

Resource Circulation

Resources such as raw materials and water are indispensable for the manufacturing of the Shinko Group, and resource circulation is also a material issue for the Group in order to create a sustainable society and reduce the risk of business continuity. Therefore, we have set medium- to long-term environmental targets for "waste reduction" and "reduction of water use" to maximize effective use of resources and recycling, and are promoting activities aimed at realizing a recycling-oriented society.

Waste Reduction

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

We are actively promoting waste reduction and recycling in accordance with the Basic Act on Establishing a Sound Material-Cycle Society, which stipulates (1) reduction of waste generation, (2) reuse, (3) recycling, and (4) heat recovery.

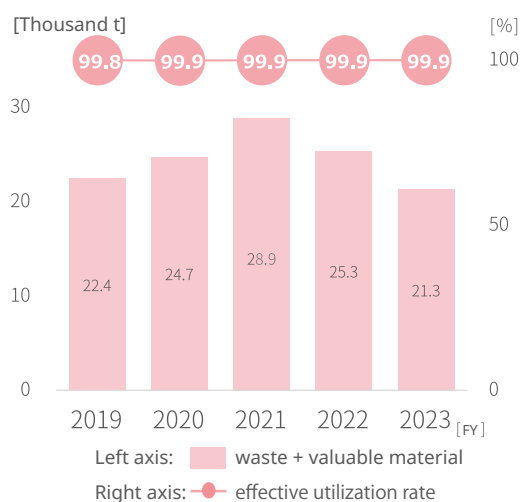
Reporting boundary: Shinko Group in Japan

Effective Utilization of Waste

The Shinko Group in Japan achieved zero emissions in FY2003 by effectively utilizing wastes and reducing landfill disposal and simple incineration (disposal methods not making effective use of waste heat from incineration or residual materials after incineration) to zero in order to 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.

Trends in Waste + Valuable Material and Effective Utilization Rate



Proper Disposal of Waste

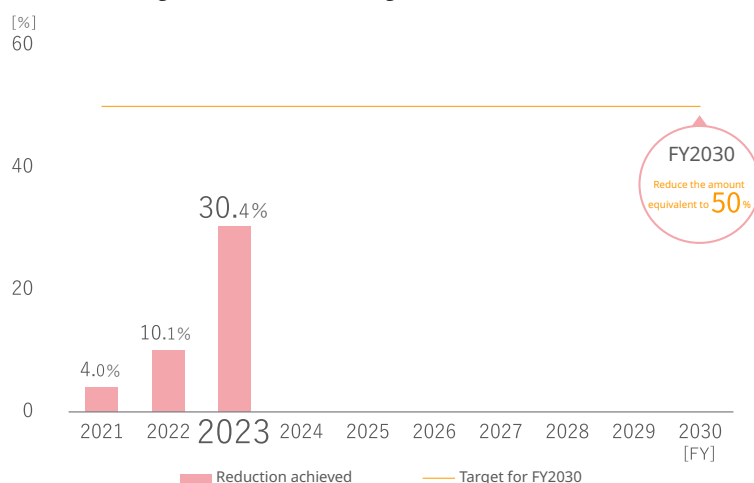
In accordance with the Act on Waste Management and Public Cleaning, we outsource disposal properly to industrial waste disposal contractors and confirm proper disposal once a year through on-site inspections, etc. No improper disposal was found at the contractors in FY2023. We also properly dispose of 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.

Results of Activities

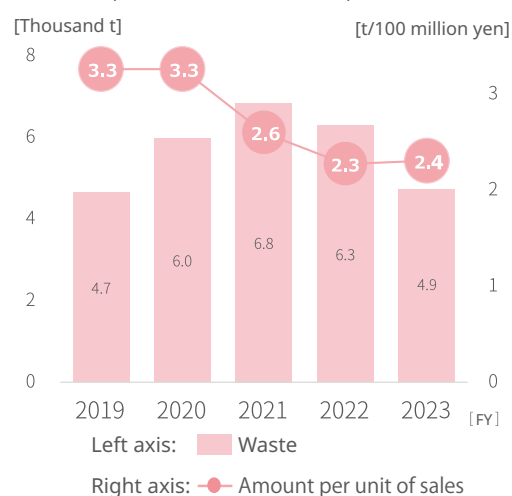
Since FY2023, we have divided our activities into two divisions, the manufacturing division and the facility management division, and clarified the targets of each division's activities. The manufacturing division mainly promoted the conversion of solid waste into valuable resources through thorough sorting, while the facility management division reduced waste by processing liquid waste from production in-house. As a result, we reduced waste by 1,218 tons, equivalent to 20.3% of the amount of waste generated in FY2020, the base year for the medium- to long-term environmental targets.

As a result, we were able to reduce waste by the equivalent of 30.4% over the three-year cumulative total since FY2021, in line with our medium- to long-term environmental target (FY2030) which is to reduce the amount equivalent to 50% of the base year.

Medium- to Long-term Environmental Targets Cumulative Waste Reduction Results



Gross Output of Waste, and Amount per Unit of Sales¹



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

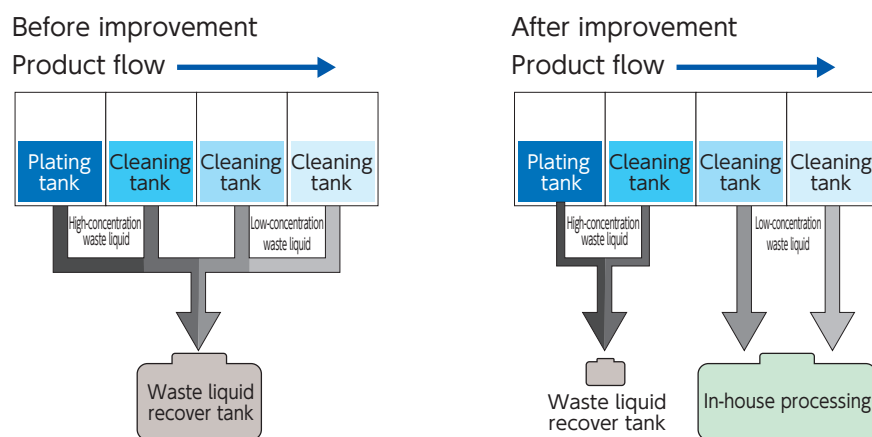
Examples of Waste Reduction Activities

1. Promotion of the conversion of waste into valuable materials through thorough sorting
2. In-house processing of waste liquids
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. Reduction of debris and waste through process improvement

●Reduction of waste through in-house treatment of liquid waste

Waste liquids that are not treated in-house are discharged as waste, and we are analyzing our processes and studying and implementing measures to treat the waste liquids in-house to the greatest extent possible. In order to treat the wastewater in-house, the concentration of the wastewater must be low. In the process where the measures were taken this time, however, all wastewater of different concentrations were recovered to the same tank, which increased the concentration of the recovered wastewater. Therefore, we separated the low-concentration liquid waste that could be treated in-house from the high-concentration liquid waste and recovered it through piping, thereby realizing in-house treatment of approximately 90% of the liquid waste.

As a result, we were able to reduce waste by 838 tons (in FY2023).



●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.

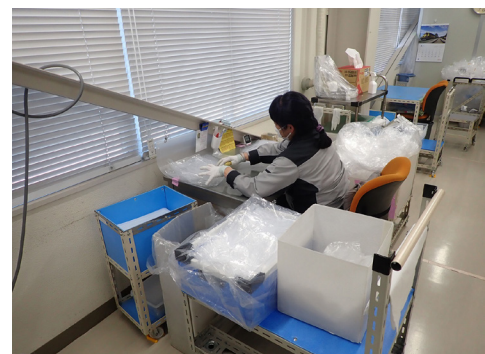
Activities in FY2023

Initiatives	Results	Main initiatives
Reduction of plastic material use	0.17 t reduction	• Switching product packaging tape from plastic to paper
Reduction of waste plastic	74.8 t reduction	• Conversion of waste plastic into valuable resources through thorough sorting • Extending the life of plastic parts using newly devised manufacturing processes

We will continue our efforts to reduce the amount of plastic materials used and waste plastic.

●Waste plastic sorting for conversion into valuable resources

Shinko Technoserve Co., Ltd. ("STS"), a Group company, is responsible for sorting waste plastic to convert it into valuable resources (recycling). In order to do so, a large number of man-hours are required to remove foreign substances such as labels and to sort the waste plastic. In addition, waste plastics that are too small to be converted into valuable resources on a plant-by-plant basis are collected from each plant and sorted into a large quantity to be converted into valuable resources. Although this is a time-consuming process, it contributes to the reduction of waste and the recycling of plastics.



(Label removal by STS)

● Conversion of film cores into valuable resources

The core that remains after the film material is used is a valuable material that can be recovered, but because the film remains on the core, it has been treated as waste. It is necessary to separate the core from the film for making the core valuable, however, manual sorting was inefficient and difficult because a portion of the film would fly off in small pieces, then adhere to the surroundings and workers due to static electricity.

STS therefore manufactured a device for separating cores and film using waste materials. This equipment facilitated the separation of cores and films, and achieved the following significant results.

We will continue to improve the equipment for more efficient sorting.

Effects of sorting (FY2023)

- Reduction of waste plastic and conversion of plastic materials into raw materials: 26 tons
- Cost reduction: 3,191 thousand yen/year



(Separator for core and film)

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 use 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.

The Shinko Group uses the World Resources Institute's (WRI) Aqueduct, one of the global assessment tools for water risk, to assess water risk, including physical risk, regulatory risk, and reputational risk, at its production sites in Japan and overseas to confirm the status of its production sites.

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.

Assessment of Water Risk and Water Stress at Production Sites² (FY2023)

(Number of Production Sites/Percentage)

Risk Level ³	Water Risk ⁴				Water Stress ⁵			
	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%

² 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)

³ According to Aqueduct 3.0 assessment criteria

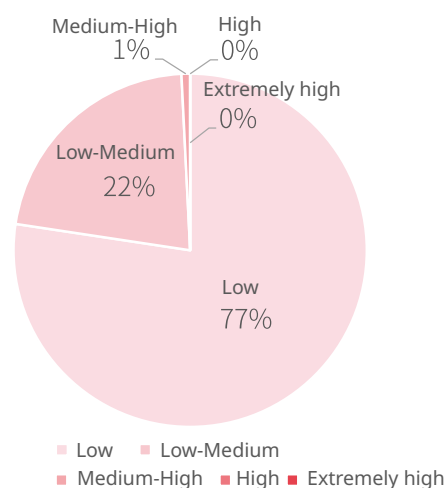
⁴ Aqueduct 3.0 assessment index "Overall Water Risk"

⁵ Aqueduct 3.0 assessment index "Baseline Water Stress"

As for the amount of water withdrawal, 99% of the water is taken from areas with water stress levels of "Low-Medium" or lower, as shown in the pie chart on the right.

However, we will continue to reduce water use and improve the water recycling rate to maximize resource circulation, taking into account that the water risk and water stress situation is constantly changing.

Water Withdrawal Rate According to Water Stress Level⁶ (FY2023 Results for Production Sites)



⁶Water stress levels defined by aqueduct 3.0

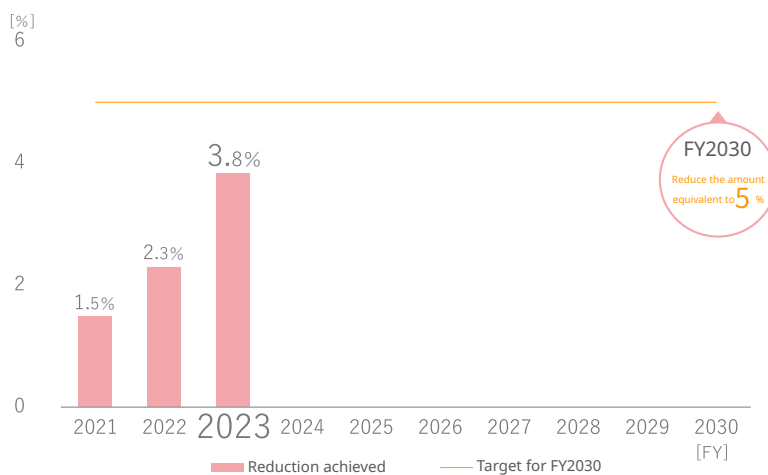
Results of Activities

Reporting boundary: Shinko Group in Japan

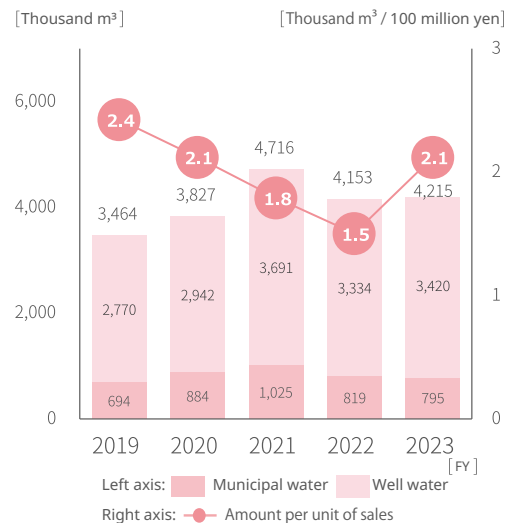
In FY2023, we achieved the rate of reducing water use at 1.5% (59,166 m³), far exceeding our target of reducing water use by at least 1.0% (38,270 m³) of the FY2020 level. From the viewpoint of resource input, we were able to avoid the input of 59,166m³ of new water resources. As a result, we have reduced water use by 3.8% (146,811m³) in the three years since FY2021, when we started the activities for the medium- to long-term environmental targets, and we are on track to achieve the target for FY2030 of a 5% reduction.

We will continue to promote initiatives to further reduce water use, as water use is expected to increase due to the launch of a new plant and increased production.

Medium- to Long-term Environmental Targets Cumulative Results of Water Use Reductions



Total Water Withdrawal and Amount per Unit of Sales⁷



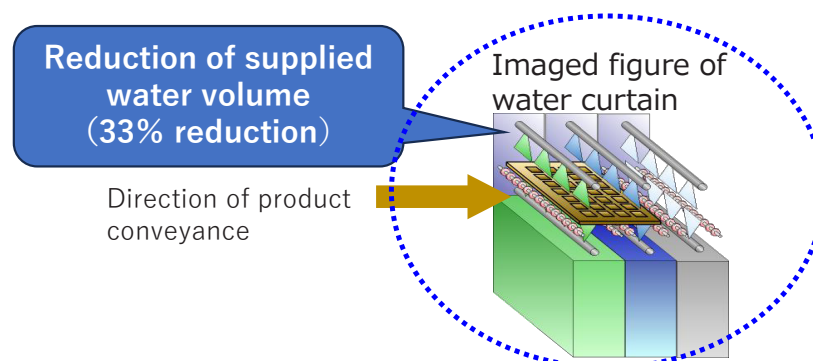
⁷ Amount per unit of sales: Amount of water withdrawal per 100 million yen of sales

Examples of Water Use Reduction Activities

Water use reduction activities are approached from both facility and process perspectives, focusing on water reuse, review of water supply for product cleaning, and rationalization of production lines.

Water reduction through process review

At the Takaoka Plant (Nakano City, Nagano Prefecture), water use was reduced by reviewing the usage of existing equipment. The plant has water curtains to prevent air containing chemicals in the plating process from leaking out of the equipment, and it was confirmed that cutting the amount of water supplied for the water curtains by about 33% that no adverse effect. We were able to reduce water use by a total of 2,310 m³ by extending the project horizontally to other equipment.



Reuse of Wastewater from Manufacturing Processes

We have long been working to recycle wastewater discharged from manufacturing processes back to clean water, which is then used again in the manufacturing process. The average water recycling rate for all plants is over 40%, contributing to the reduction of new water withdrawal.

Improving the water recycling rate through the separate recovery of wastewater

The Chikuma Plant (Chikuma City, Nagano Prefecture), which was completed in December 2023, has adopted, from the design when the plant was built, a wastewater treatment flow that recovers wastewater discharged from the manufacturing process by sorting it into small pieces, with the aim of further using water effectively. This has made it possible to recycle a larger amount of water.

When the Chikuma Plant reaches the operating rate expected at the time of plant construction, the water recycling rate at the Chikuma Plant is expected to be 1.3 times higher than that of our existing plants.

