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

Environmental Data

Environmental Performance Data

Activity results, performance data

Major Types of Environmental Burden (Total burden; covering Group companies around the world) ☑

Category		Chief Component	Environmental Burden (Total)
INPUT	Material (t)	Total input	1,845,273
		Paper	1,356,292
		Ink, solvent	94,229
		Plastic	345,581
		Glass	8,513
		Other	40,658
	Energy (TJ)*1	Total consumption	21,313
		Fuel	4,502
		Electricity, steam	16,810
	Water (1,000 m³)	Total consumption	12,714
		Industrial water	772
		Municipal water	5,004
		Groundwater	6,914
		Rainwater used	24
		Use of water circulated on premises	4,132
	Chemical substances (t)*2	Handling of chemical substances designated under the PRTR law	4,484
OUTPUT	Atmosphere	CO_2 emission (t-CO_2)*3	1,014,288
		Fuel-derived (t-CO_2)	256,966
		Electricity-, steam-derived (t-CO_2)	757,323
		Release of chemical substances designated under the PRTR law (t)*2	83
		VOC emission into the atmosphere (t)*2, 4	3,657
	Water and soil environments	Total effluent discharge (1,000 m³)	9,979
		Into public water system (1,000 m³)	7,354
		Into sewage system (1,000 m³)	2,625
		BOD (kg)	24,642
		COD (kg)	46,135
		Nitrogen discharge (kg)	20,180
		Phosphorous discharge (kg)	5,887
		Release of chemical substances designated under the PRTR law (t)*2	1
	Waste (t)	Total discharge*5	322,110
		Recycled	314,142
		Final landfill disposal	6,214

*1 Energy consumption associated with fuel consumption is calculated using the conversion factor specified in the year 2000 amendment of the Act on the Rational Use of Energy of Japan.
The primary energy input associated with electricity consumption is calculated uniformly as 0.00983 GJ/kWh.

*2 The PRTR data only covers domestic sites (including Group sites not subject to the environmental targets).

*3 CO_2 emissions are calculated by the method specified in the Guidelines for Calculating Greenhouse Gas Emissions from Businesses (2003) issued by the Ministry of the Environment (MOE) of Japan.
CO_2 emissions associated with electricity consumption are calculated uniformly as 0.378 t-CO_2/MWh.
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).
Fuel-derived CO_2 emissions include 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).

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

Major Types of Environmental Burden (subject to the environmental targets in Japan) ☑

Category		Chief Component	Environmental Burden (subject to the environmental targets in Japan)
INPUT	Material (t)	Total input	910,211
		Paper	647,091
		Ink, solvent	50,288
		Plastic	180,172
		Glass	7,227
		Other	25,433
	Energy (TJ)*1	Total consumption	11,747
		Fuel	2,989
		Electricity, steam	8,758
	Water (1,000 m³)	Total consumption	6,598
		Industrial water	750
		Municipal water	1,095
		Groundwater	4,743
		Rainwater used	10
		Use of water circulated on premises	4,090
	Chemical substances (t)	Handling of chemical substances designated under the PRTR law	4,462
OUTPUT	Atmosphere	CO_2 emission (t-CO_2)*2	506,597
		Fuel-derived (t-CO_2)	169,649
		Electricity-, steam-derived (t-CO_2)	336,948
		Release of chemical substances designated under the PRTR law (t)	83
		VOC emission into the atmosphere (t)*3	2,480
	Water and soil environments	Total effluent discharge (1,000 m³)	5,307
		Into public water system (1,000 m³)	4,236
		Into sewage system (1,000 m³)*4	1,071
		BOD (kg)	9,763
		COD (kg)	8,961
		Nitrogen discharge (kg)	10,950
		Phosphorous discharge (kg)	434
		Release of chemical substances designated under the PRTR law (t)	1
	Waste (t)	Total discharge*5	186,140
		Recycled	185,745
		Final landfill disposal	51

*1 Energy consumption associated with fuel consumption is calculated using the conversion factor specified in the year 2000 amendment of the Act on the Rational Use of Energy of Japan.
The primary energy input associated with electricity consumption is calculated uniformly as 0.00983 GJ/kWh.

*2 CO_2 emissions are calculated by the method specified in the Guidelines for Calculating Greenhouse Gas Emissions from Businesses (2003) issued by the Ministry of the Environment (MOE) of Japan.
CO_2 emissions associated with electricity consumption are calculated uniformly as 0.378 t-CO_2/MWh.
Fuel-derived CO_2 emissions include emissions derived from combustibles burned in incinerators.

*3 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.

*4 Includes 8,809 m³ of spring water from the premises of the Akihabara Sales Building.

*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).

Environmental Accounting

Activity results, performance data

Capital Investment for Environmental Conservation

(million yen)

	Item	Major Content	Fiscal 2020	Increase/ Decrease from Fiscal 2019	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)	305 (74)	-1,952 (-1,484)	1,255 (470)
2	Investment in equipment to conserve the global environment	Investment in equipment to conserve the global environment by mitigating global warming, etc.	1,414	258	1,089
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)	129 (5)	-149 (5)	138 (11)
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	6	2	17
Total			1,854	-1,841	2,499

Environmental Conservation Benefit

Item	Major Content	Increase/Decrease from Fiscal 2019	Fiscal 2020
Energy	Total energy consumption (TJ)	132	21,313
Water	Water consumption (1,000 m^3)	-545	12,714
Atmosphere	CO_2 emission (kt-CO_2)	-3	1,014
	Emission of dioxins (mg-TEQ)	5	6
Water and soil environments	Total effluent discharge (1,000 m^3)	-422	9,979
	BOD (t)	-28	25
	COD (t)	-25	46
Waste	Total discharge (kt)	-7	322

Environmentally Friendly Products (87 products as of March 2021)

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
	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

Business Field	Product	Standard Categories
Living & Industry	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
	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

Environment-related Business

In fiscal 2020 the Toppan Group revised its classification criteria for environment-related business to cover every project associated with the "sustainable global environment" theme advocated in the Business Materiality category.

The total sales of the environment-related business satisfying the renewed Groupwide criteria—including, most notably, sales of environment-friendly products—were 790.3 billion yen in fiscal 2020.

From fiscal 2021, Toppan will develop more business projects that contribute to the achievement of the United Nations Sustainable Development Goals.

Green Procurement and Green Purchasing

JFPI Green Procurement Standards for Paper and Level of Fulfillment

Green Principle	Level 1	Level 2	Fiscal 2020 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	5.7%
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 2020 Result*
1. Avoiding the use of substances harmful to the human body	Conformance with the NL regulations of the Japan Printing Ink Makers Association		99.0%
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 2020 Result
Copy machines and printers	Configured to automatically revert to low-power mode or off mode	90.0%
PCs	Configured to automatically revert to low-power mode or off mode and to maintain low energy consumption when in low-power mode	100.0%
Stationery and office goods	Products listed in eco-friendly product catalogues of manufacturers	69.9%

Participating in the Green Purchasing Network

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

Promoting CFP and Carbon Offsetting Initiatives for Printed Materials and Events

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 2020 the Group conducted CFP quantifications for 19 products, services, and events.

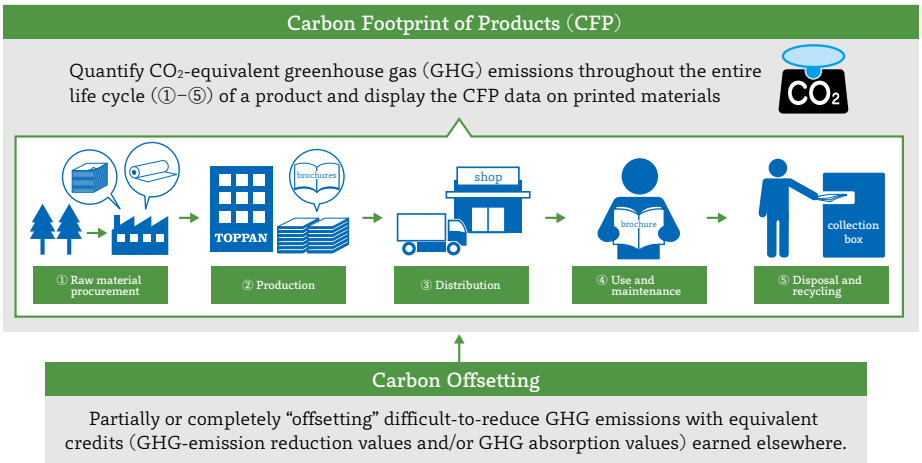
In self-initiated activities, CO_2-equivalent greenhouse gas (GHG) emissions associated with printed materials issued by the Toppan Group are offset with J-Credits generated by Toppan subsidiaries and Gold Standard credits linked to the SDGs. The carbon-offsetting mechanism using Gold Standard credits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

The Group has also offset the CO_2-equivalent GHG emissions associated with the TOPPAN eSports Festival**. The emissions were offset with a J-Credit originating from a GHG-emission reduction project using carbonyl fluoride operated by Ortus Technology Kochi Co., Ltd. (now the Kochi Plant of Toppan Electronics Products Co., Ltd.).

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

**https://japancredit.go.jp/cp/77/ (in Japanese)

Framework for CFP and Carbon Offsetting



CFP information on the printed Japanese version of the *Toppan Integrated Report 2020*

https://ecoleaf-label.jp/pdf_view.php?uuid=c2743b52-521c-469b-a28b-3c698f0311ea.pdf&filename=JR-AO-20008C_JPN.pdf

Toppan Integrated Report 2020
(back cover of the printed Japanese version)