

Contributing to Decarbonization

Basic Approach

Approach Policy

The TOPPAN Group 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.

Activities

Activity results, performance data

Reducing Greenhouse Gas Emissions

We have been reducing 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-warming-potential (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 through energy-efficiency measures and the adoption of renewables such as solar panels. Electricity contracts with lower CO₂ emission factors are also being considered.

We are introducing an internal carbon pricing (ICP) system that will be applied to capital investments from fiscal 2023 onwards. This will allow us to scale up the installation of energy efficient, renewable-energy-driven facilities.

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 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 made particularly strong industry-wide decarbonization contributions by implementing VOC-emission reduction measures and various other activities targeting the realization of a low-carbon, circular economy.

Topic

Achieving the Fiscal 2030 Goals

We have made further headway in our shift to renewable energy sources under the TOPPAN Group Medium-and-Long-Term Environmental Targets for Fiscal 2030. In March 2023 we installed solar-power generation equipment on the rooftop of the B building at the Satte Plant of Toppan Decor Products Inc. in Saitama Prefecture, the core producer of décor products within the Group. The power generated by the equipment is consumed on the site premises, prospectively reducing CO₂ emissions from plant operations by 282 t-CO₂ a year.



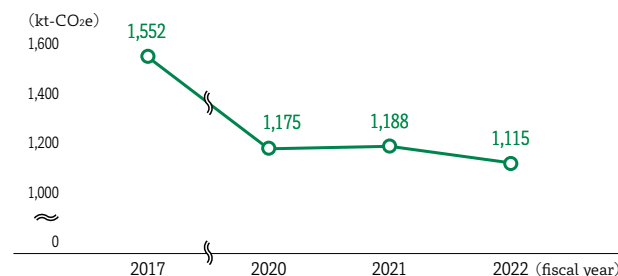
Roof of B building, Satte Plant of Toppan Decor Products

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) ✔

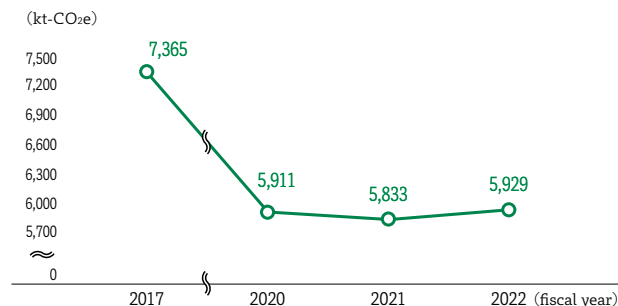


*For Scope 1 & 2 emissions, greenhouse gas (GHG) emissions associated with electricity consumption at domestic sites are calculated using the adjusted emission factor according to the method specified in the Ministerial Ordinance Concerning the Calculation of Greenhouse Gas Emissions from the Business Activities of Specified Dischargers issued by the Ministry of the Environment (MOE) of Japan. Meanwhile, GHG emissions associated with electricity consumption at overseas sites are calculated using country-specific conversion 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.

*The fiscal 2017 result is adjusted based on the revised medium-and-long-term environmental target (see page 96). (The result before the revision was 1,373 kt-CO₂e.)

Scope 3 Greenhouse Gas Emissions (subject to the Group medium-and-long-term environmental targets) ✔



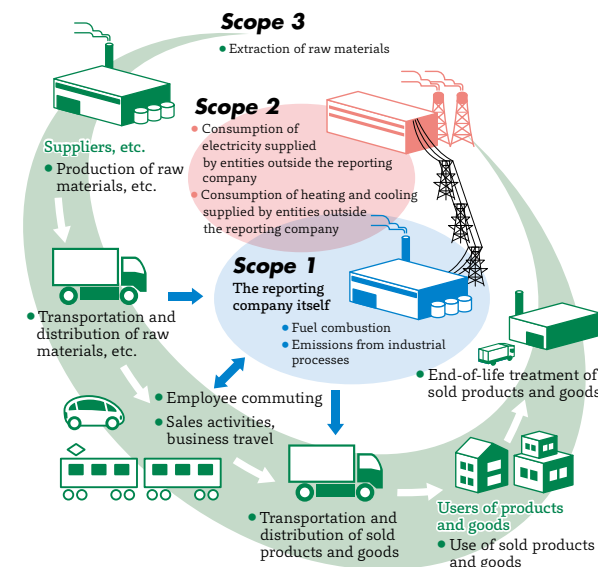
*Methods for calculating the Scope 3 GHG emissions are presented on page 107.

*The fiscal 2017 result is adjusted based on the revised medium-and-long-term environmental target (see page 96). (The result before the revision was 6,122 kt-CO₂e.)

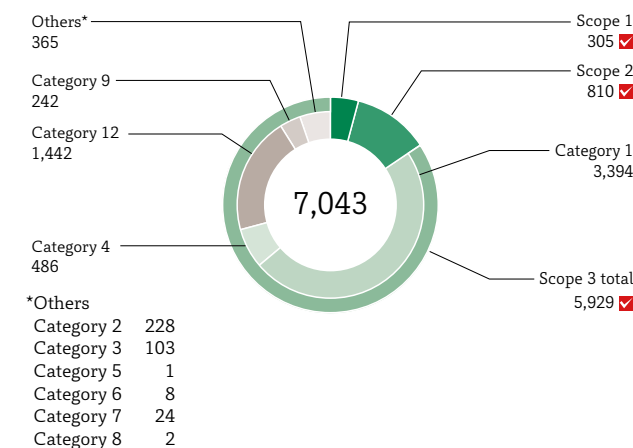
Scope 1, 2, 3 Greenhouse Gas Emissions

Based on the fiscal 2022 results, we 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 our 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).

Calculating Scope 3 Greenhouse Gas Emissions



Scope 1, 2, 3 Greenhouse Gas Emissions (kt-CO₂e)



Details of the Scope 1, 2, and 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

- For Scope 1 & 2 emissions, greenhouse gas (GHG) emissions associated with electricity consumption at domestic sites are calculated using the adjusted emission factor 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. Meanwhile, GHG emissions associated with electricity consumption at overseas sites are calculated using country-specific conversion 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 (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 the TOPPAN Group'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	

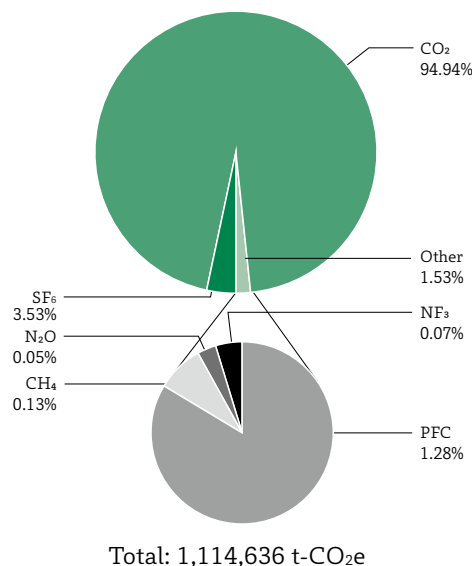
Notes

- We calculate our Scope 3 GHG emissions for categories 1-9 and 12.
- The calculation boundary covers Groupwide GHG emissions associated with Toppan Inc. and Group entities consolidated for accounting purposes.
- 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, 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.

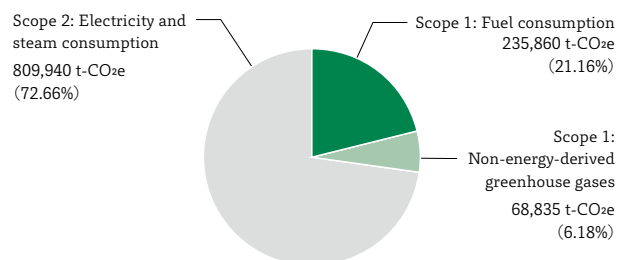
*1 MOE-DB: Emission unit database for calculating the greenhouse gas emissions, etc. of organizations throughout the entire supply chain (ver. 2.5) issued by the Ministry of the Environment of Japan

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

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



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



Notes • For Scope 1 & 2 emissions, greenhouse gas (GHG) emissions associated with electricity consumption at domestic sites are calculated using the adjusted emission factor 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. Meanwhile, GHG emissions associated with electricity consumption at overseas sites are calculated using country-specific conversion 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 2022 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, waste burned in incinerators, combusted refuse-derived fuel, 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 2022

	Performance Target	Performance Indicator	Fiscal 2022			
			Target Value	Result	Achievement Rate	Evaluation
Contributing to decarbonization	Reduce CO ₂ emissions	Scope 1 & 2 greenhouse gas emissions	1,117 kt-CO ₂ e	1,115 kt-CO ₂ e ✓	100.2%	A
		Scope 3 greenhouse gas emissions	5,651 kt-CO ₂ e	5,929 kt-CO ₂ e ✓	95.1%	B

Evaluation criteria

- S: Results achieved far surpass the targets (achievement rate [%] ≥ 105)
 - A: Targets achieved (100 ≤ achievement rate [%] < 105)
 - B: Activities fully carried out, but targets unachieved (70 ≤ achievement rate [%] < 100)
 - C: Activities insufficient (achievement rate [%] < 70)
- Achievement rate: 200 - (values actually achieved / target values) x 100 [%]

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

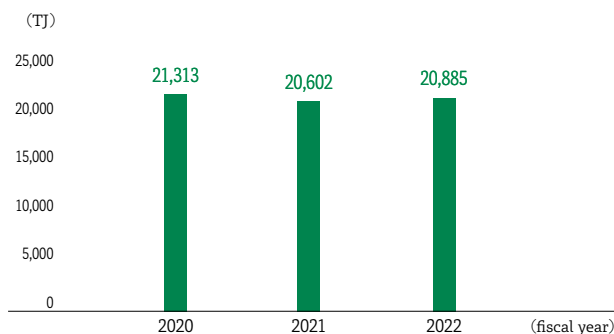
Associated Data

Activity results, performance data

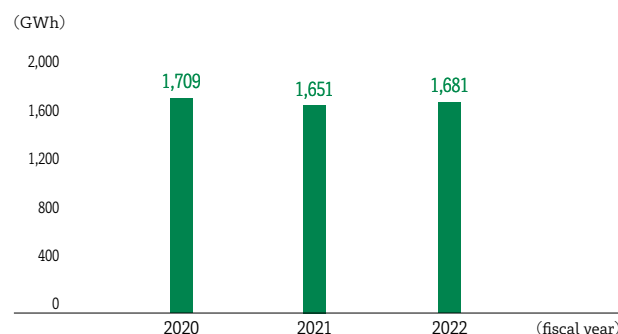
Energy Consumption

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

Energy Consumption ✔

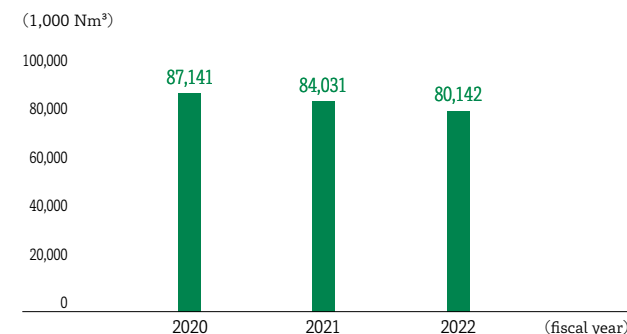


Electricity Consumption

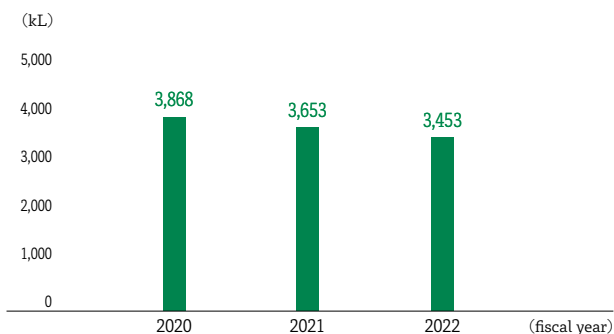


*We consume electricity derived from renewable energy sources, in addition to the electricity shown above.

Natural Gas Consumption



Kerosene Consumption



Renewable-derived Energy: Amount and Ratio

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

*Renewable-derived energy (electricity derived from renewable energy sources) is the renewable energy procured from electricity retailers plus the total energy generated at renewable energy power facilities (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.

Fuel Efficiency of Outsourced Cargo Vehicles

