature and Climate Report,* greenhouse gas inventory progress and planning, the continued promotion of Life Cycle Assessment (LCA) inventory mechanisms and post-assessment hotspot improvements, the IFRS Sustainability Disclosure Standards implementation plan, and the carbon fee self-initiated reduction plan. Major resolutions included the renewable energy procurement plan for 2027–2030 and the initiative to enhance guidance programs to promote a green supply chain. The total expenditure on the 2025 adaptation plans amounted to NT$1,392,763, accounting for 0.002% of the total expenditure during the reporting period.
• At the management level, responsibility lies in the planning and implementation of climate transition strategies, with relevant measures incorporated into annual operating plans and medium- to long-term strategies. Management regularly participates in quarterly meetings of the cross-departmental sustainability and Risk Management Steering Center. Based on targets approved by the governance body, management develops action plans, coordinates cross-departmental execution, and monitors progress. They also review the implementation of key performance indicators and propose adjustments based on execution outcomes. The Sustainability and Risk Management Division under the President Office is responsible for coordination and horizontal integration across working groups and departments.	• Each year, the Risk Management Steering Center evaluates the identified material nature- and climate-related risks. In 2025, response measures were implemented for 183 risks based on their risk levels, and the risks are continuously monitored.
• Efforts are underway to strengthen governance capabilities on nature and climate among the Board of Directors, management, and all employees.	• In 2025, Board members completed 111 hours of training, with courses covering a diverse range of topics such as ESG governance, economics, corporate governance, sustainable finance, carbon pricing mechanisms, climate change, power systems, risk management, and ESG-related laws and regulations.

Strategy

Management Strategies and Actions

- Climate-related risks and opportunities that can reasonably be expected to affect the entity's outlook.
- Information on the current and anticipated impacts of climate-related risks and opportunities on the entity's business model and value chain.

2025 Implementation Status

Short-term		Medium-term		Long-term	
Transition risk	Imposition of carbon fees	Transition risk	Imposition of carbon fees	Transition risk	Imposition of carbon fees
Physical risk	Extreme weather events such as typhoons, heavy rainfall, or flooding	Physical risk	Extreme weather events such as typhoons, heavy rainfall, or flooding	Physical risk	Extreme weather events such as typhoons, heavy rainfall, or flooding
Opportunities	Increasing the share of renewable energy and improving energy efficiency	Opportunities	Increasing the share of renewable energy	Opportunities	Increasing the share of renewable energy

Description of risks/ opportunities	Impacts on the business model		Impacts on the value chain	
	Current	Anticipated	Current	Anticipated
Imposition of carbon fees	Increase in operating costs	Actively promoting low-carbon transition policies, including implementing energy conservation and carbon reduction measures, as well as researching and developing low-carbon product design.	Due to increased upstream costs, adjustments have been made to downstream product pricing within the value chain.	Downstream customers obtain lower-carbon raw materials, facilitating the achievement of their low-carbon objectives.
Extreme weather events	No impact at present	Extreme weather events may have an impact on operations	No impact at present	Extreme weather events may have an impact on transportation and logistics
Increasing the share of renewable energy	The proportion of renewable energy used has reached 10%.	Target: The proportion of renewable energy used should reach 25% by 2030.	Organizing a sustainable supply chain seminar to share knowledge on renewable energy.	Supporting suppliers in procuring or jointly purchasing renewable energy.
Improving energy efficiency.	ISO 50001 Energy Management System has been successfully implemented.	Continuing to invest in and implement emerging energy-saving and carbon-reduction technologies to expand the scope of energy efficiency improvement measures to new plants.	• Organizing sustainability seminars and counseling programs to assist the supply chain in building energy management capabilities. • Some customers will include energy management in supplier evaluation criteria.	• Reducing operational energy consumption to better control over operating costs. • Positioning the Company as a preferred partner for corporate customers seeking energy management expertise, thereby facilitating downstream business integration within the value chain.

Strategy

Management Strategies and Actions	2025 Implementation Status

- Information on the impacts of climate-related risks and opportunities on the entity's strategy and decision-making.

Categories of Risks / Opportunities	Risk Description	Changes in the business model and resource allocation	
		Current	Anticipated
Physical risks	Extreme weather events impacting operations	The Company currently has established a comprehensive framework for water resource management and a contingency plan in place to address water restrictions.	Enhancing water recycling and reuse mechanisms, and strengthening the protection of water facilities and operational resilience.
Transition risks	Imposition of carbon fees	Implementing GHG Inventory and various carbon reduction and energy-saving initiatives, as detailed in Sections 5.1 and 5.2 of this report.	Actively promoting low-carbon transition policies, including implementing energy conservation and carbon reduction measures, as well as researching and developing low-carbon product design.
Opportunities	Enhancing Energy Efficiency	The ISO 50001 Energy Management System has been implemented.	Continuing to invest in and implement emerging energy-saving and carbon-reduction technologies to expand the scope of energy efficiency improvement measures to new plants.
	Increasing the share of renewable energy	The proportion of renewable energy used has reached 10%.	Enhancing the proportion of renewable energy usage over the next five years, with the related investment expected to account for approximately 0.39%–0.76% of capital expenditures.

- Impacts of climate-related risks and opportunities on the entity's current and anticipated financial position, financial performance, and cash flows.

- Based on the strategy for managing climate-related risks and opportunities, the expected impacts on financial performance and cash flows over the short, medium, and long term are described as follows:

Item	Short-term	Medium-term	Long-term
Proportion of Revenue Attributable to Carbon Fees Imposition	0.43%	0.14%	0.14%
Proportion of Revenue Attributable to Energy Efficiency Improvement Project Investments	0.04%	0.05%	0.05%
Proportion of Revenue Attributable to Renewable Energy Procurement Costs	0.39%	0.46%	0.76%

- Climate-related scenario analysis and assessment of climate resilience

Type	Key Assumptions	Selected Scenarios	Assessment of Impacts and Resilience Capacity
• Carbon Fee/Tax Imposition • Use of low-carbon energy	The proportion of renewable electricity consumption is expected to increase to 25% in the short term and reach 100% in the medium to long term.	2050 Net Zero Emissions Scenario (NZE)	1. Assessment of Impacts: Based on the results of the scenario analysis, under the 2050 NZE scenario, there is a risk of carbon fee imposition in the short, medium, and long term. In order to achieve the net zero emissions target, an increase in the share of renewable energy usage will be required, which will lead to higher operating costs. 2. Resilience Capacity: Nanya Technology has strengthened its GHG management system by establishing a cross-departmental Climate and Carbon Reduction Taskforce. Resources have been allocated to cover product carbon footprint assessment and comprehensive greenhouse gas management. Expenditures have been reallocated toward low-carbon energy sources. Over the next five years, the proportion of renewable energy usage is expected to increase, with related investments projected to account for approximately 0.39%–0.76% of capital expenditures.

Risk Management

Management Strategies and Actions	2025 Implementation Status
• In line with the Company's Risk Management Procedure, we assess the materiality of risks and opportunities arising from various scenarios related to natural factors and climate change. Relevant response plans are formulated, integrated into the Enterprise Risk Management (ERM) framework, and regularly confirmed by senior management. For more details regarding the comprehensive contingency plan formulated for nature- and climate-related risks, please refer to Section 2.2 Materiality Analysis. • Imposition of Carbon Fees: Following the Ministry of Environment's 2024 announcement of fee-charging rates of carbon fees, with implementation starting in 2025 and fee imposition beginning in 2026. • GHG emissions for Scopes 1, 2, and 3 are inventoried and verified annually to identify emission sources and prioritize management efforts. • Promoting product life cycle assessments and addressing emission hotspots.	• Key risks identified are primarily transition risks, including changes in the national energy structure, customer demand for low-carbon products, and the impact of fulfilling SBT commitments. These three mid-term risks are estimated to have a financial impact equivalent to approximately 3-4% of the Company's annual revenue. • In response to the imposition of carbon fees in 2026, a carbon fee rate of NT$300 per tCO_2e was applied, resulting in a payment of NT$132 million, accounting for 0.002% of 2025 operating revenue. • Major opportunities identified include product technology and new market development. As the net-zero trend continues, smart clean energy technologies are expected to drive growth in DRAM demand. According to IEA scenario analysis, the clean technology market is projected to triple by 2030. The Company will seize this opportunity by continuing to invest in innovative R&D resources, which accounted for 10.6% of total revenue in 2025. • Nanya Technology adopted Aqueduct 4.0, the water risk assessment tool developed by the World Resources Institute (WRI), to analyze water-related risk indicators across its seven operating sites, including two in Taiwan, one in China, two in the United States, one in Germany, and one in Japan. The assessment results indicated that none of the sites are located in areas classified as high risk in terms of overall water risk or water stress. Among Nanya Technology's operating sites, only the facilities in Taiwan serve as manufacturing sites, while all other locations function as sales and service offices. Based on the climate change water hazard maps published under the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), no risk of water shortage is projected under the RCP 8.5 mid-century scenario (2036–2065). Nanya Technology continues to promote water conservation and water recycling measures. Water consumption charges remain at the government's minimum applicable rate, with annual water fee increases limited to approximately 3%, resulting in a low impact on operating costs. • GHG emissions in 2025 will be fully inventoried and verified by May 2026. A 100% product environmental footprint inventory has been completed. Management plan improvements have been launched for the top three carbon footprint hotspots identified in 2025.

Indicators and targets

Management Strategies and Actions	2025 Implementation Status
• GHG-related Climate Indicators	GHG emissions of the Company are calculated in accordance with the methodologies specified by the GHG Protocol, and with reference to the emission factors published by the Ministry of Environment. The operational control approach is adopted to account for emissions from joint ventures and associated companies. This approach is selected as it reflects the Company's actual operational control more accurately, and ensures that GHG emissions data comprehensively and consistently represents the Company's operational impact. It also enables users to better understand performance related to climate-related risks and opportunities. The Scope 1, Scope 2, and Scope 3 GHG emissions generated during the reporting period of fiscal year 2025 are presented in Section II, "Mitigation – Greenhouse Gas Inventory," of this chapter.
• Compensation	To strengthen senior management's understanding of climate-related risk management, Nanya Technology links executive performance evaluation to climate goals. Through the sustainability assessment of senior executives, the Company regularly tracks the implementation progress of medium- to long-term targets. This performance is incorporated into executive performance evaluation and compensation review to assess the implementation progress of climate strategy targets.
• Basic Indicator Information for the Semiconductor Industry	Referring to the SASB Content Index in Section 9.4 of this report.
• Disclosure of Targets Related to Climate-Related Risks and Opportunities (Climate-Related Targets)	• Nanya Technology has established a strategic target of achieving carbon neutrality by 2050, supported by specific sub-targets and indicators, including reductions in GHG emissions and improvements in energy efficiency. The Sustainable Development Committee and relevant management units hold regular performance review meetings to monitor progress and ensure the gradual achievement of the established strategic target. • Nanya Technology responds to initiatives such as the Carbon Disclosure Project (CDP) and the Task Force on Climate-related Financial Disclosures (TCFD), as well as national policies on the 2050 net-zero emissions pathway. The Company references climate models and mitigation pathways developed by the Intergovernmental Panel on Climate Change (IPCC), and the Net Zero Emissions scenario of the International Energy Agency (IEA). Based on these frameworks, the Company has announced and committed to achieving carbon neutrality by 2050, in order to reduce exposure to climate risks, mitigate future carbon fee expenses, and enhance corporate resilience and sustainability competitiveness.

Mitigation

The main sources of greenhouse gas emissions in semiconductor fabs are electricity and perfluorocarbons (PFCs). Electricity is essential for operations and production, powering all machinery and equipment in the facility; perfluorocarbons (PFCs), used in manufacturing processes, are high global warming potential (GWP) greenhouse gases.

Greenhouse Gas Inventory

The Company conducts its GHG inventory with reference to ISO 14064-1, Ministry of Environment's Climate Change Response Act, Regulations for the Management of the Inventory, Registration, and Verification of Greenhouse Gas Emissions, Greenhouse Gas Emissions Inventory Guidelines, and the WBCSD/WRI GHG Protocol. Organizational boundaries are defined using the 100% operational control approach. At present, all Scope 1, Scope 2, and Scope 3 GHG emissions are verified by SGS, a third-party certification institution, in accordance with international standards.

The inventory covers all of Nanya Technology's production sites and 100% of our revenue. The main sources of GHG emissions are purchased electricity, steam and process emissions. In 2025, total GHG emissions amounted to 417,308 tCO_2e. Scope 1 emissions were 51,088 tCO_2e (accounting for approximately 12.24%) with no emissions resulting from combustion of biomass fuel. Scope 2 emissions were 366,220 tCO_2e (accounting for approximately 87.76%). The subsidiaries included in the consolidated financial statements reported GHG emissions of 88 tCO_2e in 2025. Scope 1 emissions amounted to 17.2 tCO_2e with no GHG emissions resulting from combustion of biomass fuel. Scope 2 emissions 1amounted to 70.8 tCO_2e.

GHG emission factors were based on those announced by Taiwan's Ministry of Environment in February 2024, as well as Taiwan's Energy Administration of the Ministry of Economic Affairs and Nan Ya Plastics' own emission factors for steam at their own facilities. Global Warming Potential (GWP) values were drawn from the IPCC Fifth Assessment Report. Compared to 2020, GHG emissions in 2025 decreased by 11.2% and the number of wafers produced decreased by approximately 22.8%. In terms of emissions per unit wafer, the 2025 emissions intensity was 0.89 $kgCO_2e$ /wafer area (cm^2), which is slightly higher than that of 2024. In terms of emissions intensity per unit of wafer output, the 2025 GHG emissions per unit of production capacity were 381 ($kgCO_2e$/kpcs), representing a 9.1% reduction compared to 2020.

Note 1: GHG emissions per unit area of wafer output.
Note 2: This inventory was conducted in accordance with the Ministry of Environment's 2024 Greenhouse Gas Emissions Inventory Guidelines.

Percentages of 2025 Scope 1 and Scope 2 Emissions by Category

Scope	Emission Source	Percentage of Emissions (%)
Scope 1	Process emissions	6.28%
	Fugitive emissions	3.31%
	Stationary combustion	2.65%
	Mobile combustion	0.00%
Scope 2	Electricity	86.00%
	Steam	1.75%

2025 Percentages of Scope 1 Greenhouse Gas Emissions

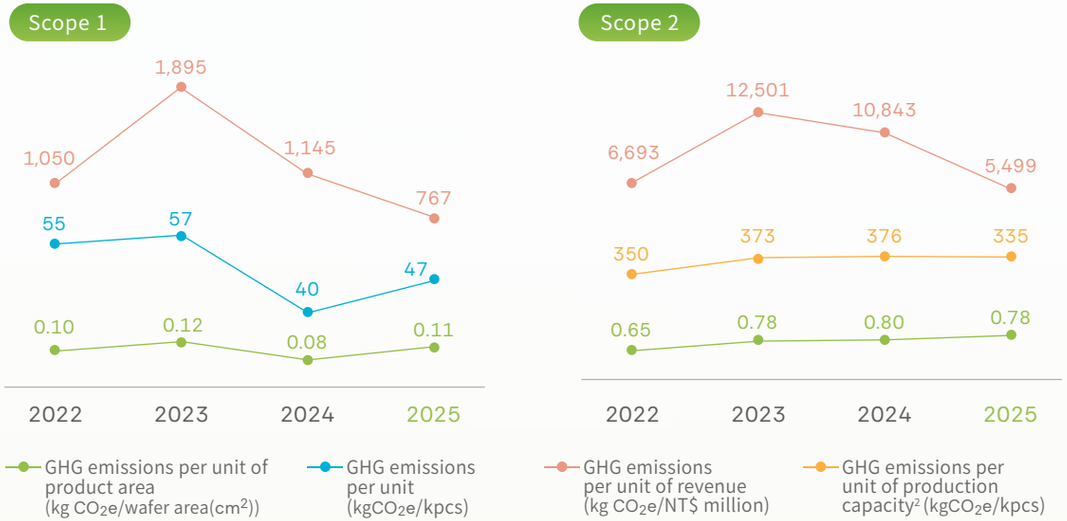
Scope	Type of Greenhouse Gas	Emissions (tCO_2e)	Percentage of Emissions (%)
Scope 1	Carbon dioxide (CO_2)	12,594.7253	24.64%
	Methane (CH_4)	165.8461	0.32%
	Nitrous oxide (N_2O)	1,959.728	3.83%
	Hydrofluorocarbons (HFCs)	13,282.9772	25.99%
	Perfluorocarbons (PFC)	15,009.18	29.37%
	Sulfur hexafluoride (SF_6)	846.1773	1.66%
	Nitrogen trifluoride (NF_3)	7,246.653	14.18%

Greenhouse Gas Emissions by Scope (parent company only)

Scope		2022	2023	2024	2025
Scope 1 (tCO_2e)		59,788	56,654	39,063	51,088
Scope 2 (tCO_2e)	location-based	385,177	385,700	386,774	403,575
	location-based	381,166	373,670	370,075	366,220
Scope 1+2 (location-based emissions) (tCO_2e)		444,965	442,354	425,837	454,663
Scope 1+2 (market-based emissions) ($tCO2_2$)		440,954	430,324	409,138	417,308
Scope 3 (tCO_2e)		940,525	816,878	817,588	1,290,161

Note 1: There are 9 types of PFCs emissions in total, including the process gases from carbon tetrafluoride (CF_4), perfluoro-propane (C_3F_8), hexafluoro-butadiene (C_4F_6), octafluorocyclobutane (C_4F_8), trifluoro-methane (CHF_3), difluoromethane (CH_2F_2), fluoromethane (CH_3F), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).
Note 2: Other direct emissions include CO_2, CH_4, N_2O from processes, and HFCs and SF_6 from non-process sources, such as fire extinguishers, refrigerators, freezers, and switch gear.
Note 3: Energy indirect emissions include electricity and steam consumption. The carbon emission factor for electricity is based on the Energy Administration of the Ministry of Economic Affairs' published value of 0.466 $kgCO_2e$/kWh, as of June 2, 2026.
Note 4: In accordance with the GHG Protocol Scope 2 Guidance (2015), GHG emissions are calculated and disclosed using both "Location-based" and "Market-based" methods respectively since we purchased renewable energy. In the above table, the location-based Scope 2 GHG emissions are calculated by multiplying the total electricity used in each area by the average emission factor for that area. On the other hand, market-based emissions are calculated by multiplying contracted renewable energy by their corresponding emission factors.

Scope 1+2 Greenhouse Gas Emission Intensity



To strengthen the completeness of the Company's value chain greenhouse gas (GHG) inventory, Nanya Technology conducted a Scope 3 GHG inventory in accordance with the Greenhouse Gas Protocol. Based on the results of the Scope 3 materiality assessment, 10 Scope 3 categories were selected for inventory. In 2025, total Scope 3 emissions amounted to 1,290,161 tCO_2e. The three largest emission categories were use of sold products at 898,627 tCO_2e (69.7%), followed by purchased goods and services at 240,753 tCO_2e (18.7%), and fuel- and energy-related activities not included in Scope 1 or Scope 2 at 89,203 tCO_2e (6.9%). Among these, emissions from seven categories—purchased goods and services, fuel- and energy-related activities not included in Scope 1 or Scope 2, upstream transportation and distribution, employee commuting, business travel, waste generated in operations, and use of sold products—were verified, with total emissions of 1,235,284 tCO_2e (96%). Through product innovation and supply chain management, the Company will continue to reduce Scope 3 emissions while actively collaborating with external experts to refine calculation methodologies and establish a digital platform to improve the quality of Scope 3 data.

Scope 3 Emissions in 2025

Scope 3 Category	Calculation Basis	Scope 3 Emissions (tCO_2e)
Purchased goods and services*	Carbon emissions from purchased primary materials and auxiliary materials used in the production process Note3	240,753
Fuel- and energy-related activities not included in Scope 1 or 2*	Upstream GHG emissions from purchased fuels and energy, covering extraction through delivery (B2B)	89,203
Upstream transportation and distribution*	Carbon emissions from transport of main and auxiliary materials from suppliers and packaging plants to the Company's facilities, calculated by ton-kilometers	2,426
Downstream transportation and distribution	Carbon emissions from product delivery from the Company's facilities to its customers, calculated by ton-kilometer	3,386
Investment	Carbon emissions from the investment associate company, Formosa Advanced Technologies, calculated based on equity ownership	35,280
Employee commuting*	Carbon emissions from company shuttles and employee commuting	2,766
Business travel*	Emissions from international flights for business trips	60
Waste generated during operations*	Carbon emissions from waste generated during production, including transportation and treatment of waste	1,449
Use of sold products*	Carbon emissions from electricity consumed during customers' use of products	898,627
Capital equipment	Investments in purchased equipment and buildings	16,211
Total		1,290,161

Note 1: Those marked with * indicate verified items[YC15.1].

Note 2: The main emissions factor sources for each Scope 3 category are as follows: For purchased goods and services: SimaPro 9.4.0.2 database (IPCC 2021 GWP 100). For fuel- and energy-related activities, upstream and downstream transportation and distribution, employee commuting, operational waste, and use of sold products: Product Carbon Footprint Platform. For business travel: ICAO Carbon Emissions Calculator. For investments: GHG emissions allocated based on equity share in investees.

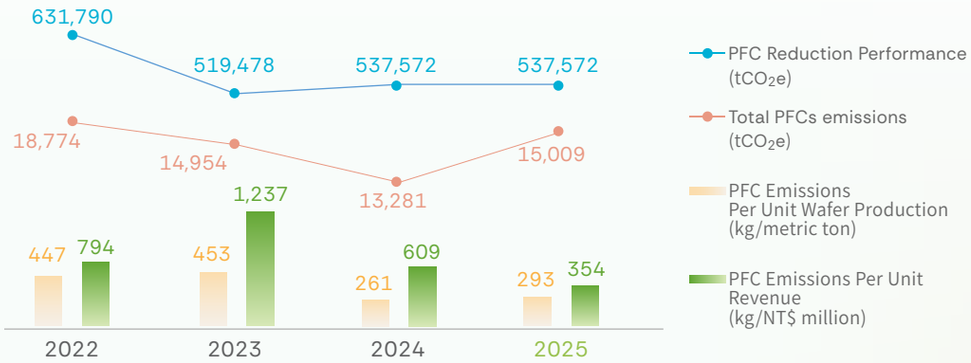
Note 3: The calculation methodology was revised by reclassifying emissions from outsourced packaging services, previously accounted for under "Processing of Sold Products," into the "Purchased Goods and Services" category.

Greenhouse Gas Reduction

The Company actively promotes voluntary emission reductions and participates in the annual voluntary GHG reduction program launched by the Industrial Development Administration, Ministry of Economic Affairs. Given the high global warming potential (GWP)[1] of perfluorocarbons (PFCs), we have implemented phased GHG reduction plans since 2006. During facility planning, we procured high-efficiency local scrubbers[2]. Currently, the thin-film and etching areas use burn-type PFC local scrubbers, which use high temperatures from combustion to destroy PFCs. To reduce fugitive PFCs emissions, Nanya Technology established local scrubber acceptance criteria for PFCs reduction rates: CF_4 gas treatment efficiency must exceed 90%, reduction rates of C_3F_8, C_4F_6, C_4F_8, CHF_3, CH_2F_2, and SF_6 must exceed 95%, and NF_3 reduction must exceed 99%. After installation, all local scrubbers undergo PFC abatement verification using FTIR[3] to align with future reduction trends.

Note 1 Global Warming Potential (GWP) refers to the warming impact of a gas relative to CO ☒ (with CO_2's GWP set at 1). In this context, high GWP refers to gases with a GWP greater than 675. (Based on GWP values from the IPCC Fourth Assessment Report (FAR)
Note 2 Local scrubber: Local Exhaust Gas Treatment Equipment
Note 3FTIR: Fourier-transform infrared spectrometer

PFC Emissions Trend



The reduction rate of process PFC emissions exceeded 93%

A cumulative reduction of CO_2e 2,226,412 tCO_2e

By installing high-reduction-rate local scrubbers for PFC during facility planning and implementing process PFC reduction initiatives, we set a reduction target of at least 90%. From 2022 to 2025, the reduction rate of process PFC emissions exceeded 93% each year, achieving a cumulative reduction of 2,226,412 tCO_2e—equivalent to the annual carbon absorption of 5,760 Daan Forest Parks[Note 4].

Note 4: Based on the estimation published by the Energy Administration, Ministry of Economic Affairs, that one Daan Forest Park absorbs 386.5 metric tons of CO_2 annually.

Carbon Disclosure Project

Upholding the principle of transparent disclosure, we have participated in the Carbon Disclosure Project (CDP), a nonprofit initiative, since 2009, annually disclosing data related to GHG emissions and reduction. From 2022 to 2025, we consistently achieved Leadership level ratings in the CDP Climate Change project. In addition to disclosing carbon emissions-related information through CDP and this report, Nanya Technology also voluntarily reports GHG emissions and reduction data through the Responsible Business Alliance (RBA) greenhouse gas reporting system, and provides product carbon emission data to enable customers to calculate the carbon footprint of their products.

5.2 Energy Resource Management

Energy Management

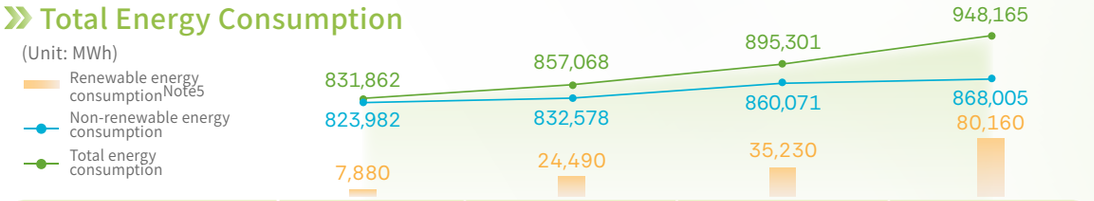
Energy Structure

The environmental impact and finite availability of fossil fuels have become critical concerns, making effective energy management an urgent priority. Nanya Technology primarily uses purchased electricity, steam, and natural gas, and does not generate energy in-house. Indirect energy use which results in GHG emissions includes raw material transportation within facilities, raw material suppliers' production activities, waste transportation/treatment, employee business travel, and commuting. In 2025, the primary energy sources used by Nanya Technology were purchased electricity (89.7% of total energy consumption), natural gas (6.4%), and steam (3.9%). Aside from a portion of purchased electricity sourced from renewable energy, the rest were non-renewable. Diesel was also used, but its consumption was extremely low—less than 0.03% of total energy consumption—so it was excluded from energy consumption statistics. We began purchasing renewable energy (electricity) in 2020. By 2025, renewable energy (electricity) accounted for 8.45% of the Company's total energy consumption. Accounting for 9.43% of total electricity consumption.

In 2025, production capacity [Note 1] increased by 11.2% compared to 2024. However, due to the continued implementation of advanced process technologies, total energy consumption increased. Thus Nanya Technology's total energy consumption (electricity + natural gas + steam) in 2025 reached 948,165MWh (3.41x 10^9 MJ), including 868,005MWh (3.13x10^9 MJ) of non-renewable energy and 80,160 MWh (2.89x10^8 MJ) of renewable energy—a 127.5% increase from 2024. Electricity consumption was 850,366 MWh(3.06x10^9 MJ[Note 2]), comprising 80,160 MWh (2.89x10^8 MJ) of renewable energy and 770,206 MWh (2.77x10^9 MJ) of non-renewable energy. Natural gas usage was 60,644 MWh[Note 3] (2.18x10^8 MJ, 5,794,914 m^3), and steam usage was 37,155MWh[Note 4] (1.34x10^8 MJ, 49,122 metric tons). In terms of energy intensity, energy consumption per unit of production capacity in 2025 was 0.87 MWh/kpcs, a 4.8% decrease from 2024.

Note 1: Production capacity is calculated using the output of good electronic chips; with the output of various products converted into the equivalent number of 4Gb chips. The unit of measurement is per kilopieces (kpcs).
Note 2: Based on the *Energy Product Unit Heating Value* Table updated in 2025 by the Energy Administration, Ministry of Economic Affairs for unit conversion, 1 kWh = 860 kcal = 3.6 megajoules; 1 MWh = 3,600 megajoules.

Total Energy Consumption



Year	2022	2023	2024	2025
The proportion of renewable energy in total energy consumption (%)	0.95%	2.86%	3.93%	8.45%

2022-2025 Electricity Consumption

	2022	2023	2024	2025
Renewable electricity (MWh)	7,880	24,490	35,230	80,160
Non-renewable electricity (MWh)	736,419	741,952	766,096	770,206
Electricity consumption per unit of production capacity (MWh/kpcs)	0.68	0.77	0.81	0.78

2022-2025 Natural Gas Consumption

	2022	2023	2024	2025
Natural gas consumption (m^3)	4,780,740	5,228,039	5,630,508	5,794,914
Natural gas consumption (MWh)	50,030	54,711	58,923	60,644
Natural gas consumption per unit of production capacity (m^3/kpcs)	4.4	5.2	5.7	5.3

2022-2025 Steam Consumption

	2022	2023	2024	2025
Steam consumption (metric ton)	49,620	47,482	46,340	49,122
Steam consumption (MWh)	37,532	35,915	35,051	37,155
Steam consumption per unit of production capacity (metric ton/kpcs)	0.046	0.047	0.047	0.045

Note 3: The electric energy of natural gas is calculated as 1 m^3 = 10.465 kWh (based on the *Energy Product Unit Heating Value Table* updated by the Energy Administration, Ministry of Economic Affairs, in 2025; 1 kWh= 860 kcal, 1 m^3 = 9,000 kcal).
Note 4: The steam used on-site is converted into saturated steam at 132.88 ℃ . According to the saturated steam table, 1 metric ton of steam equals to 650,500 kcal/metric ton, which is equivalent to 756.4 kilowatt-hours of energy (based on the conversion rate of 1 kWh = 860 kcal).
Note 5: Renewable energy used on-site is green electricity purchased from external sources. In 2020, only certificates were purchased; from 2021 onward, electricity and certificates are purchased in bundle.

Nanya Technology has developed an Energy Review Management Procedure to effectively manage its energy use and consumption. This procedure allows the Company to assess conditions of energy use and consumption, identify major energy-consuming operations and energy-saving opportunities, establish controls, and set measurable improvement targets to achieve energy conservation benefits. The process begins with creating an energy review checklist, calculating energy consumption by equipment unit, identifying major energy-consuming equipment, establishing energy baseline data, and setting suitable performance indicators to achieve specific energy-saving goals. The effectiveness of energy-saving initiatives is then regularly evaluated. In addition, monthly meetings are held to audit energy reviews. After we evaluate factors such as cost of improvements, energy-saving potential, equipment lifespan, regulatory requirements, and implementation difficulty, priorities are set and energy-saving plans are launched accordingly. Results are reported and future goals are approved at annual executive review meetings. Furthermore, the Company continually explores new energy-saving technologies and applications through external seminars and training, internal forums, and other means.. We continue to invest in R&D to introduce innovative energy-saving solutions and to reduce energy consumption. For example, in 2021, we completed the implementation of smart controls for our chilled water system, investing NT$49.9 million and significantly reducing power consumption by 18%. In 2024, we invested NT$23 million to replace the ceramic zeolite rotor of the VOCs air pollution and exhaust gas treatment system with fiberglass rotors, resulting in a significant 50% reduction in natural gas consumption.

Renewable Energy and Usage Planning

In terms of renewable energy usage, Nanya Technology implements planning and execution in the following three key phases.

Phase 1: In-house evaluation and pilot implementation.

In 2020, Nanya Technology purchased 362 Taiwan Renewable Energy Certificates (T-RECs) via the renewable energy trading platform. The Company began assessing available space at existing facilities and installed a 27.36 kW rooftop solar PV system on a new building, which was completed and commissioned in 2022. The system generated 25 MWh in 2025 (sold to Taipower). Future new facilities will fully utilize land resources and consider the installation of green energy equipment.

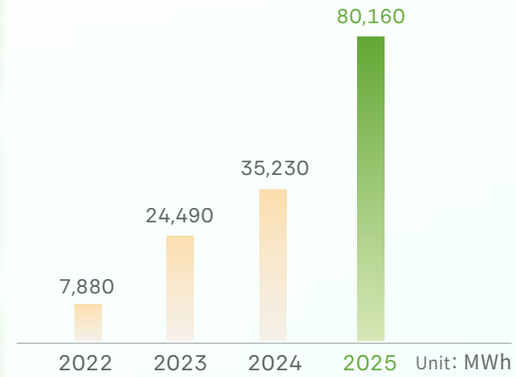
Phase 2: External collaboration.

Through external partnerships, Nanya Technology collaborated with renewable energy sellers to obtain larger electricity supply. We adhered to regulatory requirements, and the usage gradually soared. In 2025, the Company used 80,160 MWh (2.89×10^8 MJ) of externally purchased solar power, accounting for 9.43% of the Company's total electricity consumption. Total investment amounted to NT$420.3 million, and carbon emissions were reduced by 37,996 metric tons[Note 1].

Phase 3: Aligning with international standards and achieving net zero.

In alignment with global initiatives such as SBT and RE100, Nanya Technology has set a target for renewable energy to account for 25% of total electricity consumption by 2030. The Company will pursue transfer supply contracts from large-scale renewable energy projects as it moves toward 100% renewable energy use.

2022–2025 Renewable Energy Usage



Note 1: CO_2e emissions from electricity use are calculated using the most updated emission factor in 2024 published by the Energy Administration, Ministry of Economic Affairs: 0.474 $kgCO_2e/kWh$.

Enhancing Energy Usage Efficiency

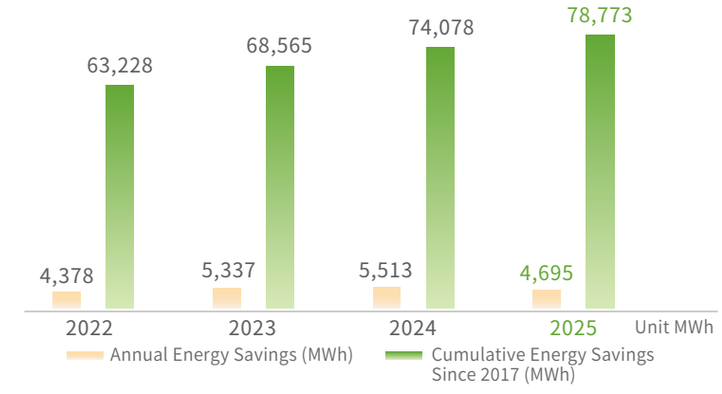
To effectively reduce the environmental impact of the greenhouse effect, Nanya Technology integrated energy conservation into its facility design from the outset, adopting energy-saving technologies such as a dual-temperature chilled water system, waste heat recovery and utilization in freezers, and more. Over the years, we continue to introduce various energy-saving technologies, improving equipment through various mindsets including automated controls, enhanced equipment performance, energy recovery, and improved production management. Additionally, energy conservation is prioritized during the equipment design and procurement phases. Nanya Technology implemented the ISO 50001 Energy Management System in 2018 and completed its certification (current validity period: November 28, 2024 – November 27, 2027). To strengthen employee awareness of energy conservation, we provide training programs to equip designated energy management personnel in each department. These trained individuals support the implementation of departmental energy management tasks and energy-saving initiatives. Currently, there are 110 qualified energy management personnel, and a total of 413 participants have completed training over the years.

In 2020, the Company invested NT$21.8 million to build an energy management platform—the Energy Consumption Real-Time Monitoring Platform, which enables statistical analysis and smart energy-saving management of system operations. It also supports energy consumption management and improvements across various organizations and machineries. In 2023, energy baseline data was added to optimize the system's functionality, enabling more timely analysis of equipment energy consumption and stronger oversight. Optimization was completed in June 2024. In addition, water and energy conservation experts are assigned with help from the Energy and Water Conservation Service Team within participating companies of the Group and collaborate with specialists from other Group companies to provide on-site guidance and conduct inspections at various facilities, including those of the Company. These efforts span Formosa Plastics Group's facilities in northern, central, and southern Taiwan, with the goal of enhancing water and energy conservation performance across all facilities through expert audits and targeted support.

Nanya Technology's energy-saving target for 2030 is a cumulative energy savings of 103,000 MWh/year from 2017 to 2030. In 2025, NT$28.26 million was invested in 30 energy-saving projects, generating a total energy-saving benefit of 4,695 MWh[Note 1]/year (1.69x10^7 MJ/year). For 2026, the Company plans to implement 28 projects (25 new and 3 continuing), with an estimated savings of 4,637 MWh/year (1.67x10^7 MJ/year).

Energy Conservation Programs Completed in 2025	Energy Conservation Benefits	Type of Energy Saving	Reduction Location	Calculation Method	Carbon Reduction (tCO_2e)
Energy conservation from process equipment management (10 programs)	4,695 MWh/year (1.69x10^7 MJ/year)	Electricity	Equipment	1. Difference in actual measured energy consumption before and after improvement. 2. Rated energy consumption x difference in operating hours.	2,188
Energy conservation from non-process equipment management/improvement (10 programs)		Electricity	Equipment	1. Difference in actual measured energy consumption before and after improvement. 2. Rated energy consumption x difference in operating hours.	
Improvements to process equipment (3 programs)		Electricity	Equipment	1. Difference in actual measured energy consumption before and after improvement. 2. Rated energy consumption x difference in operating hours.	
Energy conservation from lighting improvement and management (5 programs)		Electricity	Lighting	Rated energy consumption of lighting x difference in operating hours.	
Energy conservation from chillers (1 program)		Electricity	Chillers	Difference in actual measured energy consumption before and after improvement.	
Energy conservation from CDA equipment (1 program)		Electricity	CDA dryers	Difference in actual measured energy consumption before and after improvement.	

Historical Performance in Energy Conservation



Energy Consumption Real-Time Monitoring Platform



Planned Energy Conservation Programs for 2026

Planned Energy Conservation Programs for 2026

- Energy conservation from process equipment management (11 programs)
- Energy conservation from improvements to process equipment (6 programs)
- Energy conservation from CDA equipment (1 program)
- Energy conservation from lighting improvement and management (3 programs)
- Energy conservation from non-process equipment management (3 programs)
- Energy conservation from improvements to non-process equipment (4 programs)

Estimated Energy Conservation Benefits

4,637MWh/year (1.67x10^7MJ/year)

Carbon Reduction (tCO_2e)

2,161MWh//year

Note 1: Energy consumption reductions are primarily calculated based on the measured consumption of equipment before and after improvement. Where measurements are not feasible, calculations are based on the difference in rated energy consumption, multiplied by operating hours.

Energy Conservation Program Highlights

• CDA Dryer Upgraded from Heatless Type to Heated Type

Saving 1.28 Million kWh Annually

Three existing heatless PCDA dryers in the plant use compressed dry air as the regeneration air source during the regeneration process, with an air consumption of 1,305 CMH. The corresponding power consumption of the compressed air system is 126,846 kWh per month. The three heatless dryers were all replaced with heated dryers, reducing regeneration energy consumption from 126,846 kWh per month to 20,228 kWh per month. This results in monthly electricity savings of 106,618 kWh, equivalent to annual savings of 1,279,416 kWh, representing an energy reduction of 84%.

• MAU Reheat Coil Heat Recovery

Saving 0.675 million kWh Annually

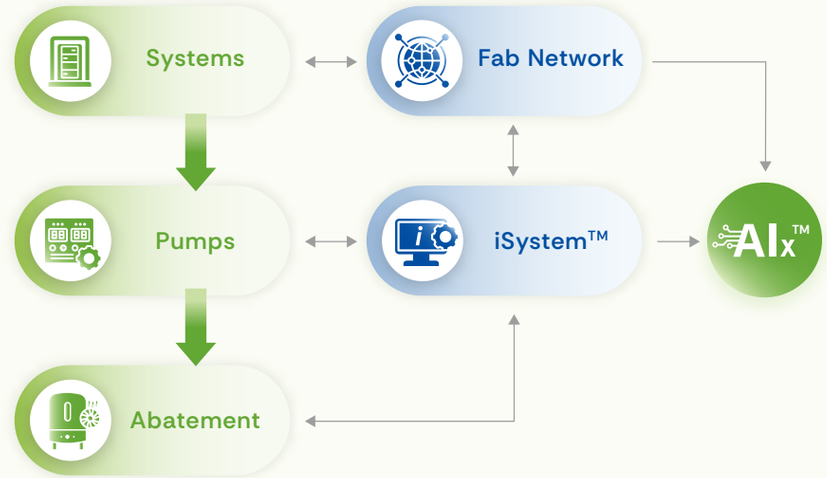
1. For the MAU system, the heat exchange coil operates in sequence: first-stage heating, cooling, dehumidification, and second-stage heating.
2. The second-stage heating coil operates at a constant temperature throughout the year, while the first-stage heating coil operates only during the winter period from December to March.
3. After heat exchange in the second-stage coil, the outlet water temperature is approximately 25°C. As the ambient temperature in summer often exceeds 26°C, the outlet water can be routed back to the MAU inlet cooling coil to pre-cool the incoming outdoor air. This reduces the cooling load on the downstream cooling coil, thereby lowering the chiller system load.
4. Annual electricity savings: 674,816 MWh/year

Implementation of Low-Carbon Processes: Reduction Achievements and Monitoring Mechanisms

To advance green manufacturing and enhance resource efficiency, Nanya Technology consistently leverages a data-driven approach to strengthen low-carbon operation and energy management. Partnering with supplier Applied Materials, Nanya Technology implements ECO Services, a sustainable process equipment solution that integrates the IoT-enabled smart energy control system ECO iSystem ™ Controller and the real-time centralized monitoring platform ECO Analytics Dashboard.

The ECO iSystem ™ Controller synchronizes the production schedules with the operation of process support equipment during idle periods, and automatically optimizes energy usage of process support equipment. The ECO Analytics Dashboard, on the other hand, provides real-time monitoring, centralized management, and visualization of the energy usage and savings performance of process support equipment, thereby facilitating continuous tracking and optimization. To facilitate the development of subsequent optimization plans, Nanya Technology employs KPI-based dashboards and alert mechanisms, enabling real-time verification of energy-saving performance, detection of operational anomalies, and comparative analysis of the performance across connected equipment groups and machines.

The ECO iSystem ™ Controller has been deployed across 54 CVD and etch process machines, as well as associated abatement systems, effectively reducing process gas consumption while strengthening day-to-day energy management. As of the end of 2025, oxygen consumption had been reduced by approximately 180,000 cubic meters, while fuel consumption had decreased by approximately 90,000 cubic meters, equivalent to a reduction of approximately 300 tCO_2e emissions. In addition, the real-time monitoring of the ECO Analytics Dashboard allows ongoing verification of energy-saving benefits and flexible optimization adjustments in response to changing operating conditions.



Compared with existing energy-saving functions, ECO Services delivers an additional 2–5% improvement in energy-saving benefits while maintaining process stability. These continuous improvement efforts as well as real-time monitoring and operational insights, empower the energy performance of Nanya Technology's equipment and its overall energy management expertise.

Looking ahead to 2026, Nanya Technology plans to further expand deployment scope while evaluating the implementation of related sustainable equipment and technologies at its new 5A facility. By incorporating low-carbon design principles into new facility planning and implementing real-time monitoring to expand the application of proven solutions, Nanya Technology will continue to improve energy performance and steadily balance business growth with environmental sustainability.

Water Resource Management

Due to global climate change, rainfall in different regions of Taiwan has become increasingly polarized, resulting in both flooding and water shortages occurring simultaneously. Therefore, as a key member of the semiconductor industry, Nanya Technology has long been attuned to the water scarcity risks brought about by global climate change and deeply understands the impact that climate change and w ater can have on operations. To mitigate its environmental impact and the risks associated with water shortages, Nanya Technology continues to advance water conservation initiatives and is further committed to water reclamation and reuse. In 2023, the Comp any adopted the Alliance for Water Stewardship Standard (AWS) and, following its 2023 assessment, was awarded AWS's highest certification level, Platinum, in 2024. From the source of every drop of w ater to its use and final dischar ge, Nanya Technology practices pragmatic and eff ective water management to protect the ecosystem. Cherishing every drop of water, we continue to improve water usage efficiency while actively aligning with the international AWS standards and implementing the Five Outcomes to achieve sustainable water management in a systematic and ong oing manner.

Nanya Technology's efforts in water resource management have been recognized by international environmental evaluation bodies. From 2022 to 2023, the Company received an "A" leadership rating in the CDP Water Security category for two consecutive years. From 2022 to 2024, we also received the Taiwan Corporate Sustainability Award's Water Resource Management Leadership Award for three consecutive years, affirming its commitment to tackling climate change and water resource management while contributing to global sustainability goals.

Nanya Technology's Water Management Policy

- A: Through employee training, organizational planning, and the implementation of water conservation and emergency response systems, we continuously optimize water resource management across our facilities.
- B: We disclose quantifiable water performance indicators, with a core objective of continuously enhancing water usage efficiency.
- C: Aiming to improve effluent quality, we continuously enhance our water treatment systems to reduce the impact of our operations on local basins.
- D: Through environmental education and continuous monitoring, we strive to safeguard the health of vital water-related areas.
- E: We have implemented comprehensive environmental hygiene measures and drinking water quality systems across our facilities to reduce the risk of infectious disease.

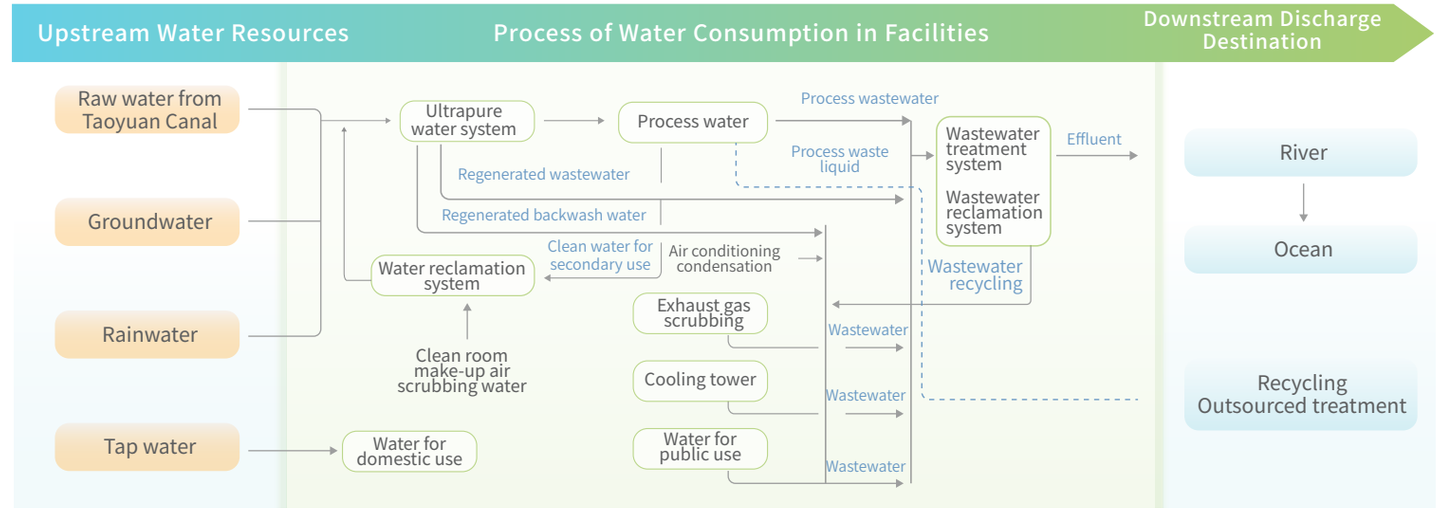
Nanya Technolog y's water resource management policies and requirements apply to all operational, R&D, and manufacturing sites. Matters related to water usage, conservation, and risk assessments are compiled annually and reported to the Board of Dir ectors for review.

- Actively managing water indicators and implementing conservation in operations to maximize the use of water resources.
- Assessing risks and opportunities under climate change to mitigate the impact of water scarcity.
- Engaging relevant stakeholders to promote awareness and conservation of water resources.
- Implementing a categorized wastewater treatment system as well as multiple reclamation and reuse processes to maximize water utilization efficiency.
- Complying fully with regulations and continuing to strengthen water treatment facilities to reduce the risk of environmental pollution.

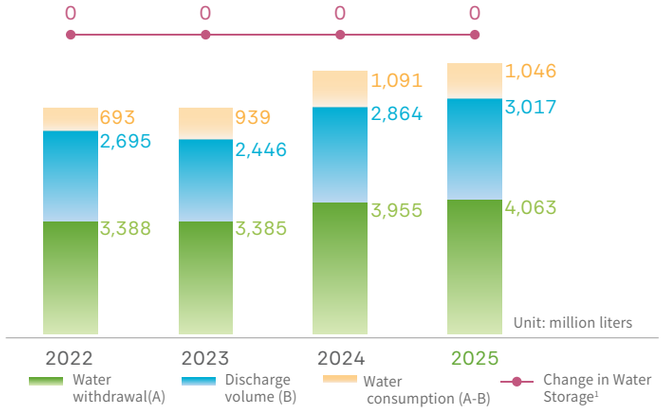
Water Resource Structure

Nanya Technology's annual total water withdrawal was 4,063 million liters, primarily sourced from Taoyuan Canal (approximately 97.7%, or 3,971 million liters), followed by well water (approximately 1.7%, or 69 million liters), and tap water (approximately 0.6%, or 23 million liters). Rainwater has been recycled and reused over the years, but it was temporarily suspended in 2025 due to equipment changes for the expansion of new facilities. Nanya Technology's total water withdrawal in 2025 increased by 2.74% compared to 2024. The production capacity in 2025 increased by 11.2% from 2024. In terms of water usage intensity, water consumption per unit of production capacity in 2025 was 3.71 kiloliters/kpcs, a 7.6% decrease from 2024. Total ultrapure water consumption in 2025 was 3,619 million liters, a 3.9% increase compared to 2024. In terms of water usage intensity, ultrapure water consumption per unit of production capacity was 3.31 kiloliters/kpcs, a 6.6% decrease from 2024.

Nanya Technology's Water Usage Structure

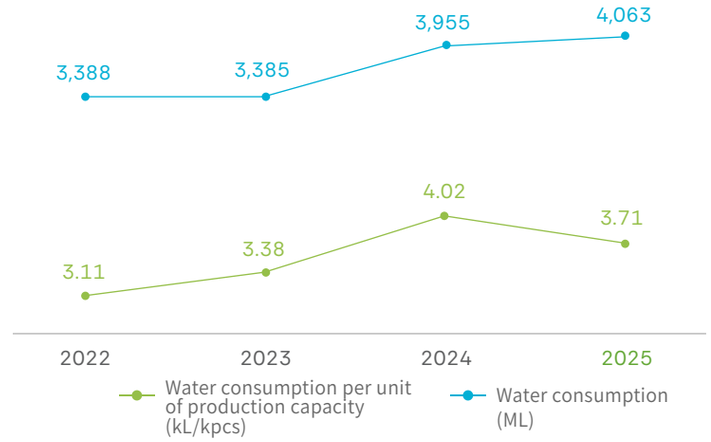


Nanya Technology's Water Consumption

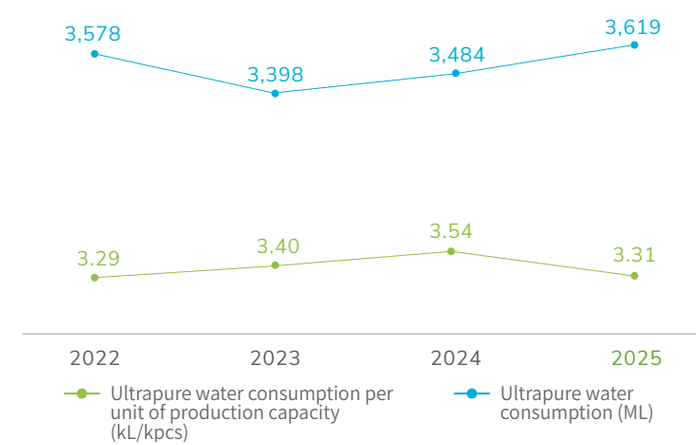


Note 1: Change in water storage = storage on 12/31 of the year - storage on 1/1 of the same year

Water Consumption Trend



Ultrapure Water Consumption Trend



Water Resource Risk Management

Water Risk Factors	Assessment Boundaries	Stakeholders Considered	Assessment Methodology	Assessment Results and Responses
Water-related dependencies and impacts	• Nanya Technology's operational sites • Upstream supply locations • Downstream shipment locations	• Local residents • Government agencies • Suppliers • Customers	• The WRI Aqueduct Tool of the World Resources Institute (WRI). • The IPCC AR5 RCP8.5 scenario maps published by the Disaster Risk Adaptation (hereinafter referred to as "DR.A") platform of the National Science and Technology Center for Disaster Reduction (hereinafter referred to as "NCDR"). • We referred to the System of Environmental-Economic Accounting (SEEA) as we identified dependencies and impacts based on provisioning, regulating and support, and cultural services through interdepartmental workshops.	• A risk simulation analysis of water sources found that 91.5% of the Company's water supply comes from the Taoyuan Canal, which is fed by Shimen Reservoir. The current water stress level is low. Both the short-term and long-term (up to 2050) water stress risks are categorized as medium-to-low (10-20%), indicating that it is not located in a water-stressed region. • An assessment of 31 Taiwan-based supplier locations showed that 22 are situated in high-risk areas for flooding and drought (levels 4 and 5), mainly concentrated in central and southern Taiwan. • Among 23 shipment locations assessed for climate change risk (flooding), 15 were identified as high-risk. • Water is a critical ecosystem service on which Nanya Technology depends. The substantial water use in semiconductor manufacturing can also lead to additional impacts—from the competition for water with nearby communities or businesses to possible ecological degradation from overconsumption. • Nanya Technology discharges wastewater during its operations. Even if the wastewater discharged is compliant with regulations, it may still exceed the local environmental capacity, leading to biodiversity loss. • A supplier water resource sharing meeting was held in October 2025 to assist suppliers in water management and conservation measures. Around 40 suppliers attended the event. • In 2025, a total of 19 suppliers underwent on-site audit and guidance. 3 of them completed water conservation programs, resulting in annual water savings of 40 million liters. In 2026, 25 suppliers are expected to receive audits and support, with estimated annual water savings of 100 million liters.
Future Water Availability	• Nanya Technology's operational sites	• Local residents • Government agencies	• According to the TCCIP Climate Change Water Hazard Map, the Company will not face the risk of water scarcity under the RCP 8.5 scenario in the middle of this century (2036-2065).	• In northern Taiwan, the annual average rainfall is projected to increase by 12%, while spring rainfall may decrease by 5%. The Company's backup water supply exceeds the projected reduction in rainfall. Even if the water supply from the Shimen Reservoir declines during spring due to reduced precipitation, assessments show that production needs can still be met, with no risk of water shortage. • The Shimen Reservoir, which supplies water to Nanya Technology, provides about 800 million liters per day. The Company's daily water consumption is approximately 11 million liters, representing a regional water impact level of 1.38%. • We coordinate and communicate with the Irrigation Agency and the Northern Region Water Resources Branch of the Water Resources Agency. In times of water scarcity, we cooperate with government contingency plans to ensure effective utilization of water resources, reduce the impact of water shortages in supply basins, and maintain supply stability.

Water Risk Factors	Assessment Boundaries	Stakeholders Considered	Assessment Methodology	Assessment Results and Responses
Future Water Quality	• Nanya Technology's operational sites	• Local residents • Government agencies	• Implementation of sustainable water management (AWS)	• All wastewater is separately collected and discharged to the appropriate wastewater treatment facilities. Over 20 distinct pipelines are used to segregate and convey different types of wastewater. To ensure that the quality of discharged water meets standards, real-time monitoring is conducted in coordination with the Environmental Protection Department, with sampling and analysis conducted every quarter by external contractors to further strengthen our wastewater quality control. • During typhoon season, sediment buildup during reservoir discharge increases turbidity in the Shimen Reservoir, which can affect water supply. However, the reservoir's multi-level intake project was completed in 2021, significantly mitigating high turbidity. In addition, a rapid sedimentation tank has been installed at our facility, capable of treating raw water with high turbidity (<10,000 NTU). Therefore, the risk of future water supply disruptions caused by water quality and high turbidity is considered low.
Local Stakeholders	• Nanya Technology's operational sites	• Local residents	• The Shimen Reservoir, which supplies water to Nanya Technology, provides about 800 million liters per day. The Company's daily water consumption is approximately 10 million liters, representing a regional water impact level of 1.25%.	• The Company's production water primarily comes from the Taoyuan Canal, drawn directly under a water supply agreement with the Irrigation Agency, which manages the Irrigation Aqueduct. The agreement stipulates the volume of water to ensure supply stability and permits withdrawals beyond contract levels in emergencies, increasing water-use flexibility. • The Environmental Quality Supervision Committee: Every quarter, Nanya Technology commissions a third-party organization to conduct monitoring surveys on the local ecology, hydrology, and air quality around the facilities. The survey results are then reported to the Environmental Quality Supervision Committee. • Nanya Technology, in collaboration with nearby Formosa Plastics Group facilities, has established an emergency response organization for water shortages. Through this organization, facilities can coordinate emergency water allocation and support. To date, there have been no incidents of production losses due to water shortages.
Water-Related Regulations	• Nanya Technology's operational sites	• Government agencies • Local residents	• Regulation on water conservation charges.	• In 2025, the Company achieved a water reclamation rate of 95.2% [Note], verified by a third-party certification body. This exceeds the government's industry benchmark range of 50%-85% and qualifies for the lowest announced rate. The estimated annual water fee increase is only around 3%, posing a minimal impact on operational costs. • Nanya Technology communicates with local residents and the public by disclosing information related to its water management, including real-time monitoring of effluent discharge, to address public concerns.

Note: The water reclamation rate for water conservation charge calculation is based on the formula specified by the Industrial Development Administration, Ministry of Economic Affairs.



Nanya Technology mainly sources its water from Shimen Reservoir, drawing it through the Taoyuan Canal for production use following treatment. The water is drawn independently using a gravity-fed system, which operates by gravity flow, ensuring no impact on the water resource ecology or other usage. Additionally, rainwater is collected for production use, and tap water is supplied for domestic purposes. Nanya Technology currently operates a single manufacturing facility located in New Taipei City, Taiwan. Due to the highly uneven geographic and seasonal distribution of rainfall in Taiwan, regional and seasonal droughts are common. Using the World Resources Institute's Aqueduct Tools, Nanya Technology assessed its water source—the Taoyuan Canal, which is fed by the Shimen Reservoir and supplies 97.7% of the Company's water. The current water stress level is low, and both the short-term and long-term (up to 2050) water stress risks are categorized as medium-to-low (10–20%). According to the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), under the RCP 8.5 scenario for the mid-century period (2036-2065), northern Taiwan is expected to see a 12% increase in annual average rainfall, though spring rainfall will decrease by 5%. In summary, the water sources at Nanya Technology's operational sites are located in areas with medium-to-low short-term risk, while the number of consecutive dry days in northern Taiwan may increase by 1.2-2 days on average in the future. The Company uses a large amount of water for its manufacturing processes—approximately 11 million liters of water daily. An increase in water shortage or droughts can elevate the risk of operational disruption.

In line with international water security and management standards, Nanya Technology continues to strengthen its water management system and expand its water recycling capacity. The Company has established a robust contingency plan to mitigate the immediate impacts of short-term drought. The facility has a 43-million-liter water reservoir, a 0.5-million-liter detention basin for effective rainwater reclamation during the rainy season (temporarily suspended during FAB 5A construction), and seven wells. Nanya Technology also formed an emergency response organization for water shortages with neighboring plants of Formosa Plastics Group for mutual water-sharing support. Improvement work has been completed at the Shimen Reservoir watershed. The risk of service disruption due to turbidity from heavy rainfall has decreased. The Company can handle raw water turbidity up to 10,000 NTU, enabling it to manage most conditions. In terms of water reclamation and reuse, the effective treatment of acidic/alkaline wastewater, hydrofluoric wastewater, and organic wastewater using dedicated reclamation equipment led to the total volume of reclaimed water reaching 5,530 million liters in 2025. Through internal adaptation capacity and water recycling systems, Nanya Technology can operate for up to 14 days without an external water supply. As of now, there have been no production losses due to water shortages.

Nanya Technology continues to improve standard procedures and processes. It assesses water-related risks through its environmental and operational risk management frameworks, promotes related improvement measures, and formulates contingency plans. These are regularly reviewed by the Sustainable Development Steering Center and the Risk Management Steering Center at quarterly meetings. Moving forward, Nanya Technology will continue to enhance our capacity for water use and management. Newly constructed plants will include water regeneration centers, storage reservoirs, and backup water sources to address the uncertainties of climate change.

Diversified Water Sources to Reduce Production Risks

As part of the FAB 5A expansion, the Company has submitted a new application to the Taiwan Water Corporation for municipal water to be supplied for processes, with a daily volume of 11 million liters. Plans are also in place to construct 8 additional groundwater wells outside the facilities, providing 7.2 million liters per day. In addition, the municipal water supply from the Taishan facility will be integrated, along with upgrades to related equipment and pipelines, contributing another 2 million liters daily. The Company continues to monitor government initiatives for regenerated water. As there are currently no suitable regenerated water programs available in the vicinity of our facilities, we will remain attentive to future plans and adopt such initiatives when feasible.

Nanya Technology's Drought Response Mechanism

Water Situation Light	Blue (Normal)	Green (Water Supply Concern)	Yellow (Stage 1)	Orange (Stage 2)	Red (Stage 3)
Government Response Measures	Stable water supply	Enhanced water sourcing and moderately diversified distribution	Reduced water pressure during off-peak or designated hours	5-20% reduction in water supply to industrial users	Rotating or scheduled water suspension by zone or plant-wide
Nanya Technology's Response Measures	Water is drawn from the Taoyuan Canal to support production under normal conditions.	Water is supplied from the Taoyuan Canal, water reservoir, and 7 in-plant wells.	Water is supplied from the Taoyuan Canal, water reservoir, and 7 in-plant wells.	Water is supplied from the Taoyuan Canal, water reservoir, and 7 in-plant wells.	Water is supplied from the Taoyuan Canal, water reservoir, and 7 in-plant wells. If supply falls short, well water from the Group's Chang Gung Golf Course will be drawn to support water supply, coordinated by the corporate emergency response team.

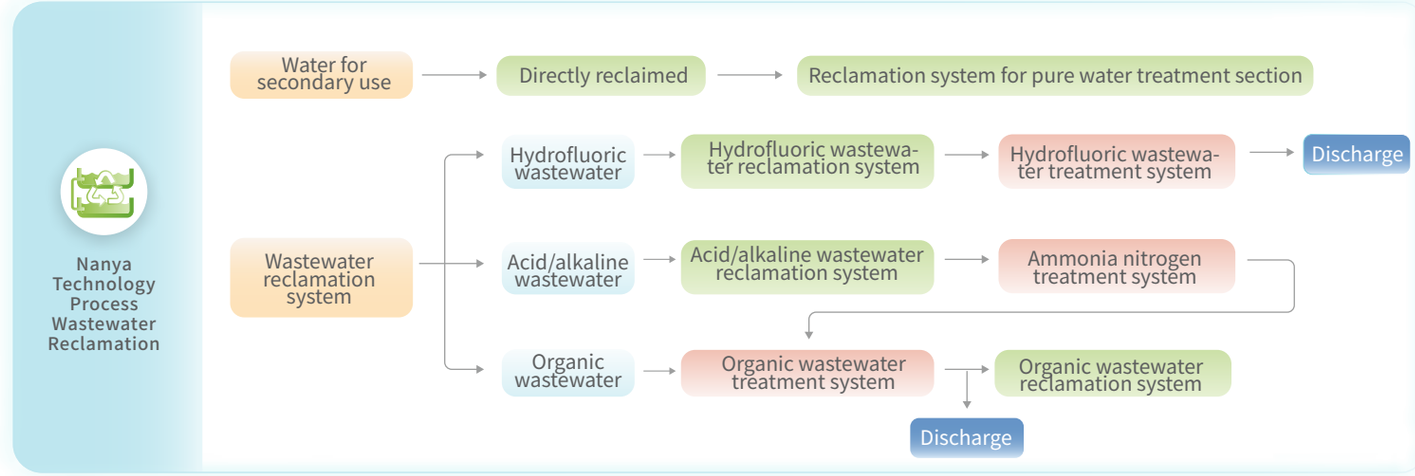
Water Resource Conservation

In terms of water management, Nanya Technology prioritizes reducing water consumption and enhancing reclamation and reuse, while also designing water-saving processes. To improve water use efficiency, Nanya Technology has set a long-term water resource management goal to reduce water consumption per unit of production capacity by 37% by 2030 compared to 2017 levels. It is hoped that improvements to production processes and equipment can enhance water usage efficiency and water reclamation volume, as well as reduce water consumption. Water conservation efforts span all operational, R&D, and production sites, with the current focus outlined as follows:



Nanya Technology actively implements a variety of water-saving measures and has intensified its water reclamation efforts in recent years. Our facility currently has reclamation systems in place for acidic and alkaline wastewater, hydrofluoric wastewater, and organic wastewater, complemented by various conservation initiatives. The reclamation rate continues to improve annually. In 2023, improvements and expansions to the hydrofluoric wastewater reclamation system at FAB 3AN were completed, along with the construction of a new COD and total nitrogen treatment system for hydrofluoric wastewater, which includes water reclamation functionality. We estimate these efforts will increase annual reclaimed water volume by 522 million liters. In 2025, the combined reclaimed water volume from wastewater reclamation systems, process reclamation systems, and pure water process wastewater reclamation reached a total of 5.53 billion liters, accounting for 136.1% of total water withdrawal.

Nanya Technology's Process Wastewater Reclamation Flow



In 2025,
four water conservation projects were completed, delivering annual water savings of **8,702** thousand liters per year.

Project Description	Water Saving Effectiveness (kL/Year)	Share of Annual Water Savings
Gas & Chemical Department—water conservation improvements for empty barrel cleaning machines	456	5%
CMP empty barrel cleaning tank parameters optimized for water conservation management	376	4%
Adjustment of DAS local scrubber water replacement frequency	5,796	67%
Reduction in water usage of backup scrubbers through Edwards scrubbers	2,074	24%

In 2026,
five water conservation projects are planned to be continued, with estimated annual water savings of **258,121** thousand liters per year.

Project Description	Estimated Water Saving Effectiveness (kL/Year)
Introduction of OWWR-II reclaimed water into the pure water system to increase reclaimed water use	45,000
Expansion of hydrofluoric wastewater reclamation system	180,000
Water savings from SDS filter cleaning process parameter adjustments	31
Improving water saving in acid exhaust scrubber towers	2,190
Adjustment of EH DAS Scrubber water replacement frequency for water savings	30,900

Collaboration and Dialogue

In addition to ongoing internal water resource management and evaluations, Nanya Technology promotes water conservation and reclamation. The Company engages in communication, dialogue, and collaboration with various stakeholders through a variety of channels. It also communicates with government agencies to learn about national water policies and infrastructure plans, facilitating further collaboration and fulfilling corporate responsibility. Nanya Technology also shares experiences with suppliers and provides guidance to encourage water conservation across the supply chain and create shared social value. Furthermore, we also communicate with local residents and the public, and disclose information about its water management to alleviate their concerns.

Subject	Communication, Dialogue, and Collaboration
Government Agencies	1. We engage with the Semiconductor Industry Association and regularly attend Water Resource Diversification Management and Cooperation Platform meetings held by the Water Resources Agency to exchange ideas, communicate, and collaborate on water-related policies. 2. We coordinate and communicate with the Irrigation Agency and the Northern Region Water Resources Branch of the Water Resources Agency. In times of water scarcity, we cooperate with government contingency plans to ensure effective utilization of water resources, reduce the impact of water shortages in supply basins, and maintain supply stability. 3. We attend meetings on road surface improvement and pipeline coordination meetings hosted by Taoyuan City Government's Office of Road and Accessory Maintenance to learn whether construction interfaces might affect water supply. 4. In coordination with the Irrigation Agency, we participate in the Flow Monitoring Implementation Project by installing electronic flow meters with RS-485 transmission interfaces at the Taoyuan Canal intake point. These devices transmit real-time and cumulative water flow data to the Agency's cloud network, enabling real-time monitoring and accurate tracking of water usage. This facilitates precise water allocation by reservoir authorities and helps prevent water resource waste.
Suppliers	1. Suppliers are required to sign a Corporate Social Responsibility Commitment. The Supplier Risk Assessment (SAQ) includes sections on water resource management and TCFD-aligned physical risk identification. A cross-comparison was conducted using IPCC AR5 RCP8.5 scenario maps published by the National Science and Technology Center for Disaster Reduction (NCDR) through its Disaster Risk Adaptation (DR.A) platform. Water resource risks were assessed with 19 significant suppliers to ensure they have robust water management measures and contingency plans in place for water shortages. On-site audits were conducted for high-risk and key suppliers, with corrective guidance provided to address any identified deficiencies. As a result, the Company has determined that physical risks of climate change pose limited impact to Taiwanese suppliers and are unlikely to cause production disruptions. 2. Through meetings with suppliers, the Company shares knowledge, engages in dialogue, and offers guidance on water management and conservation measures. Suppliers are encouraged to implement water conservation initiatives and enhance their water management measures. In October 2025, approximately 40 suppliers participated in such a session, aiming to draw from Nanya Technology's experience and jointly enhance water management practices across the supply chain. 3. Annual targets are set, and together with the ESG team, on-site audits and guidance visits are conducted at suppliers' facilities. In 2025, a total of 19 suppliers underwent on-site audits and guidance visits, with 3 suppliers completing water conservation projects, resulting in an annual water savings of 40 million liters. In 2026, 25 suppliers are expected to receive audits and support, with estimated annual water savings of 100 million liters.
Local Residents	1. Since its establishment, Nanya Technology has collaborated with the local community to form the Environmental Quality Supervision Committee. Every quarter, Nanya Technology commissions a third-party organization to conduct monitoring surveys on the local ecology, hydrology, and air quality around the facilities. The survey results are then reported to the Environmental Quality Supervision Committee. 2. The Company engages with the Environmental Quality Supervision Committee to understand community concerns and incorporates relevant issues into its ISO 14001 management system for regular evaluation. 3. To ensure that effluent water quality falls within normal parameters and to address concerns among residents in the discharge basin, Nanya Technology has implemented a real-time effluent monitoring system that is directly connected to the Environmental Protection Department, enabling joint real-time monitoring to ensure effluent water quality remains normal.
Corporations and the General Public	1. By participating in various community activities, Nanya Technology can share its water management experience, for example, by hosting green factory tours and engaging in knowledge exchange with visiting officials and companies regarding Nanya Technology's water management practices and water-saving achievements. 2. Water and energy conservation experts are assigned with help from the Energy and Water Conservation Service Team within participating companies of the Group and collaborate with specialists from other Group companies to provide on-site guidance and conduct inspections at various facilities, including those of the Company. These efforts span Formosa Plastics Group's facilities in northern, central, and southern Taiwan, with the goal of enhancing water and energy conservation performance across all facilities through expert audits and targeted support. 3. Since 2023, Nanya Technology has also published its Alliance for Water Stewardship Report via its official website (Corporate Sustainability ESG) .

Raw Material Reduction and Reuse

Raw Material Reduction

Nanya Technology regularly reviews the rationality and appropriateness of raw material usage in production, and simplifies manufacturing processes to reduce material consumption. The Company's designated team sets annual raw material reduction targets and regularly reviews overall performance in raw material reduction. In 2025, a total of 32 proposals for raw material usage improvements were completed via the Kaizen Proposal System, including the development of new processes and formulas as well as reducing process duration to reduce consumption. Among the improvement projects implemented in 2025, the dry-free suck back (DFS) function was introduced in the PH area. By adjusting the photoresist nozzle cleaning formulation, the cleaning cycle was gradually extended from 1 hour to 24 hours. This effectively improved photoresist utilization efficiency, reducing the consumption of seven types of photoresist by approximately 34 liters per month(~97%), representing the most significant raw material reduction improvement project.

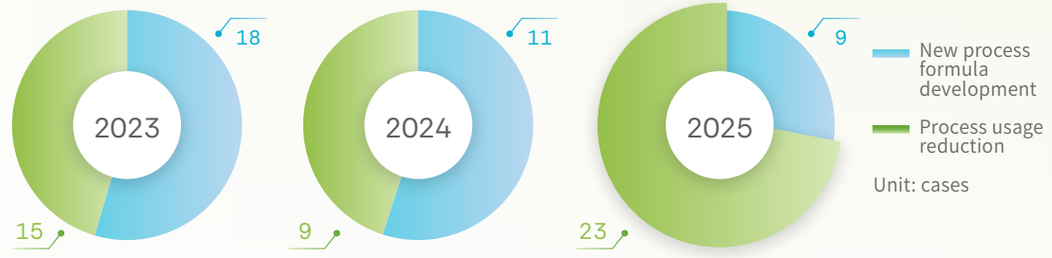
2024 Performance of Raw Material Usage Improvement via Kaizen Proposal System

Category	Number of Proposals	Items Proposed	Benefit (NT$/Year)
Development of new processes and formulas	9	Optimizing process conditions and developing high-productivity processes and formulas reduced the use of photoresists, chemicals, and slurry (9 proposals)	In the current year, raw material consumption decreased by 29.8 metric tons, representing approximately NT$13,781,416 in cost savings.
Reduction of material usage in processes	23	Improving production efficiency and optimizing equipment parameters reduced the use of photoresists, specialty gases, and chemicals (23 proposals)	In the current year, raw material consumption decreased by 355.1 metric tons, representing approximately NT$54,655,649 in cost savings.

Total reduction **10.45**(Metric tons/Year)

- Slurry process condition optimization: Reduction**9.16**(Metric tons/Year)
- Chemicals process condition optimization: Reduction**0.84**(Metric tons/Year)
- Photoresist reduction process condition optimization: Reduction**0.45**(Metric tons/Year)

Performance in Raw Material Consumption



Raw Material Consumption and Output

Input — Nanya Technology Wafer Fab — Output

Raw Materials for Production	Usage	Renewable	Non-Renewable
Raw wafers (kpcs–12 inches)	665	–	V
Process chemicals (metric tons)	58,900	–	V
Process gases (million cubic meters)	7,686	–	V
Electricity (million kWh)	8,01	–	V
Freshwater (ML)	3,955	V	–
Wafer packaging material (metric tons)	68	V	–

Product	Capacity
Raw wafers (kpcs–12 inches)	644
Exhaust gas	**Emissions**
Greenhouse gases (tCO_2e)	423,522
Volatile organic compounds (metric tons)	14.65
Sulfides (metric tons)	2.21
Nitrogen oxides (metric tons)	13.07
Wastewater	**Emissions**
Wastewater volume (ML)	2,864
Waste	**Emissions**
General industrial waste (metric tons)	5,881
Hazardous industrial waste (metric tons)	16,522
Electronic waste (metric tons)	4.4

Each year, Nanya Technology conducts a materiality assessment of environmental impacts in accordance with the ISO 14001 Environmental Management System(current validity period: January 30, 2026 – January 29, 2029). High-risk items are prioritized for management planning. After a comprehensive evaluation, feasible items are selected for implementation that year. To implement source reduction, manufacturing processes are streamlined to minimize raw material usage and reduce waste generation.

Waste Impact Assessment Results

	Upstream	Nanya Technology	Downstream
Sources of Impacts	• Extensive use of small gas cylinders results in more residual gas.	• Raw materials and associated materials contain hazardous substances. • Large volumes of acidic and alkaline chemicals are used. • Extensive use of monitor wafers in production.	• Products require a large amount of packaging materials. • Products contain hazardous substances.
Potential Impacts	• Resource waste: Volume of residual gas. • Increased carbon emissions: More frequent transport increases internal and external carbon emissions.	• Violating international regulations and customer specifications could lead to product returns, contract penalties, as well as potential soil contamination or wastewater pollution due to hazardous material discharged via waste. • Large amounts of waste are generated, with limited disposal locations and capacity, while the waste that undergoes treatment or recycling still requires landfilling.	• Solid waste pollution: Packaging waste such as EPE cushioning material and cardboard boxes may result in solid waste pollution if improperly handled. • Resource waste: Excess packaging waste could result in unnecessary consumption of resources, as some packaging materials are recyclable and reusable. Discarding such materials as waste constitutes resource waste.
Mitigation Measures	• Replacement of small gas cylinders with large cylinders to reduce residual gas and cylinder usage.	• Establishment of a hazardous substance free management system to ensure that wafers, IC assemblies, and DIMM module products comply with international regulations and customer-specific requirements for hazardous sub-stance management. • a. 24 raw material usage improvement proposals were completed via the Kaizen Proposal System. b. In-plant regeneration, such as converting copper sulfate waste liquid into copper foil. c. Outsourced recycling and reuse of waste acid, such as sulfuric and phosphoric acids. d. Monitor wafers recycled and reused 8 to 11 times.	• Promoting the return of packaging materials from customers for reuse by NTC. • Disposal of waste electronic equipment must comply with EU environmental directives such as WEEE, RoHS and EuP.

Recycling and On-Site Resource Recovery

Ratio of Recycled Materials Used as Raw Materials for Production

During the production process, monitor wafers are required to check process conditions. These wafers, after use, are reprocessed and reused. Each monitor wafer can be reused approximately 8 to 11 times, depending on the specific process. This not only reduces the cost of purchasing brand-new monitor wafers but also significantly lowers waste generation.

By raising the yield of reclaimed wafers that were returned to each supplier, the number of reclaimed wafers will increase, thereby raising the proportion of reclaimed wafers used in internal production. The Company also conducts regular reviews of defect categories with suppliers, who then implement process improvements and revise specifications. Since 2021, process adjustments by suppliers have reduced scrap caused by defects, raising the average return yield from 80% to 85%. As a result, the reclaim wafer input rate remained stable at 83% from 2023 to 2024. The rate further increased to 84% in 2025 and is expected to reach 84.5% in 2026.

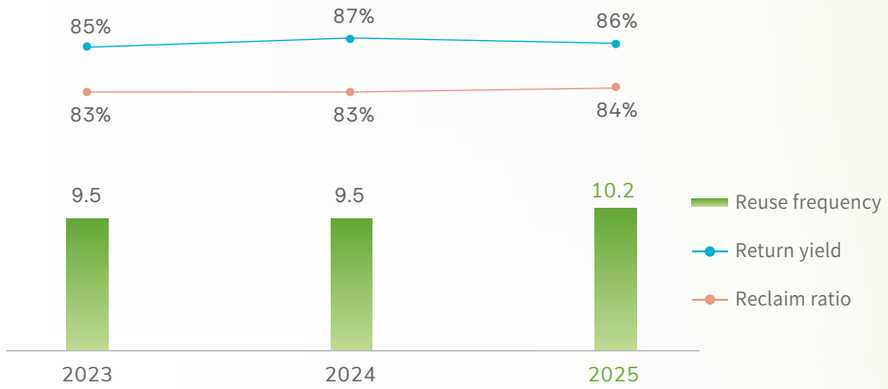
Reuse of Packaging Materials for Product Testing and Shipment

Packaging materials used for shipping products to external testing or packaging facilities—including cartons, shipping boxes, cushioning material, and wafer carriers—are actively recovered and reused internally. Wafer carriers used for raw wafers are also collected and reused for product shipments, achieving a reuse rate close to 100%. These practices minimize packaging usage and reduce waste. This approach reduces the use of approximately 15,000 brand-new 12-inch wafer carriers annually, reducing around 68 metric tons of plastic.

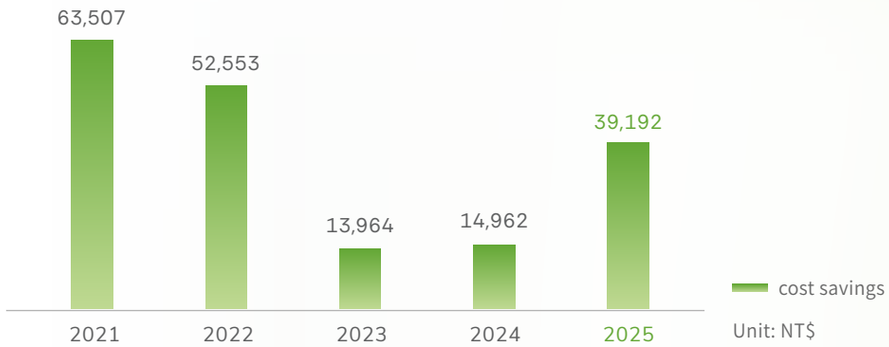
Reduction of Product Packaging Materials

To support recycling and waste reduction efforts, the finished goods warehouse began taking steps to reuse recyclable packaging materials. Reusable packaging materials from returned products are repurposed for storing goods, contract manufacturing operations, or fulfilling product exchanges resulting from customer complaints. This approach helps reduce the frequency of issuing new packaging materials and submitting procurement requests, thereby promoting reuse, reducing packaging material consumption, and lowering associated costs. In 2025, this initiative saved NT$39,192. Although the monetary savings are modest, this initiative makes a meaningful contribution to environmental protection and resource recovery. Specific results are as follows:

Reclaimed Wafer Return Yield And Usage Trend



Cost Savings



5.3 Environmental Pollution Prevention

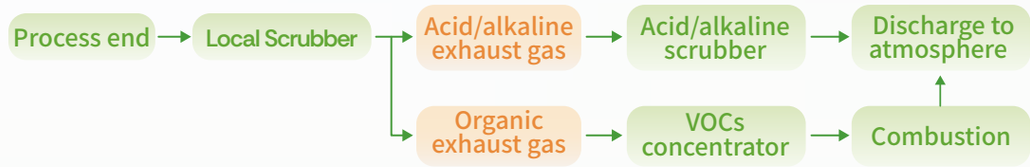
In alignment with our commitment to environmental protection and environmental impact assessments, Nanya Technology regularly monitors key environmental impact factors within our development sites, such as air quality, noise and vibration, surface and underground water quality, traffic flow, as well as the ecosystem for animals and plants. Since 2014, there have been no recorded violations of environmental regulations. Nanya Technology also collaborates with regulatory authorities to confirm that our development sites are not located in environmentally sensitive or areas with designated purposes. Through its environmental, safety, and health policies, the Company is fully committed to waste reduction and resource reuse initiatives to meet legal requirements and fulfill environmental protection commitments. Each year, we evaluate opportunities for waste reduction, as well as the types and quantities of recyclable waste and wastewater. Based on this evaluation, we establish annual goals and incorporate these plans into our annual budget and work schedule.

Air Pollution Control

Since the establishment of its facilities, Nanya Technology has placed great emphasis on pollution prevention. In addition to implementing environmental management programs to effectively reduce raw material consumption and lower the concentration of exhaust emissions, Nanya Technology uses air pollution control equipment that meets regulatory standards. These include local scrubbers, acid/alkaline exhaust gas scrubbers, VOCs zeolite rotor concentrators, and afterburners ("VOCs" refers to volatile organic compounds; local scrubbers are point-source gas treatment devices). Testing has confirmed that pollutant emissions have consistently complied with, or been lower than, the limits set by government environmental regulations. The Company does not emit ozone-depleting substances (ODS). To maintain the optimal performance of treatment equipment, each unit undergoes regular maintenance and inspection. Operators receive thorough training to ensure the systems function properly and that emissions do not pose a threat to the surrounding environment.

The primary air pollutants generated by Nanya Technology include acidic, alkaline, and organic exhaust gases. Since trichloroethylene is not used as a raw material, no hazardous air pollutants (HAPs) are emitted. Based on the characteristics of each exhaust type, appropriate treatment processes and equipment are used. After being generated at the process level, emissions pass through local scrubbers to remove specific substances. Acidic and alkaline gases are routed to respective scrubbing towers before being discharged into the atmosphere. Organic exhaust is adsorbed by a zeolite rotor, concentrated, and then destroyed in afterburners, with combustion efficiency reaching 99%, well above regulatory standards. The overall VOCs (volatile organic compound) reduction rate is maintained at above 90% to meet regulatory requirements. In 2025, the VOCs emission intensity per unit of production capacity was 13.4 g VOCs/kpcs 4Gb eq.

Waste Treatment Flowchart



Emission Trends

	2022	2023	2024	2025
Volume of VOCs generated (metric ton)	17.31	14.24	12.72	14.65
VOCs emissions per unit wafer area (kg/wafer area m^2)	0.29	0.30	0.27	0.31
VOCs emissions per unit of production capacity (g/kpcs)	15.9	14.2	12.9	13.4
VOCs emissions per unit of revenue (g/NT$ million)	304	476	373	220

Trends in Other Air Pollutant Emissions

	2022	2023	2024	2025
NOx (metric ton)	10.50	11.21	12.65	13.07
SOx (metric ton)	1.66	1.66	2.12	2.21

Air Pollution Reduction

To reduce emissions of inorganic acidic gases, Nanya Technology has continued optimizing the operating parameters of its existing air pollution control equipment annually. In 2024, the Company plans to invest NT$55 million in its 3A and 3A-N plants to install additional scrubbers downstream of the current central scrubbers. This two-stage scrubbing process is expected to enhance the removal of inorganic acids from emissions,which was completed in 2025 with a projected reduction efficiency over 80%.

Air Pollutant	Before Improvement	After Improvement
VOCs emissions from 3A Plant P131 duct	8.06 (metric ton)	2.36 (metric ton)

In 2022, Nanya Technology added a dust removal tower to the plant's air pollution control system to reduce particulate matter emissions at the 3A Plant. Using atomized water scrubbing and impact interception, the system reduces particulate emissions. Third-party verification confirmed that reduction efficiency can reach up to 77%. In 2024, we planned further investments of an additional NT$30 million to install a dust removal tower at the 3A-N Plant to reduce particulate matter emissions. Completed in 2025, it is capable of increasing the particulate removal rate by 80% or above.

Air Pollutant	Before Improvement	After Improvement
Total suspended particulates in 3A Plant P106 duct	79 (mg/m^3)	18 (mg/m^3)

To effectively monitor VOCs emissions, Nanya Technology conducts monitoring not only at VOCs emission ducts but also at acidic and alkaline exhaust ducts. This ensures that air pollution control equipment operates at optimal condition.

Water Pollution Control

All wastewater at Nanya Technology is collected and categorized before being discharged to the appropriate treatment facilities. Since its establishment, Nanya Technology has collaborated with the local community to form the Environmental Quality Supervision Committee. Every quarter, we commission a third-party organization to conduct monitoring surveys on the local ecology, hydrology, and air quality around the facilities. The survey results are then reported to the Environmental Quality Supervision Committee. Nanya Technology engages with the Environmental Quality Supervision Committee to understand the concerns of local residents, incorporating those issues into the Company's ISO 14001 management system for regular evaluation. To ensure that effluent water quality falls within normal parameters and to address concerns among residents in the discharge basin, Nanya Technology has implemented a real-time effluent monitoring system that is directly connected to the Environmental Protection Department, enabling joint real-time monitoring to ensure effluent water quality remains normal.

After meeting discharge water quality standards, 100% of the effluent is discharged on land into Dake Creek. The water quality complies with Class D surface water standards, making it suitable for irrigation, secondary industrial use, and environmental conservation. The creek ultimately flows into the Tamsui River before being discharged into the ocean. To prevent serious environmental pollution and ecological impacts resulting from non-conforming effluent quality, we have remained committed to water pollution prevention, and continue to upgrade and invest in wastewater treatment facilities. 28 distinct pipelines are used to segregate and convey the different types of wastewater within the facility, primarily categorized into organic wastewater, general acidic/alkaline wastewater, hydrofluoric wastewater, high-concentration waste liquids, and water that can be directly reclaimed, processed, and reused for secondary uses. Different types of wastewater are treated separately according to their specific characteristics. In addition to meeting regulatory discharge standards, wastewater suitable for reuse is recovered through the reclamation system and reused to reduce the overall discharge volume. In addition, our site was redeveloped on an existing lot within our facility, so no large-scale removal of vegetation surrounding the designated construction area was required. Wastewater is properly treated before being discharged into Dake Creek, and the receiving water body and surrounding habitats are not designated as national or international protected areas. Investigations also found no impact on the habitats of protected species or risk of habitat destruction.

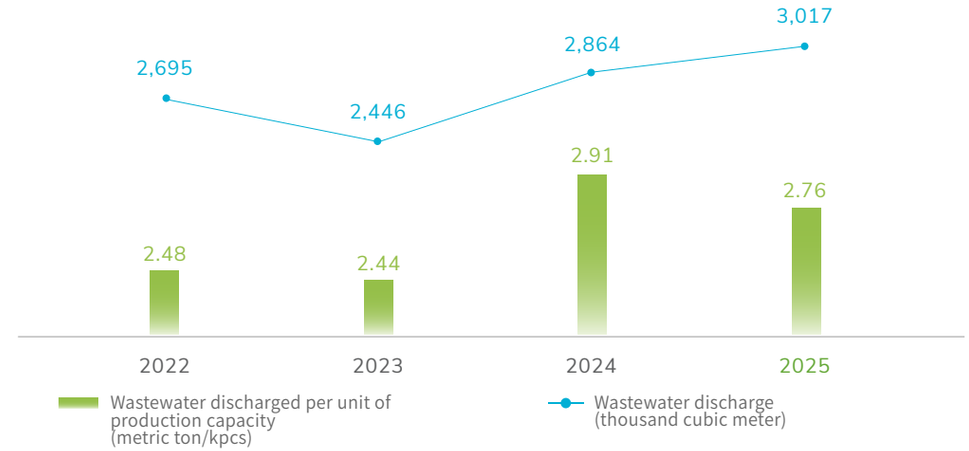
In 2025, total wastewater discharge reached 3,017 million liters. Due to non-conforming handling of the membrane bioreactor (MBR) system during wastewater treatment, the volume of water reclaimed decreased, leading to an increase in wastewater discharge. As a result, total wastewater discharge in 2025 rose by 5.4% compared to 2024, while wastewater discharge per unit of production capacity decreased by 5.3% for the year. Due to the Ministry of Environment's phased tightening of discharge limits for ammonia nitrogen in effluent, the limit was further reduced to 30 mg/L in 2015. In response to these regulatory changes and rising environmental awareness, Nanya Technology implemented multiple improvement measures. Wastewater sources were managed through a diversion strategy, including segregated collection of effluent from equipment using ammonium fluoride to prevent high-concentration ammonia nitrogen from directly entering the wastewater treatment system. The existing final sedimentation tank was converted into an aerobic nitrification tank, and a membrane bioreactor (MBR) system was added as the final treatment unit. These improvements significantly reduced ammonia nitrogen concentrations to well below regulatory limits, lowered effluent turbidity, and improved overall effluent water quality. Since the chemical oxygen demand (COD) of effluent is also a key concern for regulatory authorities, Nanya Technology installed an IPA concentration system in 2018. Previously, equipment discharging low-concentration IPA would send wastewater directly into the treatment system, resulting in excessive COD loads. With the new system in place, low-concentration IPA wastewater is collected and concentrated into high-concentration IPA using a high-temperature negative-pressure process, and then transported off-site by a contractor. This approach reduces COD levels in raw water and effectively enhances control over effluent water quality. In anticipation of increased pollutant loads due to future production expansion—and to further reduce discharge pollutant concentrations—Nanya Technology invested NT$430 million in 2018 to build a new hydrofluoric wastewater COD and total nitrogen treatment system. The system was completed and operational in 2023. It keeps ammonia nitrogen discharge consistently below 10 mg/L and COD below 30 mg/L, significantly reducing environmental impact. After a series of improvements, ammonia nitrogen test results in 2025 ranged from 0.35 mg/L to 12.2 mg/L, with an average of 6.8 mg/L. COD ranged from 31.9 mg/L to 36.1 mg/L, with an average of 34.4 mg/L—all well below regulatory limits.

Sorting and Processing 28 Types of Wastewater

Mixed hydrofluoric acid wastewater (hydrofluoric wastewater treatment)	Photoresist waste liquid (3 types)	Final-stage process rinse water (4 types)
HF waste liquid with F concentration <10% (hydrofluoric wastewater treatment)	HF waste liquid with F concentration ≥10%	Reclaimed rooftop rainwater
General inorganic acid/alkaline waste liquid (acid/alkaline wastewater treatment)	High-concentration phosphoric acid waste liquid	Clean room make-up air scrubbing water
Waste liquid with organic solvent concentration <35% (2 types) (organic wastewater treatment)	High-concentration sulfuric acid waste liquid (2 types)	Air conditioning condensation
Organic cleaning solution (organic wastewater treatment)	SOD waste liquid	
CMP acidic waste liquid (hydrofluoric or organic wastewater treatment)	High-concentration IPA waste liquid	
CMP alkaline waste liquid (hydrofluoric or organic wastewater treatment)	High-concentration IPA waste liquid after concentrating dilute IPA	
Low-copper CMP waste liquid (hydrofluoric or organic wastewater treatment)	Ammonium fluoride waste liquid	
HF waste liquid with F concentration <10% (hydrofluoric wastewater treatment)	Copper waste liquid	



Wastewater Discharge Trend (2022-2025)



Nanya Technology's Wastewater Discharge by Receiving Water Body and Volume

		2022	2023	2024	2025
By discharge destination[Note 1]	Surface water	2,695	2,446	2,864	3,017
	Groundwater, seawater, water from third parties, or water provided to other organizations by third parties[Note 2]	0	0	0	0
Total water discharge	Freshwater (total dissolved solids ≤ 1,000 mg/L)	2,695	2,446	2,864	3,017
	Other water (total dissolved solids >1,000 mg/L)	0	0	0	0
By wastewater treatment level	Untreated	0	0	0	0
	Treated on-site in compliance with Ministry of Environment effluent standards	2,695	2,446	2,864	3,017

2025 Effluent Water Quality Test Results

	Testing item	Unit	Regulatory standard	Testing result			Compliance with standards
				Minimum	Average	Maximum	
FAB 3A	pH	-	6-9	7.5	7.6	7.8	Yes
	Chemical oxygen demand (COD)	mg/L	<100	31.9	34.4	36.1	Yes
	Suspended solids (SS)	mg/L	<30	7.2	10.5	15.7	Yes
	Fluoride ions	mg/L	<15	7.1	9.7	11.1	Yes
	Ammonia nitrogen	mg/L	<30	0.35	6.8	12.2	Yes

Note 1: The final destination of Nanya Technology wastewater discharge is the Dake Creek (surface water), which does not fall in areas under water pressure.
Note 2: Municipal water suppliers and municipal wastewater treatment plants, public and private utility companies, and other organizations involved in the provision, transportation, treatment, disposal, or use of water and wastewater.

Waste Management

Waste Generation Profile

In 2025, Nanya Technology generated a total of 25,652 metric tons of waste, of which 24,931 metric tons (97.2%) were recycled and reused through external service providers, with no in-house recycling. The total amount of waste directly disposed of was 6,097 metric tons, including 5,376 metric tons (20.96%) reused after treatment, 709 metric tons (2.76%) incinerated, 8 metric tons (0.03%) either solidified and landfilled or directly landfilled, and 4metric tons (0.02%) treated through other methods such as physical recycling or refining for reuse.

In 2025, Nanya Technology's waste generated per unit wafer production capacity was 23.44 kg/kpcs 4Gb eq, an increase of 1.47% compared to 2024. The volume of general waste outsourced for treatment was 7,580 metric tons, with a unit wafer production capacity of 6.93 kg/kpcs 4Gb eq, an increase of 12.44% compared to 2024. The increase was attributable to higher organic sludge generation in 2025. The volume of hazardous waste outsourced for treatment was 18,072 metric tons, with a unit wafer production capacity of 16.51 kg/kpcs 4Gb eq, an increase of 2.52% from 2024. The Company's primary hazardous industrial waste consists of acidic waste liquids, including sulfuric acid, hydrofluoric acid, and phosphoric acid. These waste acids are processed by third-party vendors and recycled into other industrial raw materials. For example, sulfuric acid is regenerated into industrial-grade sulfuric acid, while hydrofluoric acid is refined into industrial-grade sodium fluorosilicate. In 2025, 13,850 metric tons of waste sulfuric acid, 1,383 metric tons of hydrofluoric acid, and 521 metric tons of phosphoric acid were recovered and reused, achieving a 100% recycling rate for acidic waste liquids. The Company will continue to reduce waste, increase recycling volumes, and promote circular use to achieve effective reuse of waste as part of its sustainability targets.

General and hazardous industrial waste at Nanya Technology is managed in a centralized manner by the respective departments responsible for their generation. Activities include storage, removal, inspection, and reduction initiatives. Annual training is provided to relevant personnel to ensure familiarity with regulations and compliance. In 2025, a total of 12 employees were trained as seed instructors. In addition, the Company conducts irregular audits of waste contractors to ensure that removal and treatment practices comply with regulations. Annual reviews and execution of waste or source reduction projects are conducted to verify legality and ensure that all waste is properly handled or reused to prevent further environmental impact. In 2025, a total of 5 proposals for raw material usage improvements were completed via the Kaizen Proposal System, including measures to reduce process time, extend usage cycles, and reduce material consumption during processes. From 2014 to 2025, Nanya Technology did not engage in any transboundary movement of hazardous waste. All hazardous industrial waste was handled by qualified domestic contractors, with a total of 42 certified waste treatment vendors engaged in 2025.

All waste generated by Nanya Technology is 100% outsourced for processing, and is reprocessed by contractors into industrial-grade raw materials, construction materials, or other raw materials. This also includes resource recovery through incineration as fuel. In 2025, the overall waste recovery rate reached 97.2%, with a 99.9% recovery rate for hazardous waste.

Nanya Technology's Off-Site Resource Recovery List

Low-concentration isopropanol waste liquid	collected and then concentrated into high-concentration isopropanol wastewater via a concentration system, and finally recovered by vendors for reuse in the production of industrial-grade isopropanol.
Waste photoresist solution	recovered and recycled by vendors to produce industrial-grade PGMEA (propylene glycol monomethyl ether acetate) and EBR (edge bead remover).
Waste sulfuric acid	Recovered and recycled by external vendors to produce industrial-grade sulfuric acid.
Waste phosphoric acid	Recovered and recycled by external vendors to produce industrial-grade phosphoric acid.
Copper-containing waste liquid	Processed in-house via electrolysis equipment to produce copper foil, which is then collected and recycled by external vendors for the manufacture of copper wire and other finished products.
Organic wastewater	Collected and treated through a biological treatment system to produce organic sludge, which is then recovered by external vendors and thermally treated for use as a raw material in ready-mix concrete and other construction materials.
Inorganic sludge	Hydrofluoric acid wastewater is treated through a chemical treatment system to generate calcium fluoride, which is then recovered by external vendors for use as an industrial flux material, artificial fluorite, or raw material for cement production.
Clean water sludge	Inorganic river sand sludge generated from raw water filtration is sent to brick manufacturers, where it is mixed and fired into red bricks for use as building materials.
Waste SOD	Collected and then processed by recovery vendors into finished products such as banana oil.

Summary of Outsourced Waste Recycling and Reuse

Category/Year	2022	2023	2024	2025
Total amount of waste processed (metric tons)	23,981	22,403	22,732	25,652
Amount of waste recovered (metric tons)	22,089	22,123	22,419	24,931
Waste resource recovery (%)	92.1	98.8	98.6	97.2
Amount of general waste processed (metric tons)	6,383	5,881	6,060	7,580
Amount of general waste recovered (metric tons)	4,951	5,626	5,775	6,882
General waste resource recovery (%)	77.5	95.7	95.3	90.8
Amount of hazardous waste processed (metric tons)	17,598	16,522	16,671	18,072
Amount of hazardous waste recovered (metric tons)	17,137	16,497	16,644	18,049
Hazardous waste resource recovery (%)	97.4	99.8	99.8	99.9



Nanya Technology Corporation's Waste Generation Overview in 2025

Unit: Metric tons

Hazardous Waste	Amount Generated	Recycled and Reused	Disposed Directly
Waste acid solution	15,754	14,955	800
Waste solvent	2,294	210	2,085
Containers	11	0	11
Electronic waste	4	0	4
Others	8	0	8
Subtotal	18,072	15,165	2,908

General Waste	Amount Generated	Recycled and Reused	Disposed Directly
Sludge	6,972	4,304	2,668
Packaging materials	105	3	101
Employee domestic waste	217	0	217
Mixed metal scrap	14	1	13
Mixed waste plastic	183	0	183
Others	90	83	7
Subtotal	7,580	4,391	3,189

Total amount of waste

Amount Generated		Recycled and Reused		Disposed Directly
25,652	=	19,555	+	6,097

Note : Slight discrepancies between total output and the sum of individual items are due to rounding.

Corporation's Waste Recycling and Reuse Overview in 2025

Unit: Metric tons

Hazardous Waste	On-Site	Off-Site	Total Amount
Reused for original purpose	0	14,955	14,955
Recycled and reused	0	0	0
Other ways of recycling	0	210	210
Subtotal	0	15,165	15,165

General Waste	On-Site	Off-Site	Total Amount
Reused for original purpose	0	3	3
Recycled and reused	0	4,318	4.318
Other ways of recycling	0	69	69
Subtotal	0	4,391	4,391

Total amount of recycled and reused

On-Site		Off-Site		Total Amount
0	+	19,555	=	19,555

Corporation's Waste Treatment Overview in 2025

Unit: Metric tons

Hazardous Waste	On-Site	Off-Site	Total Amount
Incinerated and used as energy	0	2,885	2,885
Incinerated without heat recovery	0	11	11
Solidification and landfill	0	8	8
Other disposal operations[Note 1]	0	4	4
Subtotal	0	2,908	2,908

General Waste	On-Site	Off-Site	Total Amount
Incinerated and used as energy	0	2,491	2,491
Incinerated without heat recovery	0	698	698
Solidification and landfill	0	0	0
Other disposal operations[Note 3]	0	0	0
Subtotal	0	3,189	3,189

Total amount of waste treatment

On-Site		Off-Site		Total Amount
0	+	6,097	=	6,097

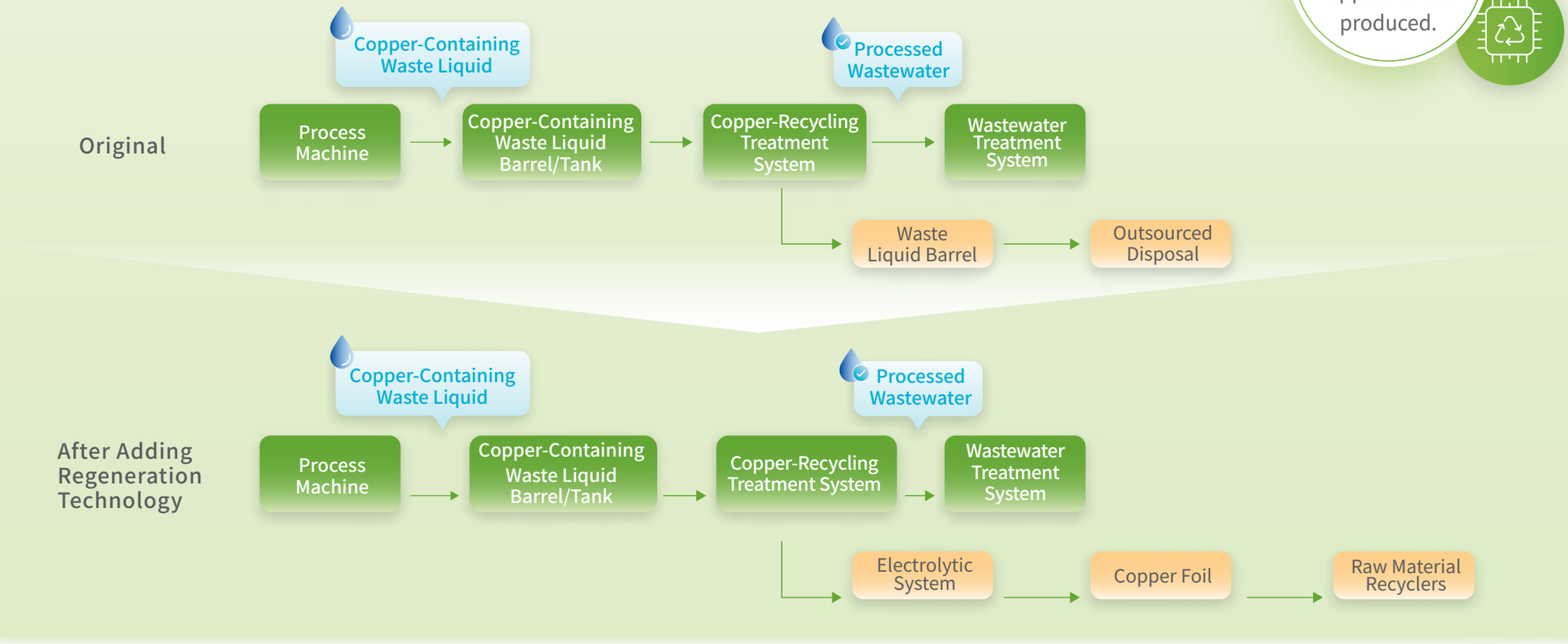
Note 1: Other disposal operations for hazardous waste involve physical treatment followed by recovery and reuse.
Note 2: Slight discrepancies between total output and the sum of individual items are due to rounding.
Note 3: Other disposal operations for general waste refer to physical treatment (e.g., re-crushing and sorting), etc.

Waste Reduction Recycle Technology and Copper Waste Liquid Electrolytic Regeneration System

Nanya Technology's R&D team invested NT$8.29 million to establish an electrolytic regeneration system for copper waste solution. The system uses resin adsorption followed by regeneration to produce high-concentration copper sulfate solution, which is then electrolyzed to recover copper foil. In addition to eliminating the need for external disposal of copper-containing waste liquid, the recovered copper foil can be further processed into industrial-grade raw materials for reuse, achieving resource circulation. In 2025, a total of 980 kg of copper foil was produced.

In 2025, a total of **980** kg of copper foil was produced.

Copper-Containing Waste Liquid Treatment Flowchart



Environmental Costs and Benefits

Nanya Technology introduced the environmental accounting system in 2008, followed by an environmental benefit accounting system in 2009, which was fully implemented in 2010. By adopting the environmental accounting system, the Company can monitor environmental expenditures, evaluate their effectiveness, and provide specific and correct disclosures on its environmental efforts to stakeholders. Environmental accounting, based on regulations set by the Ministry of Environment, categorizes and calculates environmental expenditures for internal management and helps external stakeholders understand the Company's efforts in environmental initiatives. According to aggregated statistics, the Company invested NT$153,959 thousand in environmental capital expenditure and spent approximately NT$1,238,804 thousand in environmental expenditure, totaling NT$1,392,763 thousand in 2025. With a total revenue of NT$66.586 billion in 2025, environmental expenditures accounted for 2.09%.

Environmental Accounting Expenditures

Unit:NT$ thousands

Year	2022	2023	2024	2025
Environmental Capital Expenditure	498,249	124,328	247,399	153,959
Environmental Expenditure	722,904	741,346	900,544	1,238,804
Total	1,221,153	865,674	1,147,943	1,392,763
Environmental expenditure/ percentage of revenue (%)	2.14	2.90	3.36	2.09

Environmental Accounting Expenditures in 2025 (NT$ thousands)

Unit:NT$ thousands

Cost Categories	Description	Environmental Expenditure	Environmental Capital Expenditure
Corporate operational costs	• Pollution prevention costs: Cost of control measures for air pollution, water pollution, and other types of pollution.	588,881	153,959
	• Global environmental protection expenses: (1) Expenses related to climate change prevention (2) Other expenditures associated with global environmental protection.	459,667	0
	• Resource and energy conservation and recycling costs: (1) Improving resource utilization efficiency (2) Costs for waste reduction, recycling, and reprocessing (3) Energy-saving expenses	170,566	0
Upstream and downstream costs associated with suppliers and customers	(1) Green procurement (2) Expenses incurred from providing environmentally friendly products	48	0
Management activity costs	(1) Cost of environmental education and training for employees (2) Expenses incurred for obtaining external certifications (3) Expenses incurred for measuring environmental impacts (4) Others	19,219	0
R&D costs	Expenses incurred for product research and development for the sake of environmental protection	0	0
Social activity costs	Expenses for environmental improvements such as nature conservation, afforestation, and beautification	319	0
Environmental taxes and regulatory fees	(1) Expenses from air pollution (2) Audit fees and certification fees for pollution control	104	0
Total		1,238,804	153,959
Total		1,392,763	

ISO 14001 Management Program Results over the Past Four Years(NT$ thousands)

Unit:NT$ thousands

	2022	2023	2024	2025
Energy (electricity) conservation programs	11,680	16,278	22,052	23,475
Waste reduction programs	0	0	0	0
Programs to reduce raw material usage in processes	8,233	4,145	3,795	639
Tangible benefits from recycling and reusing industrial waste	13,195	13014	24,948	14,060
Electricity savings from low-power use and process improvements	1,081,896	1,568,178	2,468,680	6,024,250
Total benefit	**1,117,026**	**1,601,615**	**2,519,475**	**6,062,424**
Violations of environmental regulations	0	0	0	0
Fines for violations of environmental regulations	0	0	0	0
Unpaid fines for violations of environmental regulations	0	0	0	0

Internal Management System's Audit Records over the Past Four Years

	2022	2023	2024	2025
ISO 14001 Deficiency Type	Number of Deficiencies 9 / Resolution Rate 100% A total of 9 issues, which included outdated labeling at waste storage sites, incorrect entries in environmental aspect review records, and incomplete or outdated significance evaluations. All issues were resolved.	Number of Deficiencies 7 / Resolution Rate 100% A total of 7 issues, which included incorrect entries in comprehensive assessment forms on the operational aspect, incomplete or outdated significance evaluations, and deficiencies in the management of temporary waste storage sites. All issues were resolved.	Number of Deficiencies 7 / Resolution Rate 100% A total of 7 issues, which included outdated labeling at waste storage sites, incorrect entries in environmental aspect review records, and incomplete or outdated significance evaluations. All issues were resolved.	Number of Deficiencies 2 / Resolution Rate 100% A total of 2 issues, which included incorrect entries in comprehensive assessment forms on the operational aspect, incomplete or outdated significance evaluations, and deficiencies in the management of temporary waste storage sites. All issues were resolved.
ISO 45001 Deficiency Type	Number of Deficiencies 29 / Resolution Rate 100% A total of 29 issues, which included incomplete hazard identification forms, insufficient training, outdated documents, inadequate risk control measures, deficiencies during drills not incorporated for procedure revisions, and insufficient follow-up on non-conforming events. All issues were resolved.	Number of Deficiencies 26 / Resolution Rate 100% A total of 26 issues, which included incomplete hazard identification forms, insufficient training, outdated documents, inadequate risk control measures, deficiencies during drills not incorporated for procedure revisions, and insufficient follow-up on non-conforming events. All issues were resolved.	Number of Deficiencies 11 / Resolution Rate 100% A total of 11 issues, which included incomplete hazard identification forms, insufficient training, outdated documents, inadequate risk control measures, deficiencies during drills not incorporated for procedure revisions, and insufficient follow-up on non-conforming events. All issues were resolved.	Number of Deficiencies 11 / Resolution Rate 100% A total of 11 issues, which included incomplete hazard identification forms, insufficient training, outdated documents, inadequate risk control measures, deficiencies during drills not incorporated for procedure revisions, and insufficient follow-up on non-conforming events. All issues were resolved.