Management

Environmental Policy | Disclosure in Accordance with the TCFD and TNFD Recommendations | Environmental Management | Contributing to Decarbonization | Biodiversity | Building of a Recycling-oriented Society | Control of Chemical Substances | Pollution Control | Environmental Data

Contributing to Decarbonization

Basic Approach

Approach Policy

TOPPAN has formulated the following basic policies to contribute to decarbonization.

Global climate change has huge impacts on corporate activities and the lives of people around the world. Recognizing this burden, we position contributions to decarbonization as a critical challenge for management. Based on the TOPPAN Group Declaration on the Global Environment, every person in the Group is firmly committed to the creation of a sustainable society and strives to address climate change as a responsible member of the international community.

Energy control and the rational use of energy are our prime approaches to achieving a decarbonized economy. We will also continue to adopt renewable energy sources on a preferential basis and encourage the broad use of renewables across society.

More details on our SBTi Approved GHG Emission Reduction Targets > https://www.holdings.toppan.com/en/sustainability/environment/#anchor_07

Activities

Activity results, performance data

Reducing Greenhouse Gas Emissions

The TOPPAN Group has been reducing the total emissions of carbon dioxide (CO₂) and other greenhouse gases (GHGs) to help decarbonize society. To reduce Scope 1 GHG emissions (direct emissions from industrial processes or fuels consumed at the Group), we are systematically replacing utility facilities operated for extended periods with high-efficiency alternatives. Systems are also installed to abate high-global-warmingpotential (GWP) gases emitted from semiconductor production processes, and high-GWP gases are switched to lower-GWP alternatives.

To reduce Scope 2 GHG emissions (indirect emissions associated with the consumption of electricity, heating, or cooling purchased or acquired by the Group), we are scaling down power consumption by adopting energy-efficiency measures and renewables such as solar panels. A switch to electricity contracts with lower CO₂ emission factors is now being considered.

We are also scaling up the installation of energy-efficient, renewable-energy-driven facilities using carbon prices set under the internal carbon pricing (ICP) system introduced across the Group in fiscal 2023.

Meanwhile, Toppan Logistics Co., Ltd., the logistics specialist for the Group, is working with Group company shippers to optimize transportation conditions and further enhance transportation efficiency. These companies are pooling their efforts to reduce the energy consumption per unit of transport volume by company vehicles and the total volume of CO₂ emissions from transport.

As a member of the Japan Federation of Printing Industries (JFPI), TOPPAN Holdings Inc. has driven industry-wide efforts to spawn decarbonization measures, chiefly through its involvement in JFPI activities to address climate change and promote low carbonization. The JFPI's Working Group for Voluntary Action Plans on the Environment (under the Environmental Management Task Force of the Global Environment Committee) has supported decarbonization efforts across the printing industry by implementing volatile organic compound (VOC)-emission reduction measures and various other measures targeting the realization of a low-carbon, circular economy. In May 2023, TOPPAN Holdings became a member of the GX League, an industry-government-academia forum established by the Ministry of Economy, Trade and Industry of Japan. This forum advocates for social structural change to achieve Japan's goal of carbon neutrality by 2050. TOPPAN will drive green transformation (GX) towards the transformation of Japan's socio-economy in cooperation with other companies, financial institutions, universities, public research institutions, and government bodies. The discussions and knowledge gained at the GX League rule-making working groups reinforce our Groupwide endeavors to address global environmental issues, especially climate change.

Governance (G)

Energy Management Programs

The energy management programs (EMPs) we are pursuing towards a decarbonized society follow a cycle of monitoring, target-setting, and continual improvement in energy efficiency within the ISO 14001 framework.

The Ecology Center receives monthly energy performance data from Group sites collected under their environmental management systems and compares the monthly values with past data and progress towards quantified targets. Constant energy-use assessments allow the center to efficiently control energy consumption by promptly detecting wasteful energy usage across plant facilities. The center regularly reports performance data to senior management, who in turn provide oversight and feedback on progress towards the targets. Energy audits, meanwhile, identify opportunities for improving energy performance. Based on the requirements of the Act on Rationalization of Energy Use and Shift to Non-fossil Energy of Japan, auditors review site-based energy summary tables and

flow charts once a year to evaluate how increases and decreases in plant facilities affect the energy performances of individual sites.

By implementing these organizational EMPs in conformance with the ISO 14001 requirements, TOPPAN is enhancing energy efficiency to contribute to a decarbonized society. ISO 14001 provides us with a clear framework for achieving continual improvement in the effectiveness of our energy management.

Image: More details on our EMPs towards a decarbonized society >

https://www.holdings.toppan.com/en/sustainability/environment/globalwarming.html#anc2



Thermal Barrier Coating at the TPP Fukusaki Plant

The Fukusaki Plant of Toppan Packaging Products Co., Ltd. is a specialist in flexible packaging printing based in Hyogo Prefecture, Japan. In August 2023, the plant utilized its ICP system to apply a thermal barrier coating handled by TOPPAN onto the 870 m² segmented roof of the main plant building. The coated roof effectively reflects sunlight and lowers indoor air-conditioning load in the summer, reducing CO_2 emissions by 6 t- CO_2 a year (estimation).





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Data on Greenhouse Gas Emissions

Activity results, performance data

Greenhouse Gas Emissions

Scope 1 & 2 Greenhouse Gas Emissions

(subject to the Group medium-and-long-term environmental targets) \checkmark







Scope 3 Greenhouse Gas Emissions

*The methods for calculating Scope 3 GHG emissions are presented on page 114.

*The results for fiscal 2017 and 2022 are adjusted based on the calculation methods applied to the fiscal 2023 results. (The results before the revision were 7,365 kt-CO₂e and 5,929 kt-CO₂e, respectively.)

Scope 1, 2, 3 Greenhouse Gas Emissions

Based on the fiscal 2023 results, TOPPAN calculated Groupwide Scope 3 greenhouse gas (GHG) emissions (indirect emissions not included in Scope 2, associated with business operations throughout the entire value chain of the Group) to identify the categories of corporate activity that emitted more GHGs and to establish priority targets in the Group's GHG-emission reduction strategy. This calculation showed that several categories related to raw material consumption collectively accounted for the largest share of our GHG emissions, primarily: category 1 (manufacturing of products purchased by the Group), categories 4 and 9 (transportation and distribution of products purchased and sold by the Group), and category 12 (end-of-life treatment of products sold by the Group).









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Details of the Scope 1, 2, and 3 Categories

Emissions Types		Emissions Types	For Scope 1 & 2 emissions, greenhouse gas (GHG) emissions associated with electricity consumption at domestic sites are calculated using the adjusted emission factors
	Direct emissions (Scope 1) Direct emissions from industrial processes or fuels consumed at the reporting company		Dischargers issued by the Ministry of the Environment (MOE) of Japan. The conversion factors used to calculate GHG emissions associated with electricity consumption at overseas sites are prioritized in the following order: 1) the factors independently set by the electric utilities from which Group sites purchase electricity. 2) the factors
	Indirect emissions (Scope 2)	Indirect emissions associated with the consumption of electricity, heating, or cooling purchased or acquired by the reporting company	published by central and local governments, and 3) the latest factors published by the International Energy Agency (IEA). GHG emissions associated with fuel consumption, excluding electricity consumption, are calculated globally by the MOE method specified in the Ministerial Ordinance Concerning the Calculation of Greenhouse Gas Emissions from the Business Activities of Specified Dischargers.

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	Emissions associated with the procurement of fuels supplied by entities outside the reporting company or fuels	1. Electricity and steam consumption	1. MOE-DB ^{*1}
Category 5	(not included in Scope 1 or Scope 2)	necessary for the generation, etc. of electricity, heating, cooling, etc. consumed by the reporting company	2. Fuel consumption	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	 Freight ton-kilometers as a designated shipper classified under the Energy Saving Act of Japan Estimated freight ton-kilometers of procurement logistics 	 Act on Rationalization of Energy Use and Shift to Non-fossil Energy (Energy Saving Act) of Japan IDEA^{*3}
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, excluding emissions associated with accommodation for business travelers	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	IDEA ^{*3}
Category 10	Processing of sold products	Emissions associated with the processing of sold intermediate products by downstream companies	Excluded	
Category 11	Use of sold products	Emissions associated with the end use of sold products by users (consumers, downstream companies)	Excluded	
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	
Other	Upstream	Other upstream emissions	Not applicable	
Other	Downstream	Other downstream emissions	Not applicable	

Notes

• TOPPAN calculates the Group's Scope 3 GHG emissions for categories 1-9 and 12.

• The calculation boundary covers Groupwide GHG emissions associated with TOPPAN Holdings Inc. and Group entities consolidated for accounting purposes.

• For "1. 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, we have 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 for calculating the greenhouse gas emissions, etc. of organizations throughout the entire supply chain (ver. 2.5) issued by the Ministry of the Environment of Japan

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

*3 IDEA: Inventory Database for Environmental Analysis (IDEA) version 2.3, a life cycle inventory (LCI) database from the National Institute of Advanced Industrial Science and Technology of Japan

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Percentages of Greenhouse Gas Emissions by Type (in tons of CO₂ equivalent)



Total: 1,044,439 t-CO2e



Notes

·For Scope 1 & 2 emissions, greenhouse gas (GHG) emissions associated with electricity consumption at domestic sites are calculated using the adjusted emission factors according to the method specified in the Ministerial Ordinance Concerning the Calculation of Greenhouse Gas Emissions from the Business Activities of Specified Dischargers issued by the Ministry of the Environment (MOE) of Japan. The conversion factors used to calculate GHG emissions associated with electricity consumption at overseas sites are prioritized in the following order: 1) the factors independently set by the electric utilities from which Group sites purchase electricity, 2) the factors published by central and local governments, and 3) the latest factors published by the International Energy Agency (IEA). GHG emissions associated with fuel consumption, excluding electricity consumption, are calculated globally by the MOE method specified in the Ministerial Ordinance Concerning the Calculation of Greenhouse Gas Emissions from the Business Activities of Specified Dischargers. •Fiscal 2023 GHG emissions from domestic sites (including Group company sites) and overseas sites are based on calculations of energy-derived CO₂ emissions and non-energy-derived GHG emissions (namely, CO2, CH4, N2O, HFC, PFC, SF6, and NF3 emissions associated with dry etching, dry ice consumed, and fuel consumed in cogeneration systems). GHG emissions accounting for 0.01% or more of total emissions from these sites in CO2-equivalent values are included.

Values, Results, and Evaluation of Environmental Targets for Fiscal 2023

	Deufermen es Terretet	Derformen se Indicator		Fiscal 2023			
	Performance farget	Performance Indicator	Target Value	Result	Achievement Rate	Evaluation	
Contributing to decarbonization	Reduce CO ₂ emissions	Scope 1 & 2 greenhouse gas emissions	1,109 kt-CO2e	1,044 kt-CO2e 🗹	105.9%	S	
		Scope 3 greenhouse gas emissions	6,041 kt-CO2e	5,710 kt-CO2e 🗹	105.5%	S	

Evaluation criteria

S: Results achieved far surpass the targets (achievement rate [%] \ge 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 rate: 200 – (values actually achieved / target values) x 100 [%]

Domestic Sites	1,411 t-CO2e
Overseas Sites	1,851 t-CO2e

Notes

• The value shown for domestic sites is calculated in conformance with the Act on Rational Use and Proper Management of Fluorocarbons enforced in April 2015 in Japan.

• The value shown for overseas sites is calculated by a method aligned with that prescribed under the Japanese act.

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Associated Data

Activity results, performance data

Energy Consumption

TOPPAN evaluates and discloses Groupwide performance data, including that from overseas Group subsidiaries.



Electricity Consumption



*The fiscal 2023 result includes electricity derived from renewable energy sources.

Renewable-derived Energy: Amount and Ratio

Fiscal Year	Renewable-derived Energy (GWh/year)	Ratio (%)
2021	11.10	0.67
2022	20.22	1.19
2023	41.81	2.52

*Renewable-derived energy (electricity derived from renewable energy sources) is the renewable energy procured from PPA providers and electricity retailers plus the total energy generated at renewable energy power facilities (for solar power and hydro power) installed at Group sites. *The ratio of renewable-derived energy is the percentage of electricity derived from renewable energy sources out of our overall power consumption.

Natural Gas Consumption



Fuel Efficiency of Outsourced Cargo Vehicles



Kerosene Consumption

