Resource Circulation

Securing resources and resource circulation have become important issues, especially for climate change, deforestation, as well as population and economic growth in emerging and developing countries. To create a sustainable society and reduce risks to business continuity, we have established medium- to long-term environmental targets for reducing waste and cutting water use, and we are promoting activities aimed at realizing a recycling-oriented society by using resources more effectively and by maximizing recycling.

Waste Reduction

The Shinko Group regards waste as a valuable resource and continues to work to recover and use it as an energy source.

In accordance with the (1) curbing of generation, (2) reuse, (3) recycling, and (4) heat recovery stipulated in the Basic Law for Establishing a Recycling-Based Society, we are actively introducing facilities to reduce the amount of waste acid, alkali, and sludge generated in the manufacturing process and also making efforts in the area of reuse.

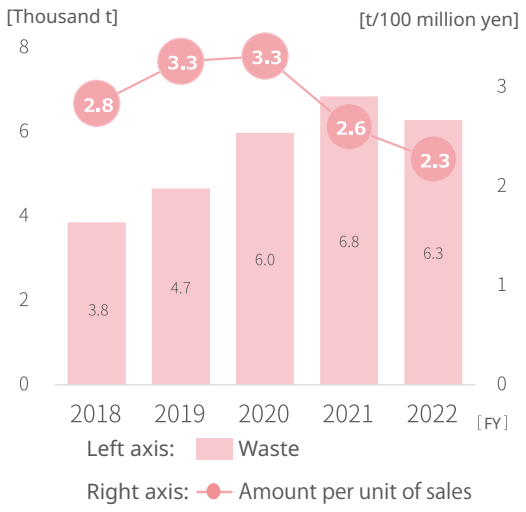
●Results of Activities

Reporting boundary: Shinko Group in Japan

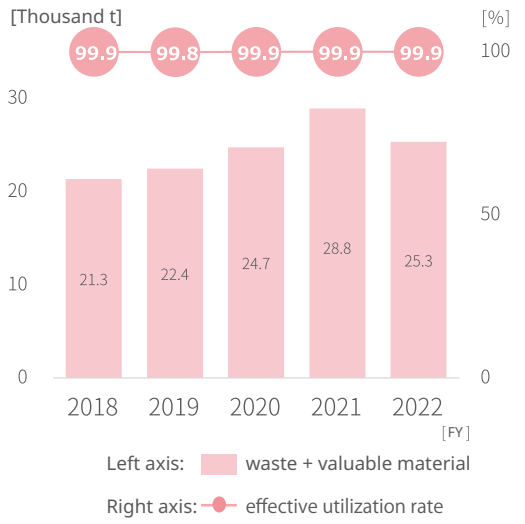
In FY2022, we achieved a reduction in waste equivalent to 6.1% (365 tons) of the total amount discharged in FY2020 by promoting the conversion of waste into valuable materials through thorough sorting. As a result, we were able to reduce the amount of waste equivalent to 10.1% (602 tons) of our FY2020 waste emissions, combined with our FY2021 results, in line with our mid- to long-term environmental targets.

In FY2023 and beyond, we will strengthen our efforts to reduce waste in expectation of further increases in the volume of waste resulting from the startup of a new plant and increased production.

【Gross Output of Waste, and Amount per Unit of Sales[1]】



【Trends in Waste + Valuable Material and Effective Utilization Rate】



[1] Amount per unit of sales: Amount of waste per 100 million yen of sales

Examples of Waste Reduction Activities

1. Reduction of debris and waste through process improvement
2. Promotion of the conversion of waste into valuable materials through thorough sorting
3. Extending the period of use of cleaning liquid, plating solutions, and recycling waste liquids
4. Promotion of regeneration and reuse
5. Cutting weight by reducing moisture content
6. In-house processing

〈Reducing Waste by Reusing Wooden Palettes〉

Traditionally, wooden pallets used by material and component manufacturers at the time of delivery have become waste. We therefore asked the manufacturers to switch to reusing pallets. The wooden pallets used at the time of delivery are collected by the manufacturer and used repeatedly, resulting in a reduction of 14.4 tons of waste per year.

●Response to plastic resource recycling law

Plastic is a widely used material because of its usefulness, but it is also cited as a factor in various problems such as marine plastic pollution, climate change, and waste. In response to this global situation, Japan enacted the "Plastic Resource Circulation Act" in June 2021. As a major emitter as defined in this Law, we have newly established the "Promote measures to reduce amount of plastic materials used and amount of waste plastic" as part of the Environmental Action Program (Stage 11) in order to contribute to the resolution of issues related to plastics, and we are promoting this initiative.

〈Reducing Waste Plastic by Making Plastic Containers for Chemicals into Valuable Material〉

At the Takaoka Plant, we have begun efforts to convert plastic containers for chemicals, which were previously discarded as waste, into valuable material. Making these into valuable material takes time and effort because the chemical labels must be removed from the containers after they are washed. However, in FY2022, we were able to reduce the amount of waste plastic by converting these containers into 1.5 tons of valuable material. In FY2023 and beyond, we plan to expand the reduction of waste plastic at other plants as well.

Empty containers after removal of chemical labels

●Effective Utilization of Waste

We achieved zero emissions, eliminating landfill and simple incineration (disposal that does not make effective use of waste heat during incineration or residues left after incineration) of waste in FY2003 to help create a recycling-oriented society. Since then, the effective utilization rate for waste has remained close to 100%, and we continue to maintain zero emissions.

Note: The effective utilization rate will not reach 100% since waste for which there is no effective utilization method and waste brought to local government-operated disposal sites that do not practice effective utilization (general waste from business activities) is not subject to zero emissions calculations.

●Proper Disposal of Waste

We consign waste to industrial waste disposal operators for proper disposal in accordance with the Waste Management and Public Cleansing Act and verify proper disposal through annual on-site inspections of disposal operators. In FY2022, we used documents and remote verification of contractors, with a view to preventing the spread of COVID-19. We also properly dispose of equipment containing PCBs possessed by the Shinko Group in Japan in accordance with the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes.

Reducing Water Use

Global water scarcity risk is growing due to the increasing world population, economic growth in developing countries, and climate change. As a business group that uses a large amount of water in its manufacturing processes, the Shinko Group recognizes the importance of water resources as a material issue from the standpoint of business continuity, and we are promoting efforts to reduce water consumption and recycle water.

●Response to water risks

The effects of increasingly severe water risks such as water scarcity, water pollution, floods and droughts, and competition for water resources are becoming more apparent worldwide, and responding to water risks is an important issue in sustainable business activities.

The Shinko Group has used Aqueduct, a global water risk assessment tool operated by the World Resources Institute (WRI), to conduct assessments of water-related physical, regulatory and reputational risks at production sites in Japan and overseas.

As a result of this assessment, it was found that none of our production sites have water risk or water stress levels that are High or Extremely High. Therefore, at the time of the assessment, there was no water withdrawal or water discharge in areas with "High" or "Extremely High" water stress.

In the future, we will continue to reduce water consumption and improve recycling rates, mainly at sites with Medium-High water stress, and we will strive to maximize resource circulation.

Assessment of Water Risk and Water Stress at Production Sites[1] (FY2022)

(Number of Production Sites/Percentage)

Risk Level[2]	Water Risk[3]				Water Stress[4]			
	Japan	Asia	Total	Percentage	Japan	Asia	Total	Percentage
Low	4	0	4	57%	3	1	4	57%
Low-Medium	1	2	3	43%	2	0	2	29%
Medium-High	0	0	0	0%	0	1	1	14%
High	0	0	0	0%	0	0	0	0%
Extremely high	0	0	0	0%	0	0	0	0%
Total	5	2	7	100%	5	2	7	100%

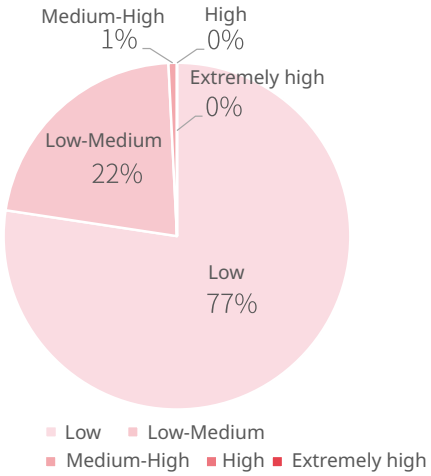
[1] Production sites Japan: Kohoku Plant, Wakaho Plant, Takaoka Plant, Arai Plant and Kyogase Plant
Asia: KOREA SHINKO MICROELECTRONICS CO., LTD. (KSM)
SHINKO ELECTRONICS (MALAYSIA) SDN. BHD. (SEM)

[2] According to Aqueduct assessment criteria

[3] Aqueduct assessment index "Overall Water Risk"

[4] Aqueduct assessment index "Baseline Water Stress"

Water Withdrawal Rate According to Water Stress Level (FY2022 Results for Production Sites)



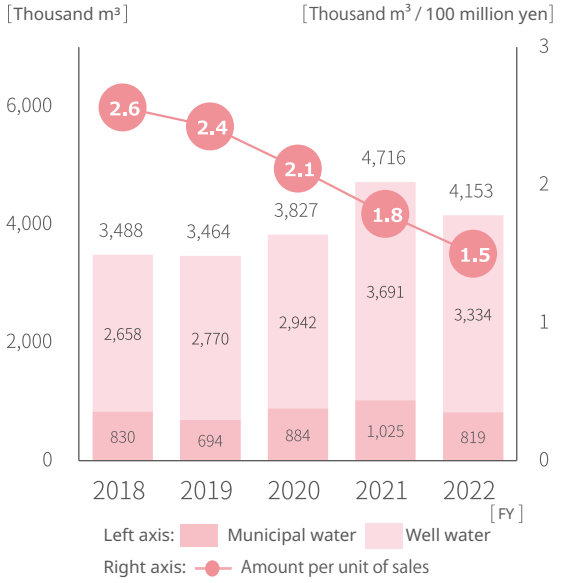
●Results of Activities

Reporting boundary: Shinko Group in Japan

Our target for FY2022 was to "reduce water consumption by at least 0.5% of FY2020 level (by 19,329 m^3 or more)," but we far surpassed that to achieve a 0.8% (30,974 m^3) reduction. Together with the result for FY2021 (56,671 m3), this amounted to a 2.3% (87,645 m^3) reduction, meeting the reduction target of 2% (76,000 m^3) set forth in the Environmental Action Program (Stage 10).

Water consumption per sales[5] has decreased as a result of these activities to reduce water consumption. We will continue to promote these initiatives.

Total Water Withdrawal and Amount per Unit of Sales



[5] Amount per unit of sales: Amount of water withdrawal per 100 million yen of sales

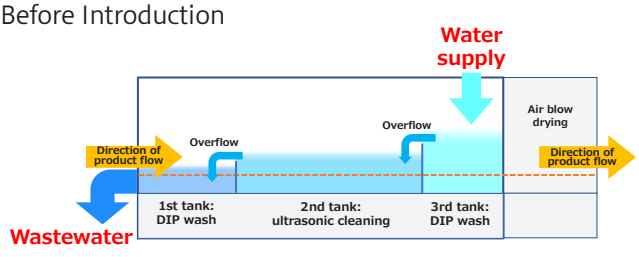
Examples of Water Consumption Reduction Activities

We approach water consumption reduction activities from the standpoint of both equipment and processes. This mainly involves reusing water in manufacturing processes, strengthening the review of the water supply for use in product washing, etc., and streamlining our production lines.

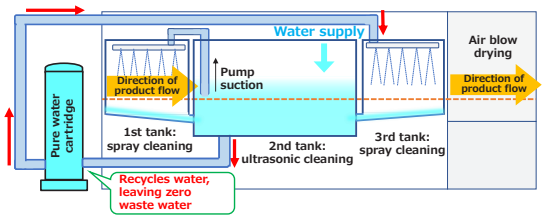
〈Water Reduction through Wastewater Reuse〉

At the Takaoka Plant, water-purifying washing machines are being introduced to reduce the amount of water used in the washing process. In the past, pure water was supplied at all times, and the entire amount of dirty water was disposed of as wastewater after washing. When our facilities are upgraded, the new water-purifying washing machines are being introduced. This will provide a significant reducing effect on water consumption. So far, water consumption has been reduced by 2,142 m^3/year in the one line where the new washing machine was introduced in FY2022. We will continue to introduce water-purifying washing machines to other production lines as we upgrade our facilities.

Before Introduction



After Introduction



〈Water Reduction through Automation of Water Management〉

The Takaoka Plant is using the opportunity of the upgrading of the plating equipment to automate the management of water supply tanks. Water supply is switched on or off according to the flow status of products, and the water supply is controlled to the optimal amount to reduce waste. So far, water consumption has been reduced by 1,283 m^3/year in the facility where automation was introduced in FY2022.

〈Water Reduction by Streamlining Production Lines〉

In our plants, we are consolidating operating facilities by using common manufacturing specifications and jigs, etc., for different products in order to streamline the production lines. Through these efforts, we were able to reduce water consumption in the manufacturing process at the Arai Plant by 5,780 m^3/year in FY2022.