

## CSR Report 2017: Detailed Data



### ■ Editorial Policy

This PDF discloses detailed data not presented in the *Toppan CSR Report 2017*.

The CSR report is edited in line with the seven core subjects set under ISO 26000, a guidance standard on social responsibility. In the *Detailed Data*, Toppan also uses the core subjects as its main titles.

### ■ Scope and Boundary

The data on Labor Practices covers Toppan Printing Co., Ltd. only. The scope of the environmental performance data is presented in the table below, which shows indicators assured by an independent assurance provider.

### ■ Reliability

KPMG AZSA Sustainability Co., Ltd. provides independent assurance for this PDF, along with the *Toppan CSR Report 2017*. The following are environmental performance indicators in the *Detailed Data* assured by the independent assurance provider.

### Environmental Performance Indicators Assured by an Independent Assurance Provider and Scope of the Environmental Performance Data

- ① Toppan Printing Co., Ltd. ("the Company")
- ② 15 domestic manufacturing subsidiaries subject to the Company's environmental targets
- ③ 19 domestic subsidiaries not subject to the Company's environmental targets
- ④ 22 overseas subsidiaries

Pages	Category	Data	Indicator Assured by an Independent Assurance Provider	Companies	Scope
P. 3	The Environment	Values, Results, and Evaluation of Environmental Targets for Fiscal 2016 and Environmental Target Values for Fiscal 2017	✓	16	①, ②
P. 3	Toppan's Environmental Burden	INPUT/OUTPUT Data by Business Field for Domestic Sites (subject to the environmental targets)	✓	16	①, ②
P. 4		INPUT/OUTPUT Data by Business Field for Domestic Sites (not subject to the environmental targets)	✓	19	③
P. 4		INPUT/OUTPUT Data by Business Field for Overseas Sites (not subject to the environmental targets)	✓	22	④
P. 5		Environmental Impact and Environmental Efficiency	—	16	①, ②
P. 5	Environmental Management Activities	ISO 14001 Certificates Obtained at Toppan Printing Co., Ltd. and Domestic Manufacturing Subsidiaries (subject to the environmental targets)	—	16	①, ②
P. 5		ISO 14001 Certificates Obtained at Domestic Subsidiaries (not subject to the environmental targets)	—	19	③
P. 5		ISO 14001 Certificates Obtained at Overseas Subsidiaries (not subject to the environmental targets)	—	22	④
P. 6		Fiscal 2016 Results of Environmental Education	✓	17	①–③
P. 6	Eco-protection Activities	Numbers of Internal Environmental Audits and Issues in Need of Improvement	✓	19	①–③
P. 6		Greenhouse Gas Emissions throughout the Entire Supply Chain	✓	16	①, ②
P. 7		Mitigation of Global Warming through the Development of Energy-saving Measures	—	16	①, ②
P. 7		Energy Consumption	✓	16	①, ②
P. 7		Ratios by Energy Type (in terms of calorific value)	✓	16	①, ②
P. 7		Electricity Consumption	✓	16	①, ②
P. 7		Natural Gas Consumption	✓	16	①, ②
P. 7		Kerosene Consumption	✓	16	①, ②
P. 7		Fuel Efficiency of Vehicles Owned by Toppan Logistics	✓	1	Toppan Logistics Co., Ltd.
P. 8		Ratios of Greenhouse Gas Emissions by Type (in tons of CO <sub>2</sub> equivalent)	✓	57	①–④
P. 8		Ratios of Greenhouse Gas Emissions by Source (in tons of CO <sub>2</sub> equivalent)	✓	57	①–④
P. 8		Calculated Level of Fluorocarbon Leakage	✓	57	①–④
P. 8		Promotion of Waste Reduction and Recycling	—	16	①, ②
P. 8		Waste Discharge per Unit of Production Value	✓	16	①, ②
P. 8		Fiscal 2016 Results of Waste Discharge and Recycling	✓	16	①, ②
P. 9		Zero-emission Sites (TZERO-16)	—	18	①–③
P. 10	Preventing Pollution / Controlling Chemical Substances	PRTR Data	✓	16	①, ②
P. 10		Promoting the Conservation of Biodiversity	✓	16	①, ②
P. 11	Eco-creativity Activities	List of Environmentally Friendly Products	—	16	①, ②
P. 12	Environmental Accounting	Capital Investment for Environmental Conservation	✓	53	—
P. 12		Environmental Conservation Benefit	✓	56	①–④
P. 12		Green Procurement Standards for Paper and Level of Fulfillment	—	10 suppliers	—
P. 12		Green Procurement Standards for Ink and Level of Fulfillment	—	4 suppliers	—
P. 12	Green Procurement and Green Purchasing	In-house Green Purchasing Standards and Levels of Fulfillment	✓	16	①, ②

Note: Total values may not exactly match the sum totals of individual values, as decimals are rounded up or down.

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## Labor Practices

### Results in Human Asset\* Development

\*Toppan values its employees as precious "human assets."

	Funds Spent on Training, etc. per Employee	Usage Rates of Toppan Training Centers*1	
		Kawaguchi	Yugawara
Fiscal 2014	77,654 yen	92.5%	42.9%
Fiscal 2015	79,251 yen	85.7%	45.1%
Fiscal 2016	70,783 yen	87.0%	45.8%

\*1 Usage rates are calculated by dividing the number of days the training centers are used by the number of days the centers are available (excluding holidays, etc.)

### Retention Rates for Recruits

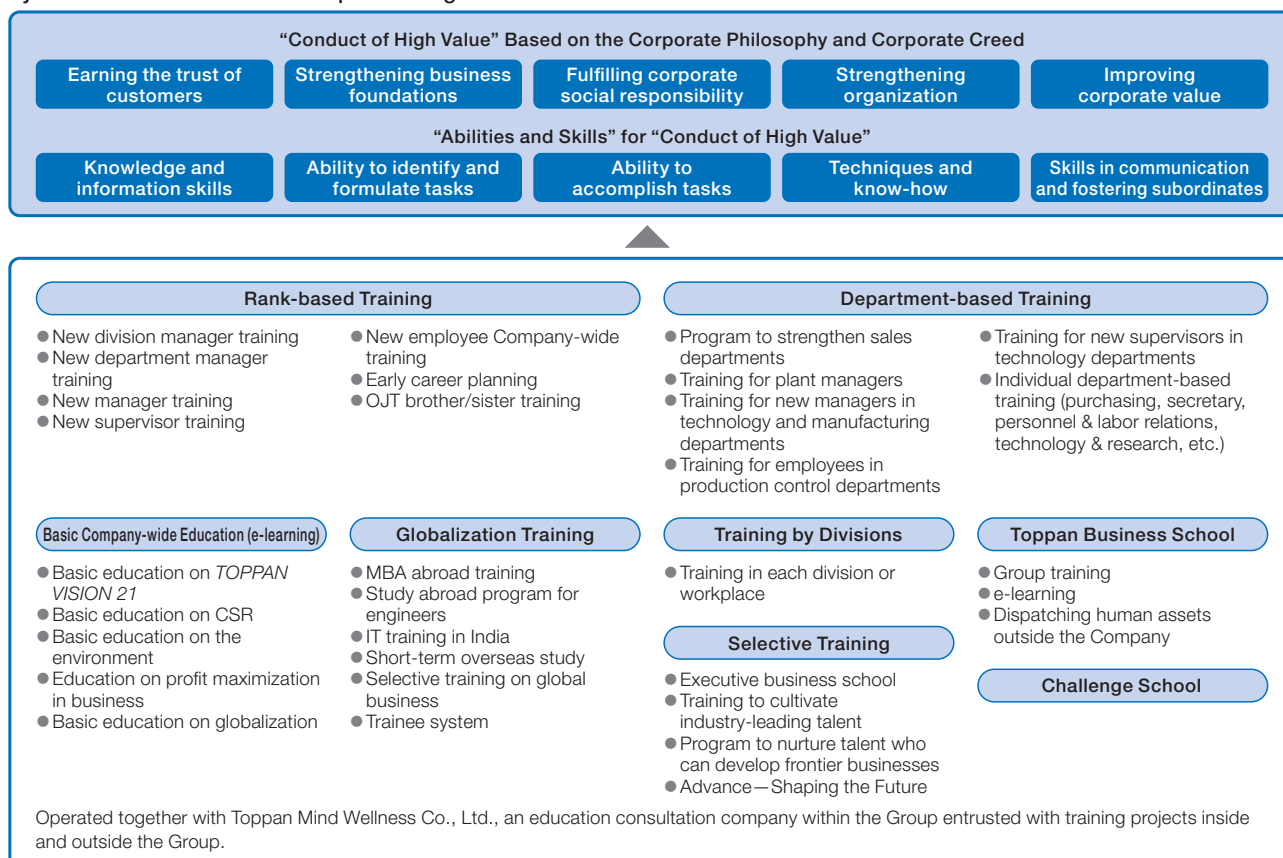
(Percentage of fiscal 2014 hires still working at Toppan)

	Male	Female
Hired on April 1, 2014	164	86
Still with Toppan as of April 1, 2017	148	80
Retention rates	90%	93%
Average for male and female employees	91%	
Percentage who leave the Company before working three years	9%	

### Main Leave Systems and Family Benefits / Measures to Support Work-Life Balance and Foster the Next Generation

<b>Stock Leave</b>	Employees can accumulate up to 50 days of annual paid leave (exercisable within two years from the date the days are granted). Employees are eligible to use their stock leave for medical treatment for themselves or their dependents, healthcare or nursing care for their families, fertility treatment, recovery-work in the aftermath of unexpected disasters, and so on.
<b>Childcare Leave</b>	Both mothers and fathers are eligible for fulltime childcare leave consecutively until the first March 31 after their child reaches the age of 12 months. (As of March 31, 2017, a cumulative total of 356 male employees have taken childcare leave.) The first five days of childcare leave can be taken as paid leave. From the sixth day, employees on leave receive 10% of their regular salaries from the Company (until their child reaches the age of 18 months) and subsidies of 30,000 yen a month from the Toppan Group Fraternal Benefit Society. They can also work for shorter hours (maximum reduction of two hours per day) or select a flextime or irregular working schedule from the date of their return to the job until their child completes the fourth year of elementary school. The Company subsidizes certain childcare costs and provides childcare-related information through a consultation office.
<b>Rehiring of Employees who Leave the Company to Raise Children</b>	Rehiring is guaranteed for an employee who resigns to deliver and raise a child, provided that the employee has worked for Toppan for more than three consecutive years up to the date of resignation. A resigned employee who meets this condition will remain eligible for rehiring until May 1 of the year when the child enters elementary school.
<b>Nursing Care Leave</b>	Employees are entitled to take leave for nursing care. For every family member requiring care, an employee is entitled to one year of consecutive or aggregated leave and up to three years of other work-hour adjustments such as staggered working hours or two-hour working day reductions. The Toppan Group Fraternal Benefit Society pays a 30,000-yen subsidy per month as assistance during the leave. Toppan offers nursing care-related information and contracts consultants outside the Company to provide advice.
<b>Leave for Child Healthcare</b>	Employees can take up to 10 days of leave a year, regardless of the number of children they are raising. (Five days can be taken as paid leave, either as full days or half-day allotments, as necessary.)
<b>Volunteer Leave</b>	Employees can take volunteer leave to engage in socially beneficial activities for up to one year. Employees on volunteer leave receive an allowance.
<b>Staggered Work-hours</b>	An employee can adjust daily working hours upward or downward by one hour to avoid rush-hour commutes during pregnancy and by two hours for childcare (until his or her child completes the fourth year of elementary school).
<b>Dependent Family Allowance</b>	For employees with children, the Company pays a monthly allowance of 20,000 yen for each child. This allowance is discontinued on the first April 1 to arrive after the child's 20th birthday. (No limit for the number of children is applied.)
<b>Partial Subsidization of Babysitter Expenses</b>	The Toppan Group Fraternal Benefit Society subsidizes 50% of babysitter expenses (up to 5,000 yen per day) for up to 90 days a year.
<b>Other</b>	The Toppan Group Health Insurance Union covers standard medical costs for childbirth. It also gives out a complimentary childrearing magazine and runs a consultation office for employees with questions about the health of the body and mind.

### Systematic Human Asset Development Programs



## The Environment

### Values, Results, and Evaluation of Environmental Targets for Fiscal 2016 and Environmental Target Values for Fiscal 2017

Environmental Targets	Management Indicators	Fiscal 2016				Environmental Target Values for Fiscal 2017
		Target Values	Results	Achievement Rates	Evaluation	
1. Mitigation of global warming Reduce CO <sub>2</sub> emissions	CO <sub>2</sub> emissions	550 kilotons	561 kilotons	98.1%	B	550 kilotons
2. Action for building a recycling-oriented society Reduce final landfill waste disposal	Final landfill waste disposal	130 tons	97 tons	125.6%	S	100 tons
3. Conservation of the atmospheric environment Reduce VOC emissions into the atmosphere	VOC emissions into the atmosphere	3,400 tons	3,403 tons	99.9%	B	3,200 tons

Evaluation criteria

S: Results achieved far surpass the targets (achievement rate [%]  $\geq 105$ )

A: Targets achieved ( $100 \leq$  achievement rate [%]  $< 105$ )

B: Activities fully carried out, but targets unachieved ( $70 \leq$  achievement rate [%]  $< 100$ )

C: Activities insufficient (achievement rate [%]  $< 70$ )

Achievement rates:  $200 - (\text{values actually achieved} / \text{target values}) \times 100$  [%]

### Medium-and-long-term Environmental Targets for Fiscal 2020

① Mitigation of global warming	• Reduce CO <sub>2</sub> emissions by 30% compared to the fiscal 2008 level (751 kilotons → 530 kilotons: -221 kilotons)
② Action for building a recycling-oriented society	• Reduce final landfill waste disposal by 95% compared to the fiscal 2008 level (1,584 tons → 80 tons: -1,504 tons)
③ Conservation of the atmospheric environment	• Reduce VOC emissions into the atmosphere by 70% compared to the fiscal 2008 level (7,326 tons → 2,198 tons: -5,128 tons)

### ■ Toppan's Environmental Burden\*1

#### INPUT/OUTPUT Data by Business Field for Domestic Sites (subject to the environmental targets)

Category	Chief Component	Information & Communication	Living & Industry	Electronics	Non-production sites	Total
INPUT	Material	Total input (tons)	714,652	504,542	25,661	1,244,854
		Papers (tons)	691,404	280,215	49	971,668
		Plastic (tons)	3,018	169,277	2,510	174,805
		Glass (tons)	0	71	8,042	8,113
		Ink, solvent (tons)	12,055	44,883	2,948	59,886
		Other (tons)	8,175	10,097	12,111	30,383
	Energy	Total energy consumption (1,000 GJ)	3,209	5,527	3,490	12,842
		Primary energy [fuel] (1,000 GJ)	959	2,199	367	3,616
		Secondary energy [electricity, steam] (1,000 GJ)	2,250	3,328	3,123	9,226
	Water	Water consumption (1,000 m <sup>3</sup> )	775	1,557	4,029	6,699
		Industrial water (1,000 m <sup>3</sup> )	229	412	266	913
		Municipal water (1,000 m <sup>3</sup> )	344	602	39	1,305
		Groundwater (1,000 m <sup>3</sup> )	201	542	3,724	4,468
		Rainwater used (1,000 m <sup>3</sup> )	2	0	0	12
		Use of water circulated on premises (1,000 m <sup>3</sup> )	11	17	3,621	3,649
	Chemical substances	Handling of chemical substances designated under the PRTR law (tons)	398	1,942	2,083	4,424
OUTPUT	Atmosphere	CO <sub>2</sub> emission (t-CO <sub>2</sub> )	135,896	259,470	140,285	560,530
		CO <sub>2</sub> emission [fuel] (t-CO <sub>2</sub> )	49,375	131,254	20,199	205,542
		CO <sub>2</sub> emission [electricity, steam] (t-CO <sub>2</sub> )	86,521	128,216	120,086	354,987
		Emission of dioxins (mg-TEQ)	3	1	0	4
		Release of chemical substances designated under the PRTR law (tons)	28	111	1	141
		VOC emission into the atmosphere (tons)*2	450	2,899	55	3,403
	Water and soil environments	Total effluent discharge (1,000 m <sup>3</sup> )	420	872	3,525	5,119
		Into public water system (1,000 m <sup>3</sup> )	10	388	3,286	3,683
		Into sewage system (1,000 m <sup>3</sup> )*3	410	484	239	1,436
		BOD (kg)	13	1,042	8,413	9,468
		COD (kg)	0	2,385	5,420	7,804
		Nitrogen discharge (kg)	0	2,540	8,902	11,442
		Phosphorous discharge (kg)	0	372	313	686
		Release of chemical substances designated under the PRTR law (tons)	0	0	1	1
	Waste	Total discharge (tons)	106,025	101,011	16,731	227,573
		Recycled (tons)	105,868	100,509	16,726	226,885
		Final landfill disposal (tons)	16	65	7	97

\*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. CO<sub>2</sub> 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 of Japan. CO<sub>2</sub> emissions associated with electricity consumption are calculated uniformly as 0.378 t-CO<sub>2</sub>/MWh. CO<sub>2</sub> emissions associated with electricity consumption at overseas sites, however, are calculated based on the CO<sub>2</sub> emission conversion factors (applied to specific countries for the year of 2000) published by the Greenhouse Gas Protocol Initiative. CO<sub>2</sub> emissions [fuel] include CO<sub>2</sub> emissions associated with combustibles burned in incinerators. 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).

\*2 Emissions into the atmosphere are calculated in conformance with the standards established by the Japan Federation of Printing Industries (JFPI) and the Japan Electronics and Information Technology Industries Association (JEITA).

\*3 Includes 10,214m<sup>3</sup> of spring water from the premises of the Akihabara Sales Building.

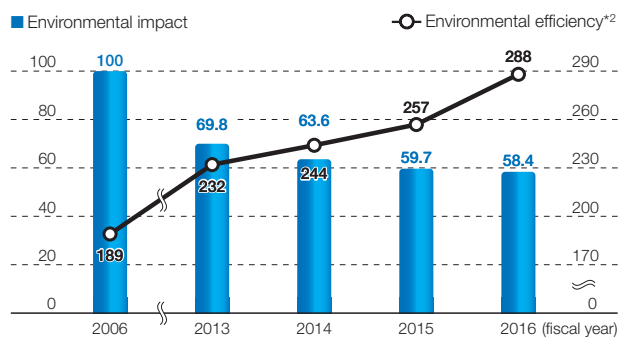
**INPUT/OUTPUT Data by Business Field for Domestic Sites (not subject to the environmental targets)**

Category	Chief Component	Information & Communication	Living & Industry	Electronics	Non-production sites	Total
INPUT	Material	Total input (tons)	455,411	72,020	674	528,106
		Papers (tons)	443,970	4,503	4	448,477
		Plastic (tons)	3,247	64,369	5	67,621
		Glass (tons)	1	0	59	60
		Ink, solvent (tons)	6,130	2,227	240	8,597
		Other (tons)	2,063	921	367	3,351
	Energy	Total energy consumption (1,000 GJ)	2,181	677	438	3,297
		Primary energy [fuel] (1,000 GJ)	189	65	46	301
		Secondary energy [electricity, steam] (1,000 GJ)	1,992	612	392	2,996
	Water	Water consumption (1,000 m³)	1,552	67	907	2,525
		Industrial water (1,000 m³)	28	0	0	28
		Municipal water (1,000 m³)	236	67	14	316
		Groundwater (1,000 m³)	1,276	0	893	2,169
		Rainwater used (1,000 m³)	12	0	0	12
		Use of water circulated on premises (1,000 m³)	1	0	17	18
	Chemical substances	Handling of chemical substances designated under the PRTR law (tons)	18	19	55	91
OUTPUT	Atmosphere	CO <sub>2</sub> emission (t-CO <sub>2</sub> )	87,196	26,928	18,250	132,375
		CO <sub>2</sub> emission [fuel] (t-CO <sub>2</sub> )	10,594	3,398	3,176	17,168
		CO <sub>2</sub> emission [electricity, steam] (t-CO <sub>2</sub> )	76,602	23,530	15,074	115,207
		Release of chemical substances designated under the PRTR law (tons)	0	0	0	1
		VOC emission into the atmosphere (tons)	446	920	5	1,371
	Water and soil environments	Total effluent discharge (1,000 m³)	964	48	851	1,862
		Into public water system (1,000 m³)	771	33	849	1,653
		Into sewage system (1,000 m³)	192	15	2	209
		BOD (kg)	599	123	3,226	3,948
		COD (kg)	1,992	0	0	1,992
		Nitrogen discharge (kg)	452	0	0	452
		Phosphorous discharge (kg)	11	0	0	11
		Release of chemical substances designated under the PRTR law (tons)	0	0	1	1
	Waste	Total discharge (tons)	52,953	11,528	1,247	67,113
		Recycled (tons)	52,632	11,435	1,227	66,678
		Final landfill disposal (tons)	29	10	0	39

**INPUT/OUTPUT Data by Business Field for Overseas Sites (not subject to the environmental targets)**

Category	Chief Component	Information & Communication	Living & Industry	Electronics	Non-production sites	Total
INPUT	Material	Total input (tons)	137,386	184,190	1,296	322,872
		Papers (tons)	129,681	147,517	36	277,234
		Plastic (tons)	1,322	19,624	51	20,997
		Glass (tons)	0	0	60	60
		Ink, solvent (tons)	2,937	15,998	257	19,192
		Other (tons)	3,445	1,051	891	5,388
	Energy	Total energy consumption (1,000 GJ)	844	1,141	901	2,887
		Primary energy [fuel] (1,000 GJ)	88	371	15	474
		Secondary energy [electricity, steam] (1,000 GJ)	756	771	886	2,412
	Water	Water consumption (1,000 m³)	602	340	415	1,356
		Municipal water (1,000 m³)	602	308	357	1,267
		Groundwater (1,000 m³)	0	31	58	89
		Rainwater used (1,000 m³)	0	0	0	0
OUTPUT	Atmosphere	CO <sub>2</sub> emission (t-CO <sub>2</sub> )	55,767	69,878	60,188	185,834
		CO <sub>2</sub> emission [fuel] (t-CO <sub>2</sub> )	4,637	18,618	970	24,225
		CO <sub>2</sub> emission [electricity, steam] (t-CO <sub>2</sub> )	51,131	51,260	59,218	161,609
	Water and soil environments	Total effluent discharge (1,000 m³)	602	340	415	1,356
		Into public water system (1,000 m³)	0	9	164	173
		Into sewage system (1,000 m³)	522	256	163	940
		BOD (kg)	0	0	488	488
		COD (kg)	0	0	840	840
		Nitrogen discharge (kg)	0	0	289	289
		Phosphorous discharge (kg)	0	0	1	1
	Waste	Total discharge (tons)	37,990	28,267	1,857	68,115
		Recycled (tons)	36,696	25,129	1,634	63,459
		Final landfill disposal (tons)	1,256	2,764	153	4,172

## Environmental Impact and Environmental Efficiency\*1



\*1 The value in fiscal 2006 = 100 (baseline); Recalculated with non-production sites excluded.

\*2 Environmental efficiency = net sales / environmental impact

## Environmental Management Activities

### ISO 14001 Certification

(56 systems at 112 sites, as of March 31, 2017)

#### ■ ISO 14001 Certificates Obtained at Toppan Printing Co., Ltd. and Domestic Manufacturing Subsidiaries (subject to the environmental targets)

Operational Site (Division or Manufacturing Subsidiary)	Registrar	Registration Date
Electronics Division	BV	Jul. 1998
Environmental Design Subdivision [Kashiwa Plant and Satte Plant of Toppan Decor Products Inc.] (Living & Industry Division)	ICL	Mar. 2000
Tokyo-based sites (Information & Communication Manufacturing Subdivision)	SAI GLOBAL	Feb. 2002
Fukusaki Plant [including Wakayama Plant and Fukusaki Plant of Toppan Plastic Co., Ltd.] (Toppan Packaging Products Co., Ltd.)	JQA	Jul. 2002
Takino Site	JQA	Oct. 2002
Azusawa Site, Atago Site, Niiza Site, Kawaguchi Site, Sakado Site, Sagamiara Site, Numazu Site (Toppan Logistics Co., Ltd.)	ICL	Oct. 2002
Gunma Central Plant (Toppan Packaging Products Co., Ltd.)	JQA	Jul. 2003
Mito Plant (Toppan Prosprint Co., Ltd.)	JSA	Jan. 2004
Saitama Plant, Miyagi Plant, Sano Plant (Toppan Containers Co., Ltd.)	JQA	Apr. 2004
Fukuyama Plant (Toppan Joho Kako Co., Ltd.)	ICL	Oct. 2004
Higashinohon Subdivision	ICL	Mar. 2005
Toppan Technical Research Institute	JQA	May 2005
Sapporo Plant and Chitose Plant (Hokkaido Subdivision)	ICL	Jun. 2005
Satte Plant [including Koshigaya Plant] (Toppan Plastic Co., Ltd.)	SAI GLOBAL	Dec. 2006
Ranzan Plant and Kyushu Plant (Toppan Packaging Service Co., Ltd.)	JQA	Feb. 2007
Sagamiara Plant (Toppan Packaging Products Co., Ltd.)	SAI GLOBAL	Mar. 2007
Saga Plant (Toppan Plastic Co., Ltd.)	ICL	Nov. 2007
Kyushu Subdivision (Nishinohon Division of Toppan Printing Co., Ltd.)	ICL	Oct. 2008
Head office and Kansai branch (Toppan Techno Co., Ltd.)	SAI GLOBAL	Mar. 2009
Sodegaura Beverage Plant (Toppan Packaging Service Co., Ltd.)	SAI GLOBAL	Apr. 2009
Fukaya Plant [including Satte Site] (Toppan Packaging Products Co., Ltd.)	ICL	Mar. 2010
Chubu Division	JQA	Dec. 2010

#### ■ ISO 14001 Certificates Obtained at Domestic Subsidiaries (not subject to the environmental targets)

Operational Site (Group Company)	Registrar	Registration Date
Total Media Development Institute Co., Ltd.	JSA	Mar. 2001
Head office and Saitama Plant (Livretch Co., Ltd.)	JCQA	Jul. 2001
Fukushima Plant [including Takino Plant, Sagamiara Plant] (Toppan TDK Label Co., Ltd.)	RB-ISO	Nov. 2001
Central Research Center (Toppan Forms Co., Ltd.)	JQA	Mar. 2004
Toppan Forms Tokai Co., Ltd.	JQA	Aug. 2004
Toppan Forms Kansai Co., Ltd.	JQA	Apr. 2007
Toppan Forms Nishinohon Co., Ltd.	JQA	Jan. 2005
Hino Plant (Toppan Media Printec Tokyo Co., Ltd.)	JSA	Nov. 2005
Zama Plant (Toppan Media Printec Tokyo Co., Ltd.)	JACO	Sep. 2009
Kansai Tosho Printing Co., Ltd.	JQA	Jun. 2005
Tosho Printing Co., Ltd.	Intertek	May 2003
Head office and Kochi Plant (Ortus Technology Co., Ltd.)	BV	Feb. 2008
Toppan Forms (Sanyo) Co., Ltd.	JQA	Oct. 2009
Gunma Plant (Tamapoly Co., Ltd.)	JQA	Feb. 2011
Toppan Forms Central Products Co., Ltd.	JQA	Sep. 2011
Sanda Plant (Tamapoly Co., Ltd.)	JQA	Jan. 2012
Tokyo Logistics Co., Ltd.	JIA-QA	Aug. 2001

#### ■ ISO 14001 Certificates Obtained at Overseas Subsidiaries (not subject to the environmental targets)

Group Company	Registrar	Registration Date
Toppan Photomasks France SAS	LRQA	Oct. 2000
Toppan Photomasks, Inc. [Round Rock]	LRQA	Nov. 2001
Siam Toppan Packaging Co., Ltd.	MASCI	Apr. 2002
Toppan Printing Co., (H.K.) Ltd.	DNV	May 2002
Toppan Chunghwa Electronics Co., Ltd.	SGS	Oct. 2003
PT. Indonesia Toppan Printing	LRQA	Nov. 2004
Toppan Photomasks Korea Limited	LRQA	Feb. 2005
Toppan SMIC Electronics (Shanghai) Co., Ltd.	SGS	Feb. 2007
Toppan Leefung Printing (Shanghai) Co., Ltd.	CCCI	Apr. 2007
Shanghai Toppan Printing Co., Ltd.	NQA	Jul. 2008
Toppan Leefung Changcheng Printing (Beijing) Co., Ltd.	ZDHY	Nov. 2009
Toppan Leefung Printing Limited (H.K.)	CNAS	Mar. 2009
Toppan Leefung Packaging & Printing (Dongguan) Co., Ltd.		
Toppan Excel Printing (Guangzhou) Company Limited	CTC	May 2009
Toppan Excel Printing (Meizhou) Co., Ltd.	CQC	Sep. 2013
Toppan Security Printing Pte. Ltd.	TUV	Aug. 2010
Toppan Win Label Company Limited	CQC	Nov. 2012
Toppan Yau Yue Paper Products (Dongguan) Co., Ltd.	Intertek	May 2016
Toppan Yau Yue Packaging (Dongguan) Co., Ltd.		

## Fiscal 2016 Results of Environmental Education

Training	Number of Trainees
New employee training: General environmental education	347
E-learning program: CSR for fiscal 2016	20,426
Toppan Business School (1 course)	16
Toppan Challenge School (10 courses)	57
Internal environmental auditor training program	312

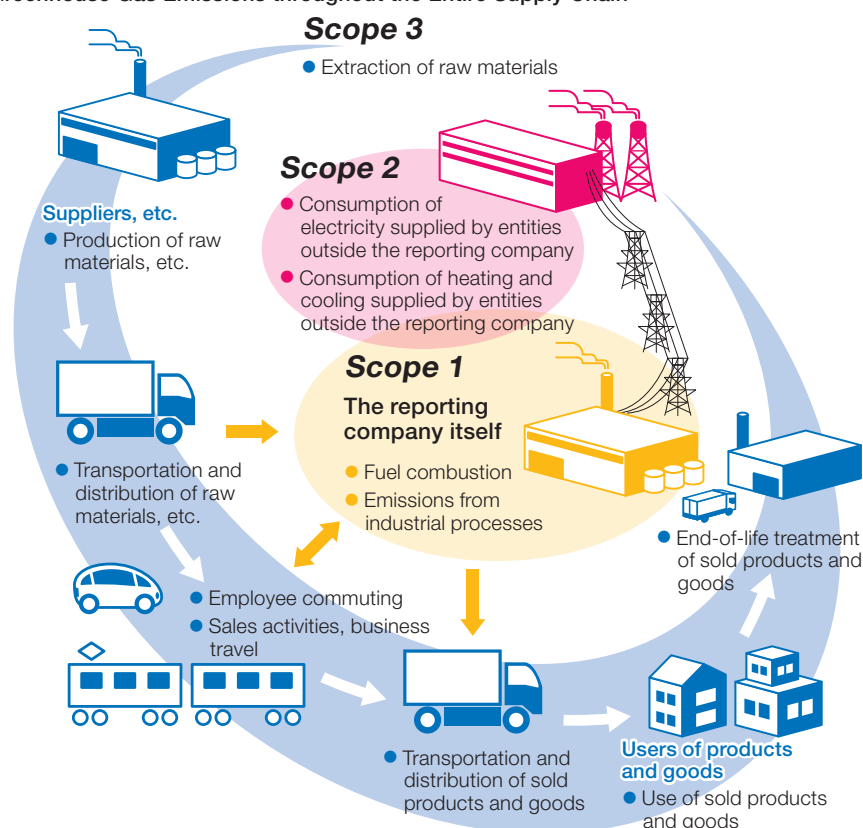
## Numbers of Internal Environmental Audits and Issues in Need of Improvement

Domestic sites audited	58 sites
Issues in need of improvement identified at domestic sites	107 issues
Domestic sites reviewed	2 sites

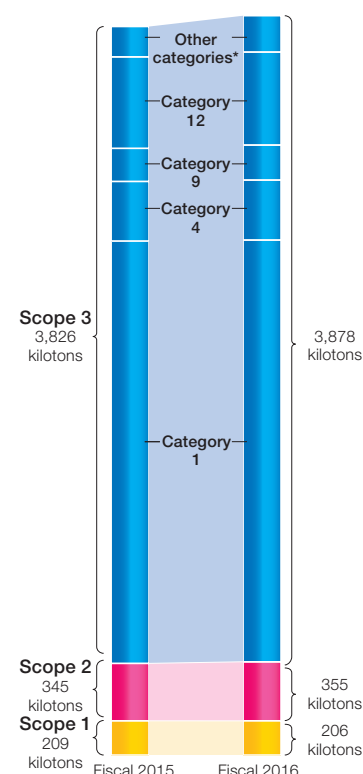


## Mitigating Global Warming

### Greenhouse Gas Emissions throughout the Entire Supply Chain



Scope 1–3 Greenhouse Gas Emissions



### Details of the Scope 1–3 Categories

Emissions Types	
Direct emissions (Scope 1)	Direct emissions from industrial processes or fuels consumed at the reporting company
Indirect emissions (Scope 2)	Indirect emissions associated with the consumption of electricity, heating, or cooling purchased or acquired by the reporting company

Indirect Emissions Not Included in Scope 2 (Scope 3)			Calculation Methods	
			Activity Quantity	Basic Unit from
Category 1	Purchased goods and services	Emissions associated with activities up to the point of the production of raw materials, components, goods, sales-related materials, or the like purchased or acquired by the reporting company	Materials purchased or acquired (by weight)	CFP-DB*2
Category 2	Capital goods	Emissions that occur during the construction or production of capital goods purchased or acquired by the reporting company	Capital investments by business field	MOE-DB*1
Category 3	Fuel- and energy-related activities (not included in scope 1 or scope 2)	Emissions associated with the procurement of fuels supplied by entities outside the reporting company or fuels necessary for the generation, etc. of electricity, heating, cooling, etc. consumed by the reporting company	1. Electricity and steam consumption 2. Fuel consumption	1. MOE-DB*1 2. CFP-DB*2
Category 4	Upstream transportation and distribution	Emissions associated with logistics up to the point of the arrival of incoming raw materials, components, goods, sales-related materials, or the like purchased or acquired by the reporting company; transportation and distribution of products sold by the reporting company	1. Freight ton-kilometers as a designated shipper classified under the Energy Saving Act of Japan 2. Estimated freight ton-kilometers of procurement logistics	1. Energy Saving Act of Japan 2. CFP-DB*2
Category 5	Waste generated in operations	Emissions associated with the transportation and treatment of waste generated at the reporting company	Waste discharge by type	MOE-DB*1
Category 6	Business travel	Emissions associated with business travel by employees	Business travel expenses by transport mode	MOE-DB*1
Category 7	Employee commuting	Emissions associated with the commuting of employees between their homes and worksites	Commuter fares or petrol costs	MOE-DB*1
Category 8	Upstream leased assets	Emissions associated with the operation of assets leased by the reporting company (lessee), excluding scope 1 and scope 2 emissions	Electricity and gas consumed at tenant premises	Emission factors by business
Category 9	Downstream transportation and distribution	Emissions associated with the transportation, storage, loading, or retailing of sold products after delivery to customers	Estimated freight ton-kilometers by product	CFP-DB*2
Category 10	Processing of sold products	Emissions associated with the processing of sold intermediate products by downstream companies	Excluded from calculation because there are no scenarios or units that apply universally to Toppan's diversified products	
Category 11	Use of sold products	Emissions associated with the end use of sold products by users (consumers, downstream companies)	Not applicable	
Category 12	End-of-life treatment of sold products	Emissions associated with the transportation and treatment of sold products at the end of their life by users (consumers, downstream companies)	Waste disposal by product (estimated)	CFP-DB*2
Category 13	Downstream leased assets	Emissions associated with the operation of assets owned by the reporting company (lessor)	Not applicable	
Category 14	Franchises	Emissions from franchise members	Not applicable	
Category 15	Investments	Emissions related to the operation of investments	Excluded from calculation	

Notes ● Toppan calculates its scope 3 emissions for categories 1–9 and 12.

● The calculation boundary covers Toppan Printing Co., Ltd. and 15 domestic manufacturing subsidiaries subject to the Company's environmental targets.

● For "freight ton-kilometers as a designated shipper classified under the Energy Saving Act of Japan" in category 4, "business travel" in category 6, and "employee commuting" in category 7, Toppan has estimated total values across the calculation boundary in terms of the proportion of production volume or employee numbers based on the values counted for organizations whose activities are quantifiable.

\*1 MOE-DB: Emission unit database issued by the Ministry of the Environment of Japan for calculating the greenhouse gas emissions, etc. of organizations throughout the entire supply chain (ver. 2.0)

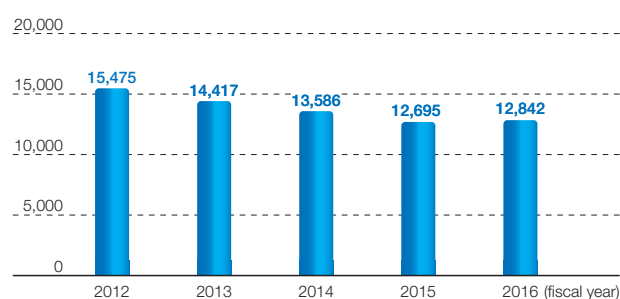
\*2 CFP-DB: Standard database (ver. 1.01) of the Japan Environmental Management Association for Industry (JEMA) Carbon Footprint of Products (CFP) Communication Program

## Mitigation of Global Warming through the Development of Energy-saving Measures

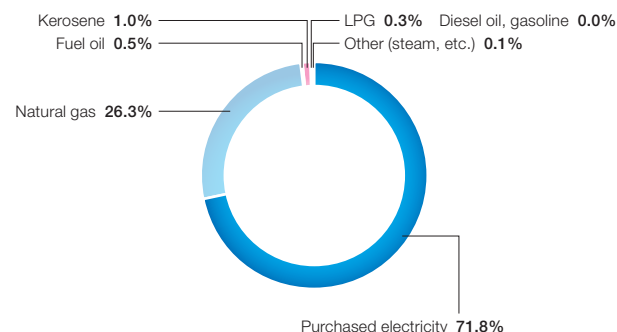
	Main Measures in Fiscal 2016	Reduction Result (t-CO <sub>2</sub> /year)	Main Plans for Fiscal 2017	Reduction Target (t-CO <sub>2</sub> /year)
Information & Communication	<ul style="list-style-type: none"> <li>Replaced existing cooling machines with high-efficiency alternatives (Sakado, Itabashi)</li> <li>Replaced existing compressors with low-pressure types (Ranzan)</li> </ul>	2,063	<ul style="list-style-type: none"> <li>Replace existing boilers with high-efficiency alternatives (Kawaguchi)</li> <li>Replace existing cooling machines with high-efficiency alternatives (Sendai)</li> </ul>	1,541
Living & Industry	<ul style="list-style-type: none"> <li>Replaced existing cooling machines with high-efficiency alternatives (Toppan Packaging Products Fukuoka)</li> <li>Replaced existing compressors with high-efficiency alternatives (Sagamihara)</li> </ul>	3,944	<ul style="list-style-type: none"> <li>Replace existing compressors with high-efficiency alternatives (Toppan Packaging Service Ranzan, Toppan Packaging Service Kyushu)</li> <li>Replace existing air conditioners with high-efficiency alternatives (Matsusaka)</li> </ul>	3,344
Electronics	<ul style="list-style-type: none"> <li>Saved energy used to operate cooling-water pumps by adopting a pipe-wear-reducing agent (Shiga)</li> <li>Replaced existing effluent processing pumps with high-efficiency alternatives (Kumamoto)</li> </ul>	558	<ul style="list-style-type: none"> <li>Apply inverter control for compressors (Kumamoto)</li> <li>Replace existing cooling machines with high-efficiency alternatives (Niigata)</li> </ul>	721
Non-production sites	<ul style="list-style-type: none"> <li>Replaced existing power receipt and substation equipment with high-efficiency alternatives (Ebie)</li> <li>Saved electricity through energy-saving activities (Toppan Logistics)</li> </ul>	-47	<ul style="list-style-type: none"> <li>Switch to LED lights (Ebie)</li> <li>Revamp the pure-water supply line (Toppan Technical Research Institute)</li> </ul>	4
Total	—	6,519	—	5,610

### Energy Consumption

(1,000 GJ)

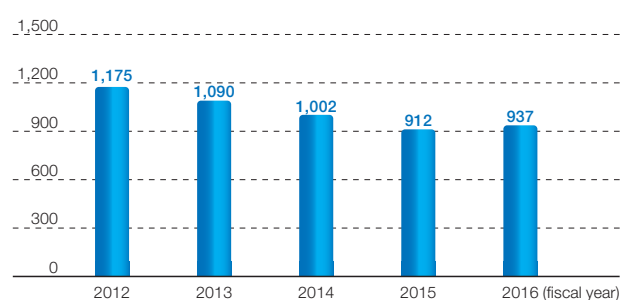


### Ratios by Energy Type (in terms of calorific value)



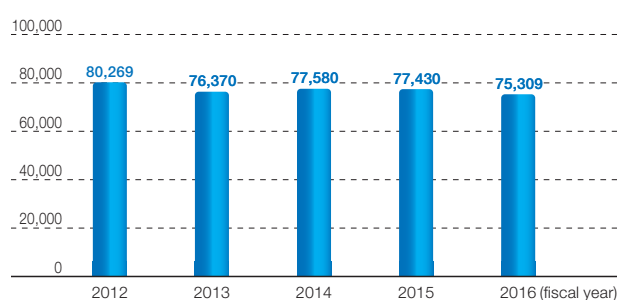
### Electricity Consumption

(GWh)



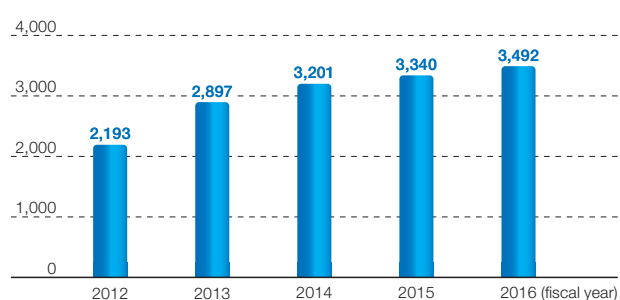
### Natural Gas Consumption

(1,000 Nm<sup>3</sup>)



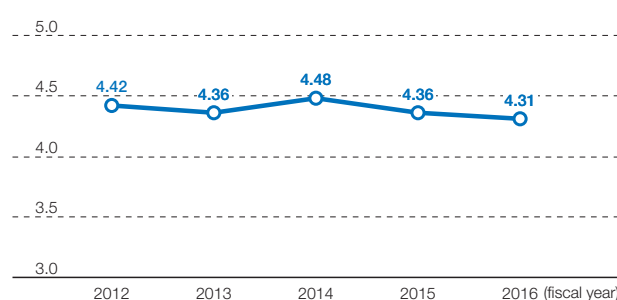
### Kerosene Consumption

(kL)



### Fuel Efficiency of Vehicles Owned by Toppan Logistics

(km/L)



\*The data for energy consumption and natural gas consumption in fiscal 2015 have been restated based on revised calculation methods.

### Ratios of Greenhouse Gas Emissions by Type (in tons of CO<sub>2</sub> equivalent)

Fiscal Year	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	PFC	Total
2016	99.62%	0.11%	0.24%	0.02%	882,070 t-CO <sub>2</sub>

### Ratios of Greenhouse Gas Emissions by Source (in tons of CO<sub>2</sub> equivalent)

Fiscal Year	Scope 1		Scope 2	Total
	Fuel Consumption	Non-energy-derived Greenhouse Gases	Electricity and Steam Consumption	
2016	26.14% (230,590 t-CO <sub>2</sub> )	2.23% (19,677 t-CO <sub>2</sub> )	71.63% (631,803 t-CO <sub>2</sub> )	100% (882,070 t-CO <sub>2</sub> )

Notes ● Calculated by the method specified in the Guidelines for Calculating Greenhouse Gas Emissions from Businesses (2003) issued by the Ministry of the Environment of Japan.  
 ● The greenhouse gas (GHG) emissions from domestic sites (subject to and not subject to the environmental targets) and overseas sites in fiscal 2016 are based on calculations of emissions of energy-derived CO<sub>2</sub> and non-energy-derived CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub>, and NF<sub>3</sub>. GHG emissions accounting for 0.01% or more of total emissions in CO<sub>2</sub>-equivalent values from these sites (namely, emissions associated with dry etching, dry ice consumed, waste burned in incinerators, combusted refuse-derived fuel, and fuel consumed in cogeneration systems) are included.

### Calculated Level of Fluorocarbon Leakage

Fiscal Year	Domestic Sites (subject to the environmental targets)	Domestic Sites (not subject to the environmental targets)	Overseas Sites
2016	2,405 t-CO <sub>2</sub>	762 t-CO <sub>2</sub>	1,425 t-CO <sub>2</sub>

Notes: The data for domestic sites subject to and not subject to the environmental targets are calculated in conformance with the Act on Rational Use and Proper Management of Fluorocarbons enforced in April 2015 in Japan.

The data for overseas sites are calculated based on methods corresponding to the Japanese Act on Rational Use and Proper Management of Fluorocarbons.

## ■ Building a Recycling-oriented Society

### Promotion of Waste Reduction and Recycling

	Main Measures in Fiscal 2016	Reduction Result (tons/year)	Main Plans for Fiscal 2017	Reduction Target (tons/year)
Information & Communication	Takino: Reduced the discharge of waste oil by reusing residual ink Sakado: Reduced the discharge of garbage by installing garbage treatment units	-95	Itabashi: Reduce the generation of waste plastics by improving arrangements in the production process Nagoya: Separate waste plastic containers for reuse as valuable resources	-88
Living & Industry	Takino: Reduced the discharge of waste paper by reducing initial paper loss Fukusaki: Processed aluminum-deposition films into valuable resources	-2,268	Satte: Process plastic pallets into valuable resources Wakayama: Reduce the generation of waste plastics by reducing process loss	-541
Electronics	Kumamoto: Salvaged machinery parts and electrical components for reuse as valuable resources Tamana: Reduced the generation of waste wood by asking contractors to collect pallets for carrying materials in the plant	-69	Shiga: Process waste acid into valuable resources by reviewing raw materials	-88
Non-production sites	Ebie: Reduced the discharge of waste liquids by reviewing the proof process	-7	Toppan Logistics: Separate waste paper for reuse as valuable resources	-14
Total	—	-2,439	—	-731

Note: Includes measures to reduce waste discharge per unit of production value, improve material recycling rates, reduce final landfill waste disposal, and expand the number of certified zero-emission sites.

### Fiscal 2016 Results of Waste Discharge and Recycling

Type of Waste	Waste Discharged (tons)	Ratio	Recycling Rate	Primary Reusage
Waste paper	166,920	73.3%	99.9%	Recycled paper
Waste plastic	27,715	12.2%	99.3%	Plastic materials, RPF*1
Waste oil	6,826	3.0%	99.4%	Recycled oil, fuel
Sludge	5,385	2.4%	98.3%	Roadbed materials
Waste metal	4,462	2.0%	99.9%	Metal materials
Waste alkali	4,789	2.1%	99.7%	Neutralizer
Waste acid	6,089	2.7%	99.0%	Neutralizer
Waste wood	2,585	1.1%	100.0%	Woodchip, paper materials
Cinder	813	0.4%	97.9%	Roadbed materials
Other	1,122	0.5%	92.2%	—
Waste glass	564	0.2%	99.0%	Glass materials
Food waste	304	0.1%	83.5%	Feed
Total	227,573	100.0%	99.7%	—

\*1 Refuse Paper & Plastic Fuel (RPF): Solid fuel primarily made from refuse paper and plastic waste



**Zero-emission Sites (TZERO-16) (61 sites approved in July 2016)**

Operational Site (Division or Group Company)	Total Waste Generation in Fiscal 2015 (tons)	Waste Recycled in Fiscal 2015 (tons)	Recycling Rate in Fiscal 2015 (%)	Rank
Sapporo Plant (Hokkaido Subdivision)	2,111	2,111	100.00	S
Sendai Plant (Higashinihon Division)	4,400	4,392	99.83	S
Itabashi Site	6,786	6,757	99.57	S
Asaka Site [Commercial Printing, Publications Printing] (Toppan Communication Products Co., Ltd.)	3,894	3,887	99.84	S
Asaka Site (Toppan Joho Kako Co., Ltd.)				
Asaka Securities Printing Plant (Toppan Communication Products Co., Ltd.)	3,250	3,250	100.00	S
Kawaguchi Site	39,898	39,898	100.00	S
Sakado Site	25,612	25,612	100.00	S
Ranzan Plant (Toppan Communication Products Co., Ltd.)	805	805	100.00	S
Nagoya Plant (Chubu Division)	7,072	7,068	99.94	S
Takino Plant (Toppan Communication Products Co., Ltd.)	9,466	9,384	99.13	A+
Takino Securities Printing Plant (Toppan Communication Products Co., Ltd.)	1,012	1,001	98.89	A
Fukuoka Plant (Toppan Communication Products Co., Ltd.)	6,019	6,019	100.00	S
Fukuyama Plant (Toppan Joho Kako Co., Ltd.)	1,940	1,925	99.19	A+
Oyodo Plant (Toppan Communication Products Co., Ltd.)	326	324	99.39	A+
Chitose Plant (Toppan Packaging Products Co., Ltd.)	3,215	3,151	98.00	A
Gunma Central Plant (Toppan Packaging Products Co., Ltd.)	11,016	11,001	99.86	S
Sagamihara Plant (Toppan Packaging Products Co., Ltd.)	17,039	17,039	100.00	S
Matsusaka Plant (Toppan Packaging Products Co., Ltd.)	3,101	3,063	98.78	A
Takino Plant (Toppan Packaging Products Co., Ltd.)	4,888	4,888	100.00	S
Fukusaki Plant (Toppan Packaging Products Co., Ltd.)	6,900	6,773	98.16	A
Fukusaki Plant (Toppan Plastic Co., Ltd.)	330	330	100.00	S
Fukuoka Plant (Toppan Packaging Products Co., Ltd.)	5,981	5,976	99.93	S
Miyata Plant (Toppan Packaging Service Co., Ltd.)	112	112	100.00	S
Mikkabi Plant (Toppan Packaging Products Co., Ltd.)	2,851	2,849	99.93	S
Tamana Plant (Toppan Packaging Products Co., Ltd.)	4,978	4,978	100.00	S
Miyagi Plant (Toppan Containers Co., Ltd.)	3,111	3,110	99.97	S
Sano Plant (Toppan Containers Co., Ltd.)	3,524	3,495	99.19	A+
Saitama Plant (Toppan Containers Co., Ltd.)	9,109	9,046	99.31	A+
Koshigaya Plant (Toppan Plastic Co., Ltd.)	174	173	99.28	A+
Satte Plant (Toppan Plastic Co., Ltd.)	485	480	98.85	A
Wakayama Manufacturing Section (Fukusaki Plant of Toppan Plastic Co., Ltd.)	126	126	100.00	S
Saga Plant (Toppan Plastic Co., Ltd.)	235	235	100.00	S
Ranzan Plant (Toppan Packaging Service Co., Ltd.)	467	467	100.00	S
Sodegaura Beverage Plant (Toppan Packaging Service Co., Ltd.)	1,574	1,574	100.00	S
Kyushu Plant (Toppan Packaging Service Co., Ltd.)	128	128	100.00	S
Mito Plant (Toppan Prosprint Co., Ltd.)	4,514	4,506	99.83	S
Satte Plant (Toppan Packaging Products Co., Ltd.)	453	453	100.00	S
Kashiwa Plant (Toppan Decor Products Inc.)	491	491	100.00	S
Satte Plant (Toppan Decor Products Inc.)	5,539	5,539	100.00	S
Harima Plant (Toppan Plastic Co., Ltd.)	663	663	100.00	S
Kansai Bottling Co., Ltd.	82	82	99.89	S
Asaka Plant (Toppan Electronics Products Co., Ltd.)	119	119	100.00	S
Shiga Plant (Toppan Electronics Products Co., Ltd.)	455	455	100.00	S
Shiga Plant (Toppan TOMOEGAWA Optical Films Co., Ltd.)	431	428	99.14	
Mie Plant [Kameyama] (Toppan Electronics Products Co., Ltd.)	2,515	2,515	100.00	S
Mie Plant [Hisai] (Toppan Electronics Products Co., Ltd.)	2,384	2,384	100.00	S
Niigata Plant (Toppan Electronics Products Co., Ltd.)	4,643	4,643	100.00	S
Kumamoto Plant (Toppan Electronics Products Co., Ltd.)	4,177	4,177	100.00	S
Toyama Plant (Toppan Electronics Products Co., Ltd.)	130	130	100.00	S
Toppan Technical Research Institute (Toppan Printing Co., Ltd.)	453	451	99.71	S
Sakado Distribution Processing Center (Toppan Logistics Co., Ltd.)	886	886	100.00	S
Sagamihara Plant (Toppan TDK Label Co., Ltd.)	401	401	99.91	S
Takino Plant (Toppan TDK Label Co., Ltd.)	394	394	99.99	S
Fukushima Plant (Toppan TDK Label Co., Ltd.)	2,056	2,055	99.93	S
Processing Research Institute (Tamapoly Co., Ltd.)	173	173	100.00	S
Gunma Plant (Tamapoly Co., Ltd.)	2,831	2,783	98.30	A
Sanda Plant (Tamapoly Co., Ltd.)	2,947	2,947	100.00	S
Tochigi Plant (Tamapoly Co., Ltd.)	1,999	1,997	99.91	S
Saitama Plant (Livrectech Co., Ltd.)	6,942	6,933	99.86	S
Hino Plant (Toppan Media Printec Tokyo Co., Ltd.)	761	760	99.95	S
Zama Plant (Toppan Media Printec Tokyo Co., Ltd.)	245	245	99.84	S
Ortus Technology Kochi Co., Ltd.	1,215	1,196	98.49	A

Note: Toppan approves operational sites as zero-emission sites based on a three-level grading system according to their recycling rates.

S-rank site: recycling rate of 99.5% or over; A+-rank site: recycling rate of 99% or over and less than 99.5%; A-rank site: recycling rate of 98% or over and less than 99%

Operational sites satisfying any of the above criteria were approved as zero-emission sites in July 2016.

## Preventing Pollution / Controlling Chemical Substances

### PRTR Data for Fiscal 2016

(Unit: kg/year)

PRTR No.	Chemical Substance	Handled	Released				Total Transferred
				1. Atmosphere	2. Water	3. Soil	
20	2-aminoethanol	21,714	0	0	0	0	6,093
44	Indium and its compounds	3,564	2	0	2	0	0
53	Ethylbenzene	21,898	1,937	1,937	0	0	774
59	Ethylenediamine	4,359	0	0	0	0	4,359
71	Ferric chloride	1,644,774	1	0	1	0	1,577,624
76	Epsilon-caprolactam	2,251	0	0	0	0	246
80	Xylene	57,467	2,597	2,597	0	0	782
87	Chromium and chromium (III) compounds	23,092	11	0	11	0	16,238
88	Chromium (VI) compounds	13,216	0	0	0	0	1,187
151	1,3-dioxolane	9,254	463	463	0	0	1,981
213	N,N-dimethylacetamide	2,422	145	145	0	0	349
243	Dioxins (mg-TEQ)	855	1	1	0	0	853
245	Thiourea	1,589	1	0	1	0	1,588
272	Copper salts (water-soluble, except complex salts)	246,106	854	0	854	0	108,139
296	1,2,4-trimethylbenzene	102,265	6,213	6,213	0	0	15,312
297	1,3,5-trimethylbenzene	12,262	412	412	0	0	3,106
300	Toluene	2,118,886	128,656	128,656	0	0	138,272
308	Nickel	53,709	0	0	0	0	0
309	Nickel compounds	19,820	5	0	5	0	17,908
392	N-hexane	1,211	150	150	0	0	77
405	Boron compounds	1,576	0	0	0	0	52
411	Formaldehyde	5,463	98	98	0	0	35
412	Manganese and its compounds	5,916	20	0	20	0	712
438	Methylnaphthalene	11,766	58	58	0	0	0
448	Methylenebis(4,1-phenylene) diisocyanate	39,716	0	0	0	0	0
	Total	4,424,298	141,624	140,731	893	0	1,894,834

Notes: •Period covered: April 1, 2016–March 31, 2017

- Operational sites covered: Sites that handle more than 1.0 ton of Class I designated chemical substances per year (or specified Class I designated chemical substances in excess of 0.5 tons per year)
- The total transfer is the sum of transfers into waste and sewage systems.

## Promoting the Conservation of Biodiversity

### ECO-GREEN Purchasing

Fiscal Year	2012	2013	2014	2015	2016
Number of Cases	2,561	2,484	2,867	2,811	2,949

Note: ECO-GREEN is a toilet paper composed of about 50% used Cartocan paper.

## Eco-creativity Activities

### List of Environmentally Friendly Products (87 products as of March 2017)

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 recyclable 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 (AI)	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

Business Field	Product	Standard Categories
Living & Industry	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
	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 PREPRA 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
Living & Industry	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 Material)	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

## Environmental Accounting

### Capital Investment for Environmental Conservation (million yen)

Item	Major Content	Fiscal 2016	Increase/Decrease from Fiscal 2015	Average for the Last Five Years
1	Investment in equipment to prevent pollution	1,571	413	1,109
2	Investment in equipment to conserve the global environment	1,194	-65	1,031
3	Investment in equipment to circulate resources	137	-94	295
4	Investment in equipment to carry out environmental management activities	15	8	44
Total		2,918	262	2,479

### Environmental Conservation Benefit

Item	Major Content	Increase/Decrease*1	Fiscal 2016
Energy	Total energy consumption (1,000 GJ)	99	18,980
Water	Water consumption (1,000 m³)	-735	9,226
Atmosphere	CO <sub>2</sub> emission (1,000 t-CO <sub>2</sub> )	-15	876
	Emission of dioxins (mg-TEQ)	1	4
Water and soil environments	Total effluent discharge (1,000 m³)	317	8,337
	BOD (tons)	-6	14
	COD (tons)	-3	11
Waste	Total discharge (1,000 tons)	-13	363

\*1 Increases and decreases from fiscal 2015

## Green Procurement and Green Purchasing

### Green Procurement Standards for Paper and Level of Fulfillment

Green Principle	Level 1	Level 2	Fiscal 2016 Result*2
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	2.1%
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)

\*2 Level 1 or 2 paper used (kg) / offset paper purchased (kg)

### Green Procurement Standards for Ink and Level of Fulfillment

Green Principle	Level 1	Level 2	Fiscal 2016 Result*3
1. Avoiding the use of substances harmful to the human body	Conformance with the NL regulations of the Japan Printing Ink Makers Association		97.4%
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)

\*3 Level 1 or 2 ink used (kg) / offset ink purchased (kg)

### In-house Green Purchasing Standards and Levels of Fulfillment

Product	Standard	Fiscal 2016 Result
Copy machines and printers	Configured to automatically revert to low-power mode or off mode	89.1%
PCs	Configured to automatically revert to low-power mode or off mode	100%
Stationery and office goods	Products listed in eco-friendly product catalogues of manufacturers	76.2%