Building of a Recycling-oriented Society

Basic Approach

A recycling-oriented society is a key management priority. We process industrial waste and waste materials in line with the following priorities: 1) reduction of the discharge of industrial waste and waste materials generated by business activities; 2) reuse or recycling of industrial waste and waste materials discharged despite reduction efforts; and 3) appropriate treatment of industrial waste and waste materials not reused or recycled. This order may not apply when another ordering is deemed more effective, and while recycling is generally classified into material, chemical, and thermal (heat recovery), we include chemical recycling in "material recycling." We strive to prevent pollution of the atmosphere, water, and soil, reduce water consumption, and protect the environment to secure sanitary water supplies for all stakeholders.

Activities

To use limited resources effectively, we work to reduce waste discharge, increase the recycling rate, and apply appropriate waste treatment methods. Waste paper derived primarily from Information & Communication and Living & Industry operations makes up the largest portion (60%) of total waste discharged. The next largest portions are waste plastics in the Living & Industry field (21%) and waste acid and metal scrap from Electronics.

We strive to increase material recycling rates by converting waste paper into recycled paper, segregating waste plastics, processing composite plastics into pellets, and applying recycling techniques for other materials. Waste acid is treated in-house to lower disposal volumes. For hazardous waste regulated under Annex VIII (List A) of the Basel Convention, we confirm total discharge and make intensive efforts to reduce discharge and appropriately manage and treat waste. The list on page 135 shows results and targets for discharge, discharge-reduction, and recycling of plastic industrial waste, including waste from plastics in products. These are the primary measures we take for plastic circulation in compliance with Japan's Plastic Resource Circulation Act enforced in April 2022. For the sustainable use of water, individual sites assess water risks, reduce water consumption, and control effluent quality. We continue to pursue effective use of limited resources by reducing waste discharge and intensifying recycling.

Waste Management Programs

We control waste through a cycle of monitoring, target-setting, and improvement in resource efficiency within the ISO 14001 framework. We monitor and measure waste, and implement reduction initiatives. We also assess environmental impact as a basis for setting specific targets for resource efficiency and regularly review and manage progress towards the targets. We are enhancing resource efficiency by implementing initiatives in conformance with ISO 14001, which provides a clear framework for continual improvement in waste management.

● Waste Audits to Identify Opportunities for Improving Waste Performance

Waste audits assess waste generation and identify specific measures for efficiency and reduction. We harness the ISO 14001 framework to conduct internal audits at business sites and audits by our Ecology Center, implement specific measures to ascertain the amount of waste generated, and promote recycling for resource recovery.

● Action Plans to Reduce the Amount of Waste Generated

When identifying key points of waste generation through audits, we work to reduce waste generated by (1) identifying sources in manufacturing processes, (2) making improvements by reviewing manufacturing conditions, (3) implementing equipment-related measures, and (4) reviewing product designs. For equipment, we are harnessing smart factory automation and new technologies such as AI-based inspections and quality monitoring.

● Quantified Targets to Minimize Waste

Our medium-and-long-term environmental targets include a 60% reduction in final landfill waste and 9% point increase in waste plastic material recycling rate compared to fiscal 2017. Annual targets for these two metrics are set with Board approval and individual targets are set for each site.

● Investment in Technological Innovation and R&D to Minimize Waste

DX and SX are important business investment areas in the Medium Term Plan. DX enables waste to be minimized in the Information & Communication business through information distribution without print media and management without forms. In manufacturing, smart factory automation and new technologies such as AI-based inspections and quality monitoring enable minimization of waste from production processes. In the packaging business, our GL BARRIER is a form of sustainable (SX) packaging with world-class barrier performance. This significantly contributes to waste reduction in production by reducing three types of film and two lamination processes to two types of film and one lamination process.

● Training for Employees on Waste Reduction

To improve environmental literacy on waste reduction, we provide training on social trends regarding the environment and the key points of each year's environmental activities.

- Rank-based training (group training, e-learning)
- Optional training
- Internal auditor training
- For all employees (e-learning)

● Integration of Recycling Programs to Reduce Waste Sent to Landfills

To reduce final landfill disposal, we are integrating recycling programs by waste type—such as converting waste paper into recycled paper and improving material recycling rates for plastics through sorting and pelletizing composite materials.

Water Efficiency Management Programs

We control water efficiency through monitoring, target-setting, and continual improvement in resource efficiency within the ISO 14001 framework. Every Group site evaluates water risks, reduces water consumption, controls effluent quality, and implements water efficiency enhancement measures. We also assess impacts on the environment as a basis for setting specific resource efficiency targets, with progress regularly reviewed and managed. We are enhancing resource efficiency by implementing initiatives in conformance with ISO 14001 requirements, which provide a clear framework for continual improvement in water efficiency management.

● Water Usage Assessments to Identify Opportunities to Improve Water Efficiency

To reduce water usage, sites monitor and visualize water withdrawal by source and wastewater by discharge point, allowing employees and related personnel to ascertain the status of water usage. This enables identification of wastewater generation processes caused by unnecessary water use and facilitates efficient water management by promoting proper use.

● Initiatives to Reduce Water Consumption

To reduce water consumption, we identify wastewater generation processes caused by unnecessary consumption, promote proper usage, and invest in water-saving and rainwater utilization.

● Measures to Improve Wastewater Quality

We have installed wastewater treatment facilities corresponding to specific water use and pollutant conditions at individual sites. Wastewater quality is measured in accordance with standards for regulated substances, temperature, and concentration for both river discharge and sewage, based on required items and legally mandated methods. Regular measurements are also conducted and monitored by public agencies as needed. Data is compiled monthly, and annual pollutant load totals are published with third-party assurance.

● Setting Targets for Reducing Water Consumption

With approval from the Board, the following two items are set as TOPPAN Group Medium-and-Long-Term Environmental Targets for Fiscal 2030.

- Achieve water withdrawal targets for at least 50% of sites (4 out of 7 sites) with high water risk (water stress exceeding 40%)
- Ensure no cases of action taken by authorities due to exceeding regulatory threshold values

Each site sets individual targets to achieve these goals.

● Application of Water Recycling

At Electronics plants with significant effluent discharge, recycling systems facilitate efforts to reduce water withdrawal and effluent discharge levels by recovering and reusing wastewater.

● Training for Employees to Raise Awareness about Water Efficiency Management Programs

Two types of training are provided to employees for boosting their awareness of water efficiency improvement. One is included in the following training to improve environmental literacy, where employees learn the necessity of water efficiency management programs, including knowledge on social water risks and water stress.

- Rank-based training (group training, e-learning)
- Optional training
- Internal auditor training
- For all employees (e-learning)

The other is included in training to raise awareness regarding effective use of resources under ISO 14001, as education toward improving water consumption.

● Water Risk Assessment for Each Site

To ensure the sustainability of business activities, we conduct water risk assessments for all sites. For assessments, we utilize multiple international assessment tools such as the World Resources Institute's (WRI) global water risk assessment tool Aqueduct, the World Wide Fund for Nature's (WWF) Water Risk Filter, and the Waterplan platform.

Plastic Circulation Targets based on Japanese Legislation*1

Reduction/recycling targets
Fiscal 2024: Increase the material recycling (MR) rate by +1.4%pt year over year
Fiscal 2025: Increase the material recycling (MR) rate by +1.9%pt year over year

	Company	Fiscal 2024 Results		Evaluation
		Discharge (t)	MR Rate Increase/ Decrease from Fiscal 2023	Unachieved: × Achieved: ○
High-volume waste dischargers	TOPPAN Package Products Inc.	17,002	9.2%pt	○
	TOPPAN Communication Products Inc.	1,459	3.5%pt	○
	TOPPAN Decor Products Inc.	1,402	2.3%pt	○
	Tamapoly Co., Ltd.	1,251	-2.9%pt	×
	TOPPAN Plastic Inc.	598	-1.3%pt	×
	TOPPAN Inc.	588	15.4%pt	○
	TOPPAN Infomedia Inc.	505	4.4%pt	○
	TOPPAN TOMOEGAWA Optical Films Inc.	388	-38.6%pt	×
	TOPPAN Electronics Products Inc.	256	-4.4%pt	×
Waste dischargers	Toppan Packaging Service Co., Ltd.	140	7.1%pt	○
	TOPPAN Colorer Inc.	121	2.1%pt	○

*Listed companies discharging waste of 100 tons or more a year.
*1 Targets for the discharge, discharge-reduction, recycling of plastic industrial waste (including plastics used in products), and other plastic circulation measures based on the Plastic Resource Circulation Act of Japan

Discharge and Treatment of Hazardous and Non-hazardous Waste

Fiscal Year		2022	2023	2024
Total waste discharge (t)		297,211	288,961	288,178 ☑
Hazardous waste (t)	Discharge	25,953	22,295	23,209
Breakdown by treatment method (t)	Material recycling	19,954	16,145	16,486
	Thermal recovery	3,370	3,825	4,621
	Simple incineration	1,106	1,192	1,090
	Landfill disposal	1,522	1,134	1,012
	Other	0	0	0
Non-hazardous waste (t)	Discharge	271,258	266,666	264,969
Breakdown by treatment method (t)	Material recycling	227,834	222,302	223,307
	Thermal recovery	35,782	37,490	35,592
	Simple incineration	1,785	3,057	1,713
	Landfill disposal	5,857	3,816	3,357
	Other	0	2	0

Values, Results, and Evaluation of Environmental Targets for Fiscal 2024

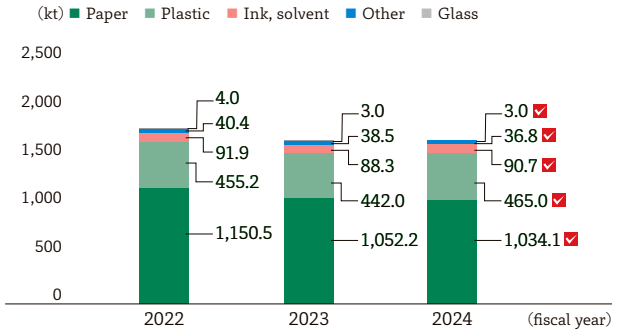
	Performance Target	Performance Indicator	Fiscal 2024			
			Target Value	Result	Achievement Rate	Evaluation
Contributing to resource circulation	Reduce final landfill waste disposal	Final landfill waste disposal	4,466 t	4,369 t ☑	102.2%	A
	Circulate resources	Waste plastic material recycling rate	51.0%	54.9%	107.1%	S
Optimal water use	Prevent water pollution	No. of actions taken by authorities in response to exceeded regulatory standards	0	1	0%	C
	Reduce water withdrawal in regions with highter water risk	No. of sites in high-water-risk regions that implement water-saving measures	4 sites	5 sites	125%	S

Evaluation criteria:
S: Results achieved far surpass the targets (achievement rate [%] ≧ 105)
A: Targets achieved (100 ≦ achievement rate [%] < 105)
B: Activities fully carried out, but targets unachieved (70 ≦ achievement rate [%] < 100)
C: Activities insufficient (achievement rate [%] < 70)
Achievement rate: 200 – (values actually achieved / target values) x 100 [%]
(The achievement rate for material recycling is calculated as 200 – (target value/actual value) x 100[%])

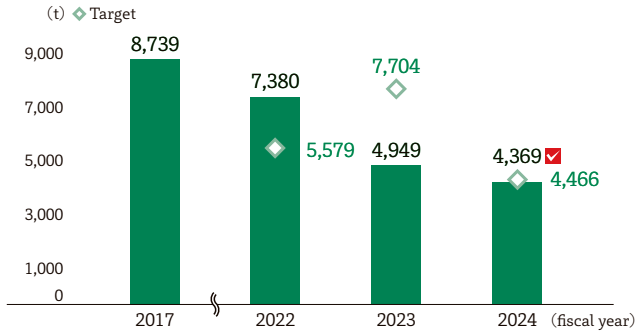
*Every indicator assured by an independent assurance provider is marked with an assurance stamp ☑.

We evaluate and disclose Groupwide performance data, including that from overseas Group subsidiaries.

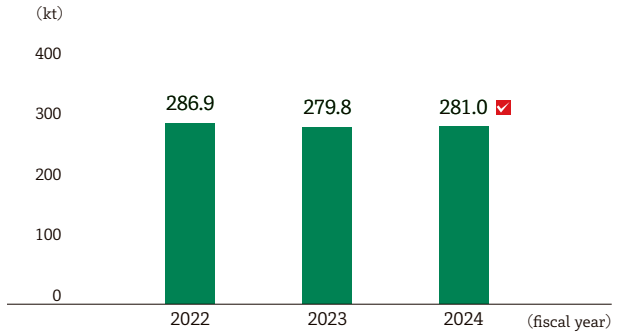
Material Input



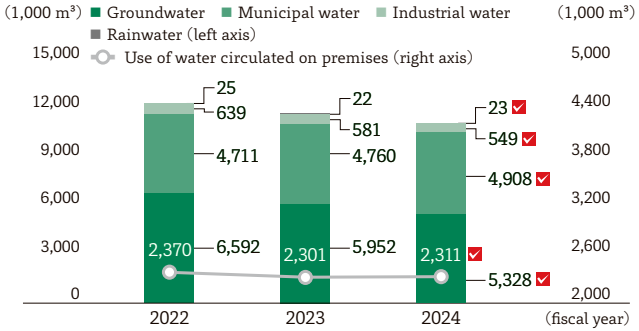
Final Landfill Waste Disposal



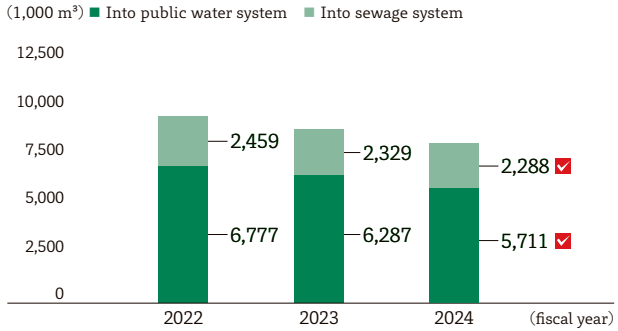
Waste Recycling



Water Withdrawal



Effluent Discharge



Waste Plastic Material Recycling Rate

*Every indicator assured by an independent assurance provider is marked with an assurance stamp ☑.