

Water Resource Management

Due to the effect of global climate change, rainfall has become polarized in Taiwan, resulting in floods and water shortages occurring at the same time. As an important member of the semiconductor industry, Nanya has monitored the risk of water shortage caused by global climate change, and understands the effect of climate change and water resources on operations. Nanya continues to implement water conservation measures and strives to recycle and reuse water to reduce its impact on the environment and the risk of water shortage. Nanya Technology Corporation launched the Alliance for Water Stewardship (AWS) – International Water Resource Management Standard Certification Project in 2022, comprehensively enhancing water resource management functions with the goal of obtaining platinum level certification in 2023.

Our efforts in water resource management has gained the recognition of the CDP, which is an international environmental evaluation indicator. Nanya was ranked at the leadership level “A-” in Water Security in 2021 and leadership level “A” in 2022. Nanya was recognized for its efforts in climate change and water resource management for global sustainability in 2022 with the “Water Resource Management Leadership Award” in the 15th TCSA.

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

- Actively manage indicators, conserve water in operations, and fully utilize water resources.
- Assess the risks and opportunities under climate change, and mitigate the impact of water shortage.
- Communicate with stakeholders so that they will take water resources seriously and implement water conservation.
- Implement wastewater classification treatment and multiple recycling measures to maximize the efficiency water resources.
- Comply with laws and regulations, continue to strengthen water treatment facilities, and reduce the risk of environmental pollution.

Water Resources Structure

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

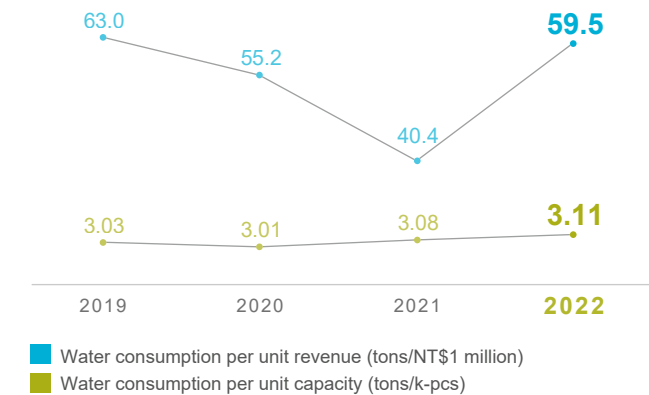
Nanya water consumption

Unit (thousand m³)

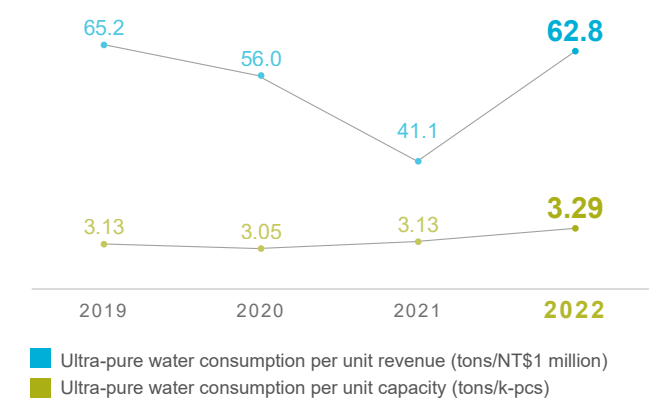
	2019	2020	2021	2022
Water withdrawal (A)	3,258	3,369	3,456	3,388
Water discharge (B)	2,634	2,705	2,718	2,695
Water consumption (A-B)	624	664	738	693
Changes in water storage¹	0	0	0	0

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

Run chart of 2019-2022 water consumption



Run chart of 2019-2022 ultra-pure water consumption



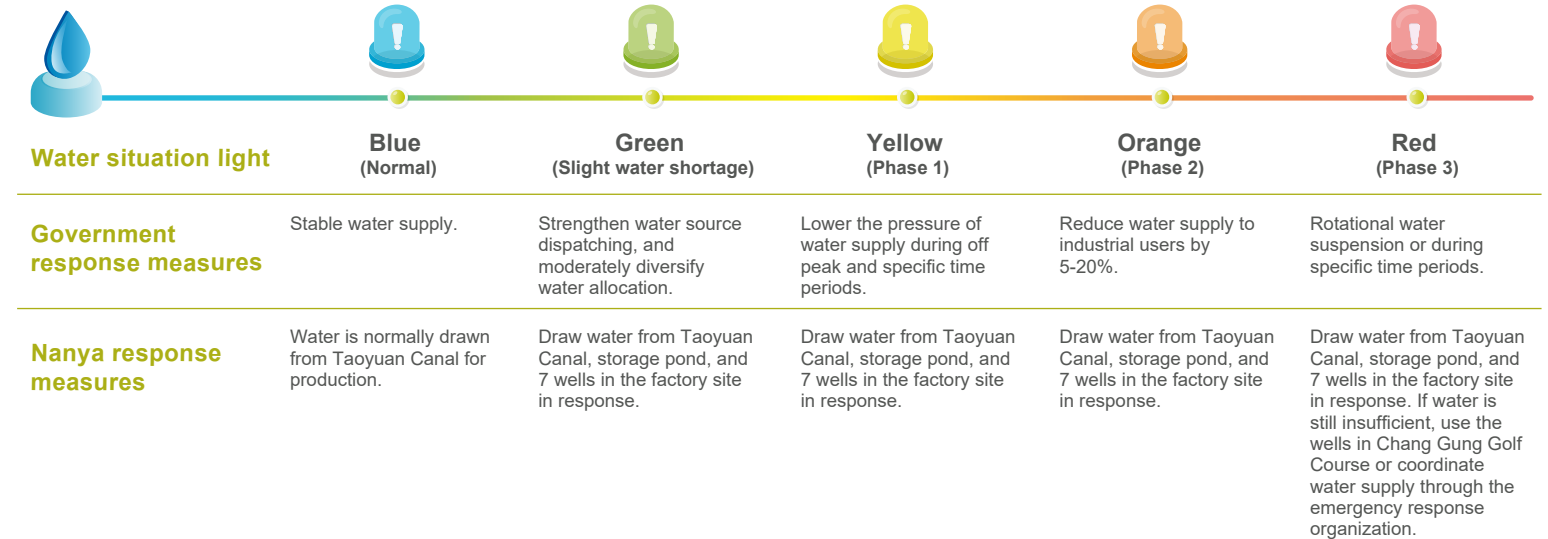
Water Resource Risk Management

Our main water source comes from the Shihmen Reservoir, and is channeled and processed through the Taoyuan Canal before being supplied as production water. The gravity flow is used to independently channel water without affecting the ecology of water resources and any other purposes of usage. In addition, rainwater harvesting can supply production water and tap water for household use. Currently, Nanya Technology Corporation (NTC) has only one production plant located in New Taipei City, Taiwan. Taiwan's rainfall is unevenly distributed between regions and seasons, which often results in regional and seasonal droughts. Nanya Technology Corporation has used the WRI Aqueduct, tools for simulating water resource scenarios, to analyze the geographical location of the plant. The water source is the Taoyuan Canal of Shihmen Reservoir, which supplies 96.5% of water. The water stress assessment result was "low", meaning that it is a non-water stress area. Furthermore, Nanya Technology Corporation's water source Shihmen Reservoir supplies approximately 800 thousand m³/day. The Company's daily water consumption is approximately 10 thousand m³. Hence, the effect of Nanya Technology Corporation's operations on regional water use is 1.25%. Other operating bases include Taiwan Hsinchu Design Center and overseas design centers and sales offices (including San Jose, USA, Houston, USA, Burlington, USA, Dobbindorf, Germany, Shenzhen, China, and Tokyo, Japan). As an office, there is no production activity, and there is no risk related to affecting operations. We established a standard process and procedures and examined water resource related risks through the environment management framework and company operational risk management framework, implementing related improvement measures and formulating emergency response plans, which are periodically examined in quarterly meetings of the Sustainability Promotion Center and Risk Management Promotion Center.

To reduce the risk of short-term water shortages inherent in the geographical location, we have continuously promoted water-saving measures, and committed ourselves to water recycling to strengthen our adaptability. The amount of water needed by production is huge so water shortage will cause

production interruptions, affecting the output and delivery. To mitigate immediate impacts caused by short-term water shortages, a cistern with a capacity of 43 thousand m³ and two detention basins each with a capacity of 4.06 thousand m³ have been built in the plant to effectively harvest rainwater during the rainy season. Moreover, Nanya Technology Corporation and the adjacent factories of the Formosa Plastics Group have cooperated to set up an emergency response organization for water shortages. When water shortages occur, the members of the emergency response organization can urgently deploy water resources to support each other. Therefore, no production losses have occurred owing to water shortages.

Nanya drought response mechanism



Water Conservation

In addition to the design of water-saving processes, the Nanya's water management chiefly emphasizes water reduction and recycling. Currently, the main directions promoted are as follows, the implementation of water conservation covers all operations, research and development, production and other bases.

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

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

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

Cooperation and Communication

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

Government

- Participate in the semiconductor industry association, periodically attend "water resource diversification management and cooperation platform" meetings of the Water Resources Agency, and engage in exchanges, communication, and cooperation in water resource related policies.
- Attend meetings and coordinate and communicate with the Irrigation Agency and North Region Water Resources Office, and cooperate with the government's emergency response plan when there is a water shortage, in order to most effectively utilize water resources, mitigate the impact of water shortages in water supply areas, and achieve stable and balanced water supply.



Companies and the general public

- Nanya shares its water management experience through participation in various events, such as the green factory visit co-organized with the Industrial Development Bureau in 2021, during which we shared our water management and water conservation results with visiting government officials and companies.



Suppliers

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

Local residents

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

