Climate Change Disclosure According to TCFD Recommendations

Toppan conducts business worldwide, and we recognize the scale of the impact of climate change on the Group. We consider climate change to be an important issue in sustainability management. In 2019, we announced our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which was established by the Financial Stability Board. In 2020, we commenced scenario analysis based on the recommendations. We disclose the financial impact related to climate change, and our responses, in accordance with the TCFD recommendations.

After announcing our support for the TCFD recommendations in 2019, we have been conducting scenario analysis and disclosing related information since 2020.

In 1992, Toppan formulated the Toppan Printing Declaration on the Global Environment, which set out our basic philosophy on environmental conservation activities. In April 2009 we revised this declaration to create the Toppan Group Declaration on the Global Environment, our basic philosophy for more proactive Groupwide conservation activities.

In November 2019, we established the *TOPPAN SDGs STATEMENT*, setting out a commitment to integrate the SDGs into management. The statement describes the "fulfilling, sustainable living" that Toppan wants to enable and identifies environmental issues, including climate change, to be addressed through Companywide activities and specific business activities, respectively.

Thematic Area 1: Governance

a) Board of Directors' Oversight of Climate-related Risks and Opportunities

1) Organizational initiatives and the responsibilities of the Board of Directors

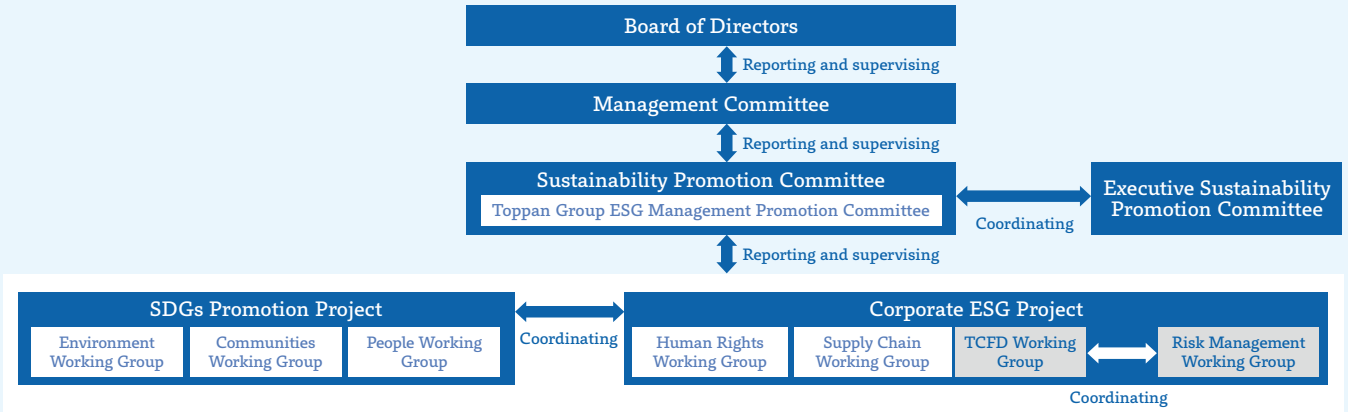
Under the key concept of "Digital & Sustainable Transformation," the Medium Term Plan from fiscal 2021 defines "expanding ESG initiatives" as a priority measure for the medium to long term, and we are strengthening efforts related to environmental, social, and governance (ESG) issues, including climate change.

The Board of Directors recognizes climate change as an important issue in management strategy, and consideration is given to climate change risks and opportunities in investments for business growth (including business portfolio transformation centered on DX and SX for social issues).

As for specific initiatives that address ESG issues, through the Management Committee, the Board of Directors receives reports regarding the details of actions considered and discussed by the Sustainability Promotion Committee. The Board discusses, monitors, and supervises target setting and progress.

Toppan's Medium Term Plan
https://www.toppan.com/en/ir/management/policy.html ›

Governance Structure for Addressing Climate Change and Other ESG Issues



2) Receipt of reports by the Board of Directors regarding climate-related issues—process and frequency

Each year in April, the Board receives and approves reports regarding greenhouse gas (GHG) emission results for the previous fiscal year under the Toppan Group Environmental Vision's Medium-and-Long-Term Environmental Targets, and reports regarding single-year GHG emission targets for the current fiscal year.

On a quarterly basis, the Board receives reports regarding the assessment and status of climate-related issues. In addition, the Board implements comprehensive decision-making with regard to such matters as management strategy, taking climate-related issues into account.

As for nonscheduled reports, in the event that new regulations, systems, or the like pertaining to climate-related issues are announced, through the Sustainability Promotion Committee, the Board receives reports regarding evaluations and responses from related internal departments. Based on these, the Board then discusses and decides on responses.

b) Management's Role in Assessing and Managing Climate-related Risks and Opportunities

The Board of Directors has assigned responsibility for climate-related issues to the Sustainability Promotion Committee (Chair: President & Representative Director).

The committee coordinates climate-related issue assessments and countermeasures while cooperating with the TCFD Working Group, the Risk Management Working Group, and the SDGs Promotion Project, which are under the committee.

Through the Management Committee, the Board of Directors receives reports from the Sustainability Promotion Committee regarding the assessment and status of climate-related issues as well as target management. In addition, it implements comprehensive decision-making with regard to such matters as management strategy, taking climate-related issues into account.

Thematic Area 2: Risk Management

a) Organization's Processes for Identifying and Assessing Climate-related risks

Climate-related risks are identified in terms of several risk types in relation to Toppan's business activities and the products and services provided. Specifically, these risk types are existing regulations, new regulations, technologies, legislation, markets, reputation, and rapid and gradual physical change. The TCFD Working Group under the Sustainability Promotion Committee identifies potential risks and opportunities associated with each risk type and assesses financial impact and impact on brand image. Risks and opportunities are then organized in terms of their relationship with the priority measures defined in the Medium Term Plan, such as driving the DX business and advancing global business centered on SX, and arranged in order of priority based on assessment of level of importance.

The TCFD Working Group periodically monitors existing and new regulations related to climate change, including not only international agreements, related laws and ordinances, and regulations but also rules and guidance on matters such as corporate governance and disclosure.

b) Organization's Processes for Managing Climate Change Risks

The Risk Management Working Group is responsible for formulating and advancing plans to address climate change risks. Risks identified and assessed by the TCFD Working Group are reported to the Risk Management Working Group, and the two working groups coordinate to define countermeasures.

Countermeasures are reported to the Sustainability Promotion Committee, and the approval of the Board of Directors is obtained.

c) How Processes for Identifying, Assessing, and Managing Climate-related Risks Are Integrated into the Organization's Overall Risk Management

Toppan's overall risk management is handled by the Risk Management Working Group, which is administered by the Legal Affairs Division's Compliance Department.

In identifying and assessing risks, those that could exert a significant impact on management are considered to be "significant risks." Significant risks are identified each year by the Risk Management Working Group based on the results of assessments by head office divisions responsible for each type of risk. Consideration is given to such factors as the results of risk assessments at business divisions, subsidiaries, and Group companies; social conditions; and risks that could arise over the medium to long term.

Climate-change issues are also identified as significant risks and included in the framework for overall risk management.

See Risk Management on page 139 >

Thematic Area 3: Strategy

a) Climate-related Risks and Opportunities the Organization Has Identified over the Short, Medium, and Long Term

1) Review status for risks and opportunities in the organization's time frames (short-, medium-, and long-term perspectives)

The time frames for risks and opportunities are as follows: short term, within 1 year; medium term, 2 to 3 years; and long term, 4 to more than 30 years. They are coordinated with the Company's business action plans, which are the fiscal-year plans, medium-term plans, and long-term vision. Assessments of climate-related risks and opportunities are conducted by related departments.

2) Processes used to determine which risks and opportunities could have a material financial impact on the organization

In implementing the scenario analysis, Toppan established the TCFD Working Group under the Sustainability Promotion Committee. Personnel from relevant head office divisions and business divisions participate in the TCFD Working Group to identify significant risks and opportunities related to climate change, assess the financial impacts, and consider measures based on those assessments.

Business strategy personnel from major business divisions participated in the consideration of business opportunities in fiscal 2021. Scenario analysis consideration was coordinated with the medium-term plans of each business division. Financial impacts were assessed with a focus on more specific businesses, and countermeasures were considered.

In the fiscal 2021 scenario analysis, the Company utilized two scenarios: the 1.5℃ and 4℃ scenarios. In addition to operations in Japan, where the majority of Toppan's business is conducted, scope was expanded to include overseas bases, and the entire supply chain was considered, including R&D, procurement, production, and product supply. Long-term forecasts up to 2050 were considered.

See Special Report 3: Evolution of Activities Focused on the TCFD on page 27 ›

3) Climate-related issues with a large financial impact

Under the 1.5℃ scenario, we reconfirmed that there are risks of increased costs accompanying the introduction of a carbon tax and higher prices for purchased energy, and that, based on changes in consumer preferences, there are opportunities for increased sales of low-carbon-emission products and services and for gains in corporate value.

Under the 4℃ scenario, increased wind and flood damage resulting from higher atmospheric temperatures could lead to such risks as stoppages at major plants. However, Toppan is advancing countermeasures, such as BCP formulation.

b) Impacts of Climate-related Risks and Opportunities on the Organization's Business, Strategy, and Financial Planning

*Provided on the following page.

c) Resilience of the Organization's Strategy, Taking into Consideration Different Climate-related Scenarios

The following scenarios were used in scenario analysis. For the 1.5℃ scenario, the IEA's World Energy Outlook 2021, Net Zero Emissions by 2050 Scenario was used. For the 4℃ scenario, the IEA's World Energy Outlook 2021, Stated Policies Scenario (STEPS) and Announced Pledges Scenario (APS) were used. The period covered was 2030 to 2050.

As a result of the scenario analysis, transition risks include increased operational costs against a background of expansion of carbon pricing systems targeting the realization of carbon neutrality worldwide. In addition, physical risks include halts in production due to water damage, such as flooding, at production sites, and increases in expenses for restoration. Countermeasures include introducing renewable energy in a step-by-step manner, strengthening disaster-preparedness measures, and aiming to create and expand business opportunities related to such changes, based on the Medium Term Plan's key concept of Digital & Sustainable Transformation. Specifically, we will advance the development of DX solution services that contribute to the reduction of greenhouse gas emissions in the supply chain and expand the lineup of sustainable packaging that offers improved recyclability and contributes to reducing food loss.

By continuing to conduct scenario analysis, Toppan will enhance its accuracy, further drive its integration into management strategy, and strengthen resilience to an uncertain future.

b) Impacts of Climate-related Risks and Opportunities on the Organization's Business, Strategy, and Financial Planning

1) Impact of identified climate-related issues on business strategy

Time frames: short term, within 1 year; medium term, 2 to 3 years; long term, 4 to more than 30 years
Financial impact: small, less than 1 billion yen; medium, 1 billion yen to 10 billion yen; large, more than 10 billion yen

Scenario	Change in Social Trends	Risks and Opportunities	Time Frame	Financial Impact	Principal Countermeasures / Business and Services That Will Become Opportunities
Transition 1.5°C Scenario	Introduction of / increase in carbon tax	Cost increases due to imposition of carbon tax, emission credit trading	Medium term	Medium Increase of 6.4 billion yen from fiscal 2020	Implement Scope 1 + 2 GHG emission reduction activities in the Medium-and-Long-Term Environmental Targets for Fiscal 2030, focused on the Toppan Group Environmental Vision 2050; monitor systems, renewable energy technologies, etc., from long-term viewpoint
	Increase in renewable energy ratio	Increase in operational costs due to rise in purchased energy prices	Medium term	Small to medium	Implement Scope 1 + 2 GHG emission reduction activities in the Medium-and-Long-Term Environmental Targets for Fiscal 2030, focused on the Toppan Group Environmental Vision 2050; monitor systems, renewable energy technologies, etc., from long-term viewpoint
		Expansion of green-energy-related markets	Medium to long term	Medium	Strengthen production/sales of battery packaging materials for EVs, enter renewable-energy-related businesses
	Strengthening of GHG reductions at client companies	Decline in existing paper media accompanying digital shift	Medium term	Medium	Accelerate initiatives for business portfolio transformation, a priority measure in the Medium Term Plan
		Increase in customer needs for reducing GHG emissions across the entire supply chain	Short term	Large	Strengthen resources for Erhoeht-X business, such as manufacturing DX support (NAVINECT, etc.) and digital BPO DX
	Strengthening of forest protection	Expansion of opportunities for the use of pulp from forest thinnings and FSC-certified paper	Short term	Small	Promote use of Cartocan, FSC-certified related products (paper products, etc.) SX
	Strengthening of regulations for fossil fuel-derived plastic	Expansion of needs for recycling of plastic from packaging and materials	Medium to long term	Large	Establish new recycling schemes; develop and bolster sales of recyclable products, such as mono-material packaging SX
	Increase in raw materials prices	Increase in procurement costs	Medium term	Large	Research suppliers and develop new suppliers, research/consider alternatives, monitor systems/markets from long-term perspective
	Changes in customer preferences, increase in requests for measures to address climate change	Decrease in demand for carbon-emitting products, such as disposable plastic products	Medium term	Small to medium	Accelerate initiatives for business portfolio transformation, a priority measure in the Medium Term Plan
		Increase in demand for low-carbon products, reduced-plastic products	Short term	Large	Strengthen development/sales of ethical sales promotion products, sustainable packaging SX
Physical 4°C scenario	Increasing severity of acute, extreme weather conditions	Increase in risk of halt in operations at plants due to flooding / water damage	Medium term	Large	Continue to consider alternative production plans for the long term, periodically gather information about and take steps to address technology to prevent flooding
		External discharge of chemical substances due to flooding / water damage	Medium term	Small	Consider the possibility of leakage of chemical substances, formulate and implement countermeasures
		Expansion of next-generation communications market due to growth in remote monitoring needs	Medium to long term	Medium	Create communications-related products, such as products that use ZETA, and metaverse-related products DX
	Changes in rainfall and weather patterns	Water usage restrictions	Long term	Small	Consider alternative production plans to address water use restrictions; from a long-term viewpoint, assess water usage and stress by region
	Increase in temperature	Increase in needs related to food loss / hygiene	Medium to long term	Small to medium	Strengthen sales of functional barrier packaging, strengthen development of food loss countermeasure solutions SX

Risk　Opportunity

DX SX Products and services related to Digital & Sustainable Transformation (DX and SX), the key concept of the Medium Term Plan

2) Organization's consideration of impact on business and strategy

To contribute further to the net zero society targeted by the Toppan Group Environmental Vision 2050, we are advancing business portfolio transformation centered on DX and SX as part of the Medium Term Plan. We are in the process of executing a plan to invest approximately 60 billion yen in growth areas related to DX and SX, including R&D investment, between fiscal 2020 and 2022.

Thematic Area 4: Metrics and Targets

a) Metrics Used by the Organization to Assess Climate-related Risks and Opportunities in Line with Its Strategy and Risk Management Process

For climate-related risks, we have established the following as indicators: Scope 1, 2, and 3 greenhouse gas (GHG) emissions; renewable energy ratio; final landfill waste disposal; waste plastic material recycling rate; and optimal water use.

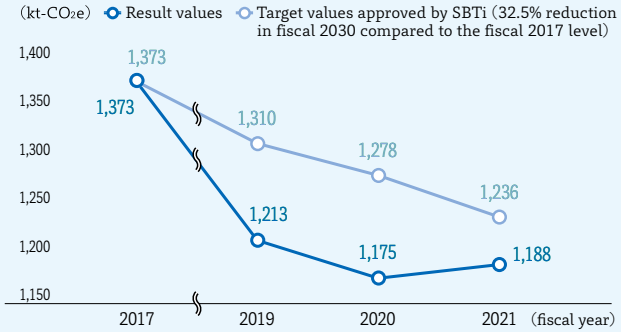
For climate-related opportunities, we have established the following indicators for business contribution to addressing social issues, including climate change: percentage of operating profit contributed by DX, SX, and frontier businesses; percentage of barrier-technology-based packaging switched to mono-material; number of proofs of concept for establishing recycling schemes for packaging and sales promotion materials; number of services contributing to GHG reductions; percentage of sales of sustainable packaging; and SX priority theme sales.

b) Scope 1, 2, and 3 Greenhouse Gas Emissions

In fiscal 2021, for the Toppan Group as a whole, Scope 1 and 2 emissions were 1,188 kt-CO_2e, and Scope 3 emissions were 5,833 kt-CO_2e. In comparison with targeted emissions for the fiscal year, the target for Scope 1 and 2 emissions was achieved, but the target for Scope 3 emissions was not achieved. Scope 1, 2, and 3 emissions are calculated based on the GHG Protocol methodology, and have been assured by an independent assurance provider.

See Mitigation of Global Warming on page 104 ›

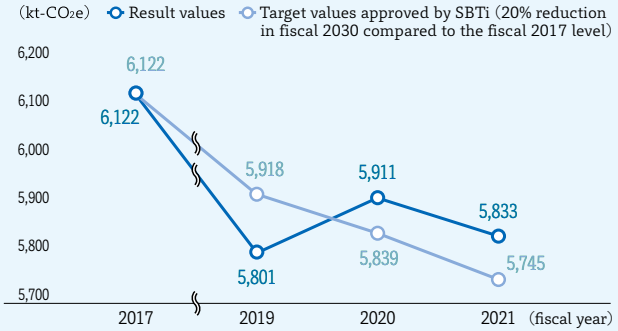
Scope 1 and 2 Greenhouse Gas Emissions ☑



*For Scope 1 and 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.

Scope 3 Greenhouse Gas Emissions ☑



*Methods for calculating the Scope 3 GHG emissions are presented on page 106.

c) Organization's Targets for Management of Climate-related Risks and Opportunities and Progress against Targets

The Toppan Group's targets for management of climate-related risks and opportunities are set out in the Toppan Group Medium-and-Long-Term Environmental Targets for Fiscal 2030, which target carbon neutrality cited in the Toppan Group Environmental Vision 2050; the Medium Term Plan; and TOPPAN Business Action for SDGs, which defines the areas of focus for Toppan to contribute to the SDGs.

For Scope 1 and 2 greenhouse gas (GHG) emissions, in fiscal 2021 a 13.5% reduction compared to the fiscal 2017 level was achieved. We will continue monitoring and take consistent measures to work towards target achievement. For Scope 1 GHG emissions, such measures include systematically replacing utility facilities used for long periods with high-efficiency alternatives, installing systems to abate high-global-warming-potential (GWP) gases emitted from semiconductor production processes, and replacing those high-GWP gases with lower-GWP alternatives. Measures for Scope 2 GHG emissions include making sure that operation of equipment used continuously is suspended during long vacation periods.

See environment-related results on page 16 ›

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

Toppan Group Environmental Vision 2050

As a member of international society, the Toppan Group aims to enable "fulfilling, sustainable living" by contributing to decarbonization, resource circulation, and the optimal use of water through forward-looking activities with consideration for preservation of the global environment.

① Contributing to Decarbonization
Aiming for virtually zero Scope 1 and 2 greenhouse gas emissions.

② Contributing to Resource Circulation
Aiming for zero waste emissions.

③ Optimal Water Use
Reducing water consumption and contributing to improved water quality by preventing pollution.

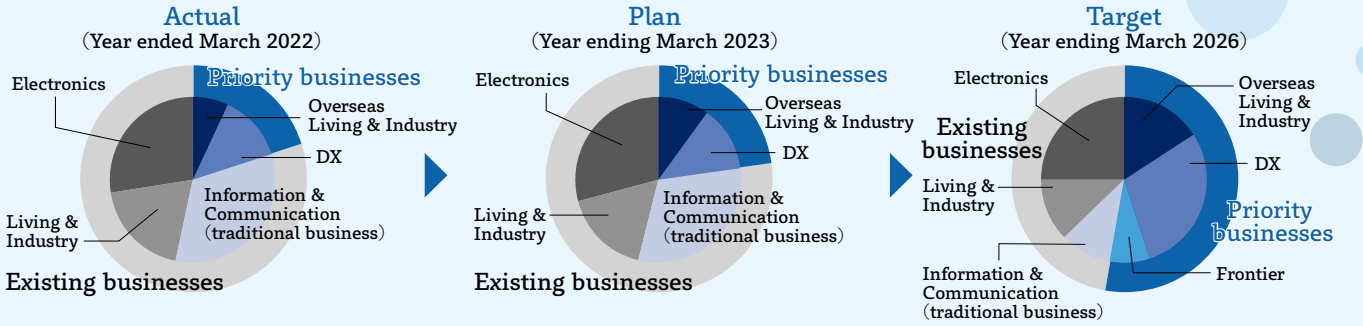
Toppan Group Medium-and-Long-Term Environmental Targets for Fiscal 2030

① Contributing to Decarbonization
Reduce Scope 1 and 2 greenhouse gas emissions by 32.5% (446 kt-CO_2e) compared to the fiscal 2017 level (1,373 kt-CO_2e).
(Renewable energy ratio of 6.5%)
Reduce Scope 3 greenhouse gas emissions by 20% (1,224 kt-CO_2e) compared to the fiscal 2017 level (6,122 kt-CO_2e).

② Contributing to Resource Circulation
Reduce final landfill waste disposal by 60% (4,444 t) compared to the fiscal 2017 level (7,407 t).
Increase waste plastic material recycling rate by 12% (to 65%) compared to the fiscal 2017 level (53%).

③ Optimal Water Use
Reduce water consumption, improve water efficiency, and avoid water pollution risks.
(Quantitative targets will be set going forward.)

Breakdown of Operating Profit in the Medium Term Plan



TOPPAN Business Action for SDGs (Environment: Sustainable Global Environment)

Creating a circular economy*1

Percentage of barrier-technology-based packaging switched to mono-material

Fiscal 2025 25% (overseas 40%) ▶ Fiscal 2030 30% (overseas 50%)

Number of proofs of concept for establishing recycling schemes for packaging and sales promotion materials*2

Fiscal 2025 30 ▶ Fiscal 2030 35

Decarbonizing*1

Number of services contributing to greenhouse gas reduction*2

Fiscal 2025 20 ▶ Fiscal 2030 30

Expanding eco-friendly products and solutions*1

Percentage of sales of sustainable packaging

Fiscal 2025 50% ▶ Fiscal 2030 100%

SX priority theme sales

Fiscal 2025 200 billion yen ▶ Fiscal 2030 300 billion yen

*1 Targets revised in May 2022.
*2 Target figures are cumulative figures over the years leading up to the target year. (Other targets are for single fiscal years.)