

4.2.3 Water Resource Management

Zig Sheng continues to collect statistics on the water consumption of each unit, review whether there is unreasonable water consumption on a monthly basis, and implement improvements as needed. The plant has two wastewater treatment facilities, where the treated water is regularly tested for discharge quality. The facilities adhere to approved water pollution prevention plans and possess the required permits. The primary water sources are tap water and recycled water. In recent years, the Company has been planning water-saving initiatives, such as rainwater recycling system, reclaimed water recycling, condensate water recycling, etc. In addition to water conservation in the process, we also continue to promote the importance of water conservation in daily life. Based on average water consumption over the past five years, the goal is to reduce consumption by 2% each year. The 6.9% reduction in water consumption in 2024 exceeded the target value.

Main water conservation plans for 2024:

Water-saving initiatives	Results
The pure water system has been changed to RO/EDI/MD	Recycled water increased by 13,045 tons, reducing wastewater by 13,045 tons, reducing hydrochloric acid usage by 30,670 kg, and reducing liquid caustic soda usage by 38,377 kg. Additionally, the conductivity and oxygen content of pure water also dropped to below 1 ppm, significantly improving quality.
Air compressor condensate was recycled and reused,	recovering 335.8 tons of water.
Reuse of waste liquid distilled water	recovering 9 tons of water.

The water consumption of each factory in Taoyuan is as follows:

Water consumption statistics		
Year	Water consumption (tons)	Density
2022	545,553	3.18
2023	512,364	3.35
2024	588,123	3.29

Note: Intensity = Water consumption (tons) / Output (tons)

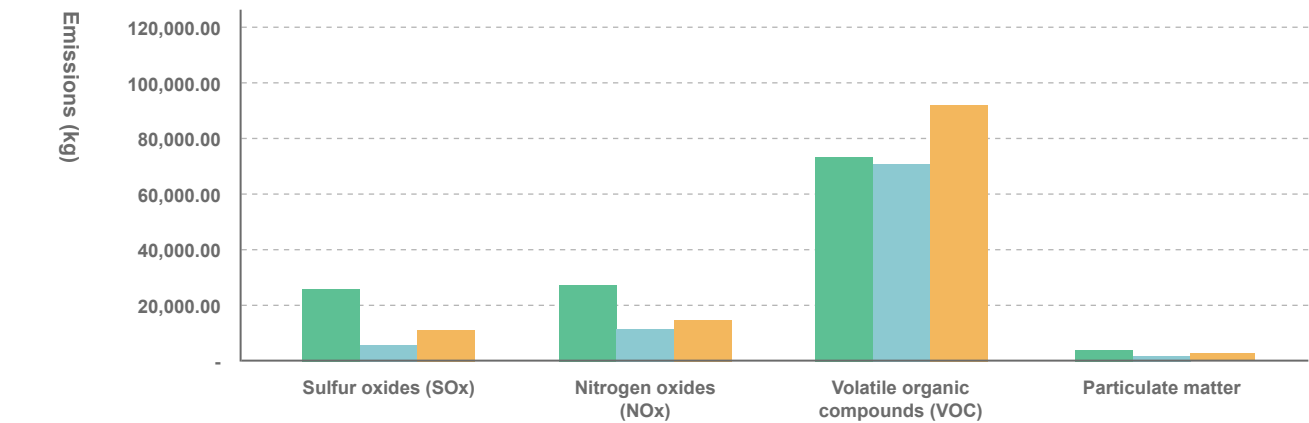
4.3 Energy Transformation

4.3.1 Natural gas

Since 2020, we have gradually converted seven oil-fired boilers to natural gas boilers to reduce emissions and comply with regulatory standards. In 2024, we used 6,080 m³ of natural gas, reduced coal use, and reduced carbon emissions by approximately 8,554 metric tons of CO₂e. We plan to replace another heavy oil boiler burner with natural gas burner before the end of 2025 and install a high-efficiency air preheater to lower exhaust gas temperature and increase combustion air temperature, thereby reducing natural gas consumption. In 2024, the increase in overall air pollutant emissions was due to increased production and adjustments to energy usage ratios based on cost considerations.

Year-by-year comparison of air pollutant emissions

Note: Calculated based on the emission coefficients announced by the Ministry of Environment



Year	Sulfur oxides (SOx)	Nitrogen oxides (NOx)	Volatile organic compounds (VOC)	Particulate matter
2022 Total	24,833.17	27,611.26	74,991.52	2,692.87
2023 Total	5,979.93	10,236.66	70,845.24	1,052.08
2024 Total	10,035.77	16,561.81	90,320.99	1,464.42

4.3.2 Solar power

Zig Sheng has been actively building renewable energy facilities since 2018 and continues to build solar power panels on the roofs of its plants, reaching a capacity of 3,368.38 kW. We will continue to make plans to find space to install more solar panels to increase our solar energy capacity in the future. In 2024, the power generation amounted to 3,780,455 kWh, a reduction of approximately 1,868 tons of CO₂e. Starting in January 2025, part of the solar energy generated will be designated for self-consumption.



Year	Total power generation (kWh)
2022	3,455,053
2023	4,022,511
2024	3,780,455

*Carbon reduction = Electricity generation x Electricity emission factor, calculated based on the 2023 electricity emission factor of 0.494 kgCO₂e/kWh

4.4 Circular Economy

4.4.1 Waste Management

Zig Sheng takes waste management very seriously. Its primary wastes include domestic garbage and waste generated during the production process. To avoid ecological harm from waste, the factory's general industrial waste, sludge, coal slag, etc. are all entrusted to qualified vendors for disposal and treatment, and are reported regularly in accordance with regulations.

All waste generated is classified as non-hazardous industrial waste. The total amount removed in 2024 was 1,666.29 metric tons, an increase of approximately 35% compared to the previous year. The increase in coal slag production was primarily due to higher overall output and increased use of coal to manage rising operational costs. Furthermore, waste paper and waste plastic were added to the list of reported items in 2024.

In 2024, the goal was to reduce the average output of combustible and non-combustible waste generated by 10% compared to 2022-2023. In 2024, the amount of combustible and non-combustible waste totaled 391.4 tons, a decrease of 77.6 tons from 469 tons in 2023, or a decrease of 16.5%.

The declared waste disposal volume in 2024 is as follows:

Type of Waste	Treatment Method	Waste disposal volume		Difference
		2023	2024	
Combustible waste (domestic waste)	Incineration	300.40	251.60	-48.80
Non-combustible garbage (mixture of waste plastics)	Incineration	168.60	139.80	-28.80
Organic waste liquid or waste solvents	Incineration	14.62	19.31	4.69
Wastewater (pH value between 6.0-9.0)	Incineration	8.06	9.72	1.66
Waste lubricants	Physical treatment	91.47	101.68	10.21
Bottom ash	Recycled and reused	542.16	744.53	202.37
Organic sludge	Heat treating	102.77	109.73	6.96
Waste paper	Public announcement of reuse	-	256.35	256.35
Plastic waste	Public announcement of reuse	-	33.57	33.57
Total		1,228.08	1,666.29	438.21

Note: Waste statistics include Plant 1 to 5

Unit: Tons

4.4.2 Resource Recycling and Reuse

Each year, the Company sets annual recycling targets in accordance with its environmental policy. For domestically produced packaging materials, we select recyclable and reusable materials (bulk bags, spinning spinnerets, and paper tubes) that account for the largest proportion of these materials and include them in recycling management. We keep monthly statistics on the quantity, recovery rate, and achievement rate of recycled packaging materials. The implementation results are reported to senior management in the management meeting on a quarterly basis. In 2024, most of these targets had been achieved, as shown below:

The analysis indicated that the possible reason for the second-spin paper tubes not meeting the target was an increase in customer inventory, which had not yet been used and therefore could not be recycled.

Item	Year	2022	2023	2024		2025
		Actual Value	Actual Value	Target Value	Actual Value	Target Value
Polymerization Plant-polymer bag recycling rate		100%	100%	100%	100%	100%
Spinning Plant-hole board recycling rate		100%	100%	100%	100%	100%
Spinning Plant I-paper tube recycling rate		87%	93%	85%	88%	85%
Spinning Plant II-paper tube recycling rate		100%	100%	100%	99%	100%

Recycling rate: Recycled amount ÷ Amount of domestic sales x 100%

4.4.3 Eco-friendly Recycled Products

GRS/RCS environmentally friendly products

The Company implements its environmental policy resource recycling and reuse by producing high-quality recycled products that meet international environmental standards. The raw materials used are primarily waste fiber generated within spinning mills, along with discarded fishing nets and recycled bottle flakes. These materials are recycled and integrated with the spinning process to produce seven product categories: nylon chips, nylon filament, polyester granules, polyester filament, processed yarn, air-textured yarn, and compound materials. The Company obtained GRS (Global Recycled Standard) certification in 2015 and obtained RCS (Recycled Claimed Standard) certification in 2024. All products are annually verified by the third party, the International Down and Feather Testing Laboratory (IDFL). In addition to meeting market and customer demands, we also increase product value and improve profitability, all while contributing to environmental sustainability.

The Company completed a carbon footprint inventory of its nylon chip products in 2022, which was verified by a third party (BSI). The results of the inventory showed that the use of recycled nylon chips resulted in a 95-97% reduction in carbon footprint when compared to regular nylon chips. Green products accounted for 10% of total revenue in 2024, achieving the 2025 target ahead of schedule.

Management of restricted chemical substances

In order to prevent the use of restricted substances during production, we start from procurement control at the very beginning, requiring suppliers to comply with ZDHC Conformance or related safety standards and provide inspection reports and Safety Data Sheets (SDS). After entering the plant, the raw material acceptance operation is carried out to confirm again whether the chemicals contain restricted substances, and the list of chemicals is regularly updated to keep track of all the chemicals used in the products. The production data is stored in accordance with the regulations and is traceable.

ISCC environmentally friendly products

ISCC (International Sustainability Carbon Certification) is a globally applicable sustainability certification system. In response to the global trend of carbon reduction, the adoption of ISCC can give businesses greater long-term development advantages. Through ISCC certification, we ensure supply chain transparency and compliance with stringent environmental standards to meet global customer demand for green products. Nylon chips and processed yarn products of the Company's Guanyin Plant No. 2 were verified by a third-party, Bureau Veritas (BV), at the end of 2024, and obtained the certification in January 2025.



GRS Certification



RCS Certification



ISCC PLUS certification