Environmental Data

Environmental Performance Data

Activity results, performance data

Major Types of Environmental Burden (Groupwide: covering all Group companies around the world) ☑

Category		Chief Component	Environmental Burden (Groupwide)
INPUT	Material (t)	Total input	1,803,104
		Paper	1,280,838
		Ink, solvent	95,515
		Plastic	376,978
		Glass	6,187
		Other	43,586
	Energy (TJ)*1	Total consumption	20,602
		Fuel	4,513
		Electricity, steam	16,088
	Water (1,000 m^3)	Total consumption	12,438
		Industrial water	611
		Municipal water	4,873
		Groundwater	6,929
		Rainwater used	25
		Use of water circulated on premises	2,913
	Chemical substances (t)*2	Handling of chemical substances designated under the PRTR law	4,791

Category		Chief Component	Environmental Burden (Groupwide)
OUTPUT	Atmosphere	CO_2 emission (t-CO_2)*3	1,187,710
		Scope 1	380,193
		Scope 2	807,517
		Release of chemical substances designated under the PRTR law (t)*2	57
		VOC emission into the atmosphere (t)*2, 4	3,721
	Water and soil environments	Total effluent discharge (1,000 m^3)	9,840
		Into public water system	7,305
		Into sewage system*6	2,535
		BOD (kg)	25,435
		COD (kg)	52,692
		Nitrogen discharge (kg)	23,789
		Phosphorous discharge (kg)	12,371
		Release of chemical substances designated under the PRTR law (t)*2	1
	Waste (t)	Total discharge*5	315,512
		Recycled	306,900
		Final landfill disposal	6,877

*1 Energy consumption associated with fuel and electricity consumption is calculated using the conversion factor specified in the Act on the Rational Use of Energy of Japan.

*2 The PRTR data and VOC emissions only cover domestic sites, including Group company sites.

*3 CO_2 emissions are calculated using the adjusted emission factor according to the method specified in the Guidelines for Calculating Greenhouse Gas Emissions from Businesses issued by the Ministry of the Environment (MOE) of Japan. CO_2 emissions associated with electricity consumption at overseas Group sites, however, are calculated based on the latest conversion factors published by the International Energy Agency (IEA). Scope 1 greenhouse gas emissions include CO_2 emissions derived from combustibles burned in incinerators.

*4 Emissions into the atmosphere are calculated based on the standards established by the Japan Federation of Printing Industries (JFPI) and the VOC emission inventory issued by the MOE of Japan.

*5 The total discharge of waste includes industrial waste of no value and waste materials of value sold or transferred as resources (both generated in association with business activities).

*6 Includes 10,415 m^3 of spring water from the premises of the Akihabara Sales Building.

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

Environmental Accounting

Activity results, performance data

Capital Investment for Environmental Conservation

(million yen)

Item		Major Content	Fiscal 2021	Increase/ Decrease from Fiscal 2020	Average for the Last Five Years
1	Investment in equipment to prevent pollution	Investment in equipment to prevent atmospheric and other forms of pollution (Including equipment to prevent water pollution)	591 (99)	286 (25)	1,131 (444)
2	Investment in equipment to conserve the global environment	Investment in equipment to conserve the global environment by mitigating global warming, etc.	1,514	100	1,156
3	Investment in equipment to circulate resources	Investment in equipment to realize the appropriate treatment, recycling, etc. of waste (Including equipment to use rainwater and reduce water consumption)	167 (7)	39 (2)	145 (4)
4	Investment in equipment to carry out environmental management activities	Investment in equipment to monitor and measure environmental burden, plant trees at operational sites, and implement other environmental measures	15	9	17
Total			2,287	434	2,449

Environmental Conservation Benefit

Item	Major Content	Increase/Decrease from Fiscal 2020	Fiscal 2021
Energy	Total energy consumption (TJ)	-711	20,602
Water	Water consumption (1,000 m^3)	-276	12,438
Atmosphere	CO_2 emission (kt-CO_2)	13	1,188
	Emission of dioxins (mg-TEQ)	1	7
Water and soil environments	Total effluent discharge (1,000 m^3)	-139	9,840
	BOD (t)	1	25
	COD (t)	7	53
Waste	Total discharge (kt)	-7	316

Environmentally Friendly Products (98 products as of August 2022)

Activity results, performance data

Business Field	Product	Standard Categories
Information & Communication	Ecothrough Card	Suitability for disposal
	Bulky Waste Processing Sticker	Resource saving (reduced use of materials)
	Eco Pack (life-size POP display)	Resource saving (reduced use of materials)
	Paper Desk Calendar	Use of recycled materials
	Ecology Calendar	Use of recycled materials
	Non-vinyl Chloride Lenticular Lens	Suitability for disposal
	Eco Pack Multipanel	Reusability
	Eco Floor Sticker	Suitability for disposal
	Eco Pack End Panel	Resource saving
	Eco Pack Stand (round type)	Resource saving
	Disk Tottokun Series	Resource saving, prolonged product life, recyclability, suitability for disposal
	Ultra-thin DM (brochures, etc.)	Resource saving, reduced energy consumption in production, recyclability
	Eco Pack Multipanel Mini	Reusability, prolonged product life, recyclability, easy separation and disassembly
	Multicube POP	Reusability, prolonged product life, recyclability, easy separation and disassembly
	Green Bankbook	Recyclability, suitability for disposal
	KAMICARD®	Biodegradability, use of safe materials, resource saving, recyclability
	KAMI-RFID CARD	Recyclability, use of safe materials, resource saving, easy separation and disassembly
	Printed materials with environmental logos	Reduced use of chemical substances, reduced use of hazardous substances, use of recycled materials, use of sustainable resources, use of renewable energy, carbon offsetting, labeling with environmental logos
Electronics	Flip chip ball grid array [FC-BGA] substrate (halogen free)	Suitability for disposal
	Color filter (resin black matrix [BM])	Use of safe materials, energy saving, reduced release of chemical substances, suitability for disposal
	Palladium pre-plated leadframe	Use of safe materials, reduced release of chemical substances, suitability for disposal
	Flip chip ball grid array [FC-BGA] substrate (lead free)	Use of safe materials, reduced release of chemical substances, suitability for disposal
Living & Industry	Toppan Ecowall	Reduced release of chemical substances, use of safe materials, suitability for disposal
	TOPPAN ECO SHEET	Reduced release of chemical substances, extension of product life
	GL BARRIER (Exceptional*)	Use of sustainable resources, resource-saving efforts
	Stand-up Pouch	Resource-saving efforts
	Bottled Pouch	Resource-saving efforts
	Plastic container made from recycled materials	Use of recycled materials
	TT Paper Can	Use of sustainable resources
	Ecotainer	Recycling, improvement in transport efficiency
	TL-PAK	Recycling, improvement in transport efficiency
	EP-PAK (EP-GL)	Improvement in transport efficiency, recycling
	EP-PAK (Al)	Improvement in transport efficiency
	Stand-up Laminated Tube	Resource-saving efforts
	Recyclen Cap	Recycling
Living & Industry	AP Carton	Improvement in transport efficiency
	Micro Flute	Resource-saving efforts, recycling
	TP-Tray	Recycling, use of sustainable resources
	Corrugated Board Cushioning Material	Recycling
	AD-Case	Resource-saving efforts
	Cartocan (Exceptional*)	Use of sustainable resources, recycling, visualization of environmental burden
	GL-C Bottle	Resource-saving efforts
	Jar Plus	Resource-saving efforts, recycling
	GL FILM Lined Paper Cup	Use of sustainable resources
	Double-wall Barrier Paper Cup	Resource-saving efforts
	Fluorine-free oil-repellent paper	Recycling
	In-mold Barrier Cup	Extension of product life, improvement in transport efficiency
	Easy Peel-off Thermo-Label	Recycling
	Eco Band	Reusability
	Paper carton with tamper-evident closure	Resource-saving efforts
	Clear UV-blocking Film	Use of sustainable resources
	BIOAXX (molding product)	Use of sustainable resources
	EL-Case	Resource-saving efforts, recycling
	Paper cup made from pulp from forest-thinning operations	Use of sustainable resources
	Cylindrical paper-composite container for refill	Use of sustainable resources
	High-resistance Flexible Pouch	Resource-saving efforts, improvement in transport efficiency
	BIOAXX (label)	Use of sustainable resources
	Aluminum-free Lid Material	Use of sustainable resources
	Multi-layer Blow Tube	Resource-saving efforts
	Steam-release Packaging	Reduced environmental burden during use
	Air Hold Pouch	Resource-saving efforts
	BIOAXX (flexible packaging material)	Use of sustainable resources, resource saving, environmentally friendly disposal, visualization of environmental burden
	Square-bottomed Gazette Pouch	Improvement in transport efficiency, resource saving, environmentally friendly disposal
	Flexible packaging material using recycled materials	Use of recycled materials, procurement of materials with lower environmental burden, reduced energy consumption in production, environmentally friendly disposal, visualization of environmental burden
	Printed Decorative Paper (Coated Paper)	Reduced use of chemical substances, reduced use of hazardous substances
	Printed Decorative Paper (Coated Paper, FSC-certified)	Use of sustainable resources, reduced use of chemical substances, reduced use of hazardous substances
	Printed Decor Paper for HPL/LPL (Saturated Grade Paper)	Reduced use of chemical substances, reduced use of hazardous substances, reduced release of chemical substances
Living & Industry	Printed Decor Paper for HPL/LPL (Saturated Grade Paper, FSC-certified)	Use of sustainable resources, reduced use of chemical substances, reduced use of hazardous substances, reduced release of chemical substances
	Transfer paper for padded floors	Reduced use of chemical substances, reduced use of hazardous substances, reduced release of chemical substances
	Lower-VOC wallpaper (Exceptional*)	Reduced use of chemical substances, reduced use of hazardous substances, reduced release of chemical substances
	SnapFit	Reduced use of chemical substances, reduced use of hazardous substances, use of sustainable resources, extension of product life
	101 Coordination Floor REPREA eco (Exceptional*)	Reduced use of chemical substances, reduced use of hazardous substances, use of sustainable resources, extension of product life, labeling with environmental logos
	Sosogi Jozu	Resource saving, improvement in transport efficiency, environmentally friendly disposal
	Preform for PET bottles	Improvement in transport efficiency, visualization of environmental burden
	FORMANO	Reduced use of chemical substances, reduced use of hazardous substances, environmentally friendly disposal, reduced release of chemical substances, extension of product life
	FORTINA	Reduced use of chemical substances, reduced use of hazardous substances, environmentally friendly disposal, reduced release of chemical substances, extension of product life
	TOPPAN MATERIAL WOOD (Exceptional*)	Reduced use of chemical substances, reduced use of hazardous substances, use of recycled materials, environmentally friendly disposal, reduced release of chemical substances, extension of product life
	Smart Deli Bag	Reduced environmental burden during use
	Plastic UV ink container	Use of recycled materials, use of sustainable resources, improvement in transport efficiency, recycling
	Forest-certified-paper packaging	Use of sustainable resources, labeling with environmental logos
	Biodegradable plastic products	Use of biodegradable materials
	Cardboard with shrink wrap packaging	Resource saving, reduced energy consumption in production, improvement in transport efficiency, recycling
	Emergency magnesium air battery	Reduced use of chemical substances, reduced use of hazardous substances, use of sustainable resources, extension of product life, reduced environmental burden during use, recycling, environmentally friendly disposal
	FINE FEEL (101 Materium)	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, extension of product life, environmentally friendly disposal
	EP-PAK Fold & Tear/ Easy Removal Cap (Exceptional*)	Reduced use of chemical substances, reduced use of hazardous substances, use of sustainable resources, improvement in transport efficiency, recycling, environmentally friendly disposal, labeling with environmental logos
	BIOAXX flexible packaging material (Eco Mark certified) (Exceptional*)	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, use of sustainable resources, environmentally friendly disposal, visualization of environmental burden,labeling with environmental logos
	Flexible packaging material using recycled materials (Eco Mark certified) (Exceptional*)	Reduced use of chemical substances, reduced use of hazardous substances, use of recycled materials, resource saving, reduced energy consumption in production, environmentally friendly disposal, visualization of environmental burden, labeling with environmental logos

*Exceptional environmentally friendly product

Business Field	Product	Standard Categories
Living & Industry	CNF Eco Flat Cup™	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, use of sustainable resources, extension of product life, environmentally friendly disposal
	Itadaki Pouch™	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, environmentally friendly disposal
	Itadaki Pillow	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, environmentally friendly disposal
	KaruTech	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, environmentally friendly disposal
	Pitatto Paper Tray™	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, use of sustainable resources, environmentally friendly disposal
	Mono-Material Barrier Packaging	Reduced use of chemical substances, reduced use of hazardous substances, use of sustainable resources, extension of product life, recycling, environmentally friendly disposal
	Microwavable Paper Tray™	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, use of sustainable resources, extension of product life, environmentally friendly disposal
	MAPKA® packaging**	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, environmentally friendly disposal
	CUBE PAK®	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, use of sustainable resources, environmentally friendly disposal
	Tube-Pouch™	Reduced use of chemical substances, reduced use of hazardous substances, resource saving, extension of product life, environmentally friendly disposal, visualization of environmental burden
	ECOLUSTER™ packaging	Reduced use of chemical substances, reduced use of hazardous substances, use of sustainable resources, reduced energy consumption in production, environmentally friendly disposal, visualization of environmental burden

**MAPKA® is a registered trademark of Eco Research Institute Ltd. of Japan

Environment-related Business

Activity results, performance data

Thanks to the Group's projects focused on the United Nations Sustainable Development Goals, the total sales of environment-related businesses satisfying Toppan's in-house criteria (including, most notably, sales of environment-friendly products) rose to 781.8 billion yen in fiscal 2021.

To ensure consistency with the Group's management strategy, Toppan will treat sustainable transformation (SX) priority theme sales as the key performance indicator for environment-related business, starting from fiscal 2022.

Green Procurement and Green Purchasing

Activity results, performance data

JFPI Green Procurement Standards for Paper and Level of Fulfillment

Green Principle	Level 1	Level 2	Fiscal 2021 Result*
1. Using recycled paper or paper made with fewer forest resources (excluding covers for brochures)	Paper composed of at least 60% recycled pulp plus forest-certified pulp for the remaining portion, or with an overall rating of more than 80 points	Paper composed of at least 20% recycled pulp or forest-certified paper, tree-free paper, paper made with pulp from forest-thinning operations, or tissue paper	4.2%
2. Reducing component properties obstructive to waste paper recycling	Non-usage of printing materials with waste paper recyclability rankings of B, C, or D	Non-usage of printing materials with waste paper recyclability rankings of C or D	
3. Procuring from manufacturers proactively engaged in paper recycling	Procurement from manufacturers who proactively use waste paper as a raw material for recycled paper		

Note: Result under the Green Standards for Offset Printing Services (April 1, 2017 amendment) of the Japan Federation of Printing Industries (JFPI)
*Level 1 or 2 paper used (kg) / offset paper purchased (kg)

JFPI Green Procurement Standards for Ink and Level of Fulfillment

Green Principle	Level 1	Level 2	Fiscal 2021 Result*
1. Avoiding the use of substances harmful to the human body	Conformance with the NL regulations of the Japan Printing Ink Makers Association		98.5%
2. Considering chemical substances designated under the PRTR law of Japan	Non-usage of substances designated under the PRTR law	Identification of substances designated under the PRTR law (via SDSs)	
3. Controlling VOC emissions (for offset ink, excluding heat-set ink for web press)	Non-VOC ink or UV ink	Vegetable oil ink, soybean oil ink, or "ig" ink (labeling with Ink Green Mark)	
4. Using sustainable resources (for heat-set ink for web press)	Vegetable oil ink, soybean oil ink, or "ig" ink (labeling with Ink Green Mark)		
5. Reducing component properties obstructive to waste paper recycling	Non-usage of printing materials with waste paper recyclability rankings of B, C, or D	Non-usage of printing materials with waste paper recyclability rankings of C or D	

Note: Result under the JFPI Green Standards for Offset Printing Services (April 1, 2017 amendment)
*Level 1 or 2 ink used (kg) / offset ink purchased (kg)

In-house Green Purchasing Standards and Levels of Fulfillment

Product	Standard	Fiscal 2021 Result
Copy machines and printers	Configured to automatically revert to low-power mode or off mode	91.4%
Stationery and office goods	Products listed in eco-friendly product catalogues of manufacturers	74.0%

Participating in the Green Purchasing Network

Activity results, performance data

The Green Purchasing Network (GPN) of Japan was established in 1996 as a loose-knit network of businesses, civilian organizations, government agencies, and other entities proactively engaged in green purchasing practices. GPN is convinced that green purchasing plays a critical role in the formulation of a market for eco-products on a scale sufficient to facilitate eco-product development. GPN believes that green purchasing will contribute significantly to the realization of a sustainable society.

As a GPN member, Toppan Inc. provides printing services based on the GPN Ordering Guidelines for Printing Services.

Green Purchasing Network
https://www.gpn.jp/english/index.html

CFP and Carbon Offsetting Initiatives

Activity results, performance data

The Toppan Group has been visualizing CO_2 emissions associated with printed materials and events through CFP* and carbon offsetting initiatives. The Group's one-stop service for client companies covers every step from CFP quantification to carbon-offset certification. This procedure has also been applied to the Group's own products and events. In fiscal 2021 the Group conducted CFP quantifications for 21 products, services, and events.

In self-initiated activities, CO_2-equivalent greenhouse gas emissions associated with printed materials issued by the Toppan Group have been offset with J-Credits generated by Toppan subsidiaries and Gold Standard credits linked to the SDGs. The carbon-offsetting mechanism using Gold Standard credits allows Toppan to address SDG-relevant global development agendas such as climate security and stable power supply.

*"Carbon footprint of products (CFP)," a project advocated by the Japanese Ministry of Economy, Trade and Industry

Framework for CFP and Carbon Offsetting

