

The background of the cover is a photograph of a lush green campus. In the foreground, several large, vibrant green leaves with serrated edges are in sharp focus. In the background, a large, multi-story building with a light-colored facade and a prominent arched window is visible, though it is out of focus. The overall scene is bright and sunny, suggesting a clean, green environment.

Environmental
Report

2023

| Top Message



Our business activities are based on the Kurabo Group's management philosophy, "We, the Kurabo Group, contribute to the creation of a better future society through the creation of new value." and since our founding in 1888, we have been working to address environmental issues and fulfill our social responsibilities as a company. That goal is also linked to the SDGs (Sustainable Development Goals), which have been emphasized by the international community in recent years.

We provide products, services, and technologies that contribute to the conservation of the global environment with high added value to realize a sustainable society. In addition, by striving to solve social issues through innovation and the creation of new businesses, we will embody our management philosophy and contribute to the achievement of our goals after clarifying our priorities for the SDGs.

A particularly important issue is the response to climate change. As one of these measures, the Kurabo Group will revise its long-term target for reducing CO₂ emissions in fiscal 2022, aiming to achieve carbon neutrality in 2050.

Especially for the period up to 2030, we will formulate a roadmap to achieve the government target of 46% reduction from FY2013, and the entire Kurabo Industries Group will work on it.

We believe that promoting this initiative will further enhance the corporate value, improve production efficiency, strengthen the foundation of the manufacturing industry, and eventually improve profitability.

In light of the above, we have disclosed information in our Annual Securities Report based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Kurabo Industries Ltd.
President Haruya Fujita

| Editorial Policy

This report summarizes environmental conservation activities as part of our CSR activities. It describes environmental conservation activities for Kurabo Industries and group companies in Japan and overseas. In addition, we refer to the Ministry of the Environment's "Environmental Reporting Guidelines 2018 Edition" when creating it. For more detailed information about our products, businesses, etc., please visit our website. The calculation of CO₂ emissions is for Scope1 and Scope2.

[Report period] April 1, 2022 to March 31, 2023 (For overseas affiliated companies, January 1 to December 31, 2021)

[Report scope] In addition to Kurabo Industries and its consolidated subsidiaries, Thai Textile Development and Finishing Co., Ltd and Foshan Kurashiki Textile Manufacturing Co., Ltd. are included.

(The section "Reduction of environmental load" is Kurabo Industries and its domestic consolidated subsidiaries)

("Chemical substance management" is for Kurabo Industries only)

| Changes in main performance evaluation indicators

Changes in the Kurabo Group's main performance evaluation indicators are shown in the table below.

Indicators	Unit	FY2018	FY2019	FY2020	FY2021	FY2022
Consolidated sales	billion yen	1 5 7	1 4 3	1 2 2	1 3 2	1 5 4
CO ₂ emissions	1,000 t – CO ₂	2 1 9	1 8 4	1 6 5	1 8 0	1 7 0
Recycling rate of waste	%	9 3 . 6	9 2 . 7	9 4 . 2	9 4 . 7	9 5 . 2

| Corporate Governance

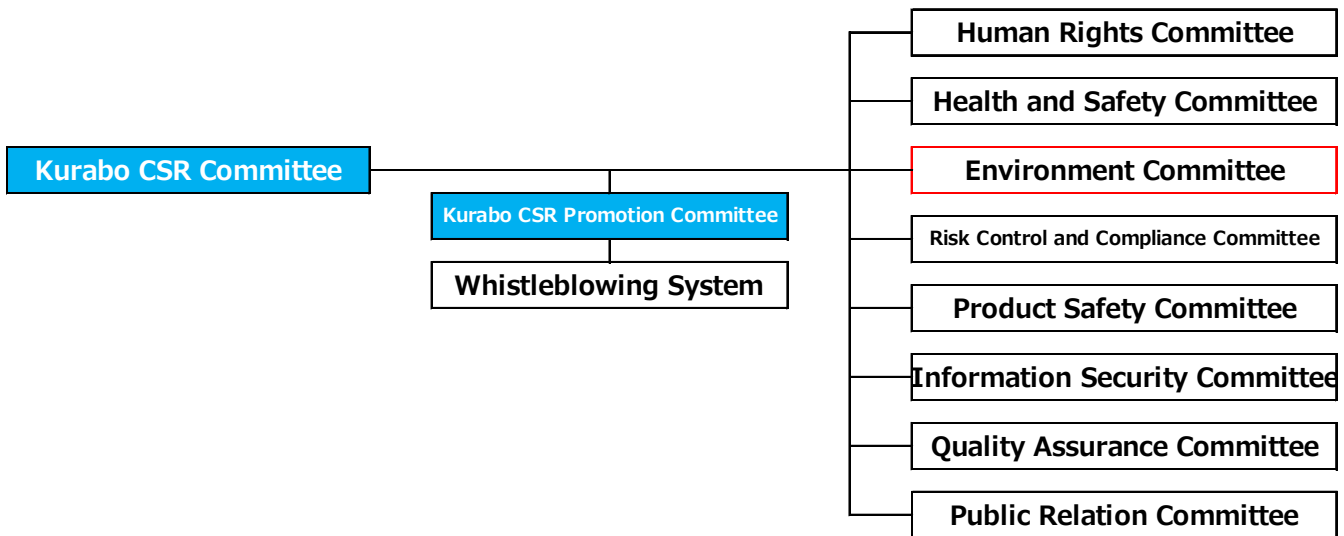
As part of building a company that is trusted by stakeholders such as shareholders, customers, business partners, employees, and local communities, we will promote management based on the "Kurabo Industries Corporate Governance Guidelines" to carry out fair and transparent business activities.

| Strengthening and Promotion of CSR Activities

We have established a corporate governance system in order to fulfill our social responsibilities as a company and to carry out fair and highly transparent management. As a form of governance, we have an audit and supervisory committee, and has adopted an executive officer system to separate management decision-making and business execution. The Kurabo Industries Corporate Governance Guidelines have been established based on a resolution of the Board of Directors to establish the basic concept and framework of corporate governance.

In accordance with the "Kurabo Group Code of Ethics," each specialty Committee under the supervision of the Kurabo CSR Committee is engaged in activities to meet the expectations of all stakeholders, such as corporate ethics, compliance with laws and regulations, consideration for the environment and respect for human rights. We will further strengthen and promote its activities in response to the growing social importance of sustainability, such as the revision of the Corporate Governance Code. In environmental conservation, technical executive officers promote activities as the chair of the environmental Committee.

Kurabo Industries CSR activity promotion system diagram



| Basic Policy on Sustainability

The Kurabo Group believes that in order to contribute to the realization of a sustainable society, companies must aim for sustainable improvement of corporate value, and create high-value-added technologies, products and services. In addition to fostering and expanding highly profitable businesses, we will implement the following practices under the management philosophy of our group, "We, the Kurabo Group, will contribute to the creation of a better future society through the creation of new value."

- ① Contribution to solving social issues through business
- ② Promotion of business activities with an awareness of the conservation of the global environment
- ③ Respect for human rights and create a comfortable and rewarding work environment
- ④ Promotion of building a trusted company

| Strengthening Relationships with Stakeholders

We will try to build good relationships with shareholders, customers, business partners, employees, and local communities by implementing shareholder return measures centered on stable dividends, providing technologies, products, and services required by the market, and securing continuous employment.

In addition, we will further enhance the disclosure of non-financial information, strive for active dialogue with stakeholders, and focus on improving corporate awareness through IR briefings and public relations activities for institutional investors.

| History of Environmental Conservation

Kurabo has been aware of and addressing environmental problems from 1970s. The company has been responding to global issues through comprehensive environmental management activities including measures to prevent pollution and efforts to save energy following the energy crises. Keenly aware of its corporate social responsibility (CSR) to be green, Kurabo is proactively pursuing environmental conservation.

As the pillars of our environmental management activities, we have conducted activities such as internal control based on environmental audits, creation of an environmental management system based on ISO 14001 standards, and efforts toward zero emissions. We have also been reporting on these environmental activities and their results. The scope of activity has also been extended outside the company through efforts including the development and promotion of environmentally friendly products

Organization

1973	Environmental Management Committee established (Prevention of environmental pollution)
1979	Energy Conservation Committee established (Pursuit of energy conservation)
1994	Environment Committee established (Comprehensive environmental management activities)
2006	Kurabo CSR Committee established (Overall control of CSR activities)

Environmental Management Activities

1996	Environmental Management Regulations established
1997	Environmental audit started (Started in 2002 for affiliates)
1998	Environment Charter established
1999	Tokushima Plant acquired ISO 14001 certification (First in the Kurabo group, thereafter other site and group company)
2000	Environmental Report posted on the Internet
2002	Environmental accounting introduced
2005	Joined Team Minus 6% project (End of activity) Began to participate in Eco Pro exhibition (End of activity)
2007	Pursuit of zero emissions
2008	Environmental Household Account Book introduced (End of activity)
2010	Participated in Challenge 25 campaign (End of activity)
2015	Anjo Mill and Tokushima Plant made ISO 14001 self-declarations
2020	Anjo Mill and Tokushima Plant require ISO 14001 Certification
2022	Formulation of carbon neutral roadmap
2023	Disclosure of information based on TCFD in securities reports

| Environmental Charter

In 1998, the Kurabo Environment Charter was established to define Kurabo's basic policies on environmental issues and behavioral guidelines for employees. Subsequently, as activities for environmental conservation spread throughout the group, the Kurabo Environment Charter evolved into the Kurabo Group Environment Charter in 2006, which the entire group abides by. In addition, taking the opportunity of formulating a carbon-neutral roadmap in 2022, we clarified that climate change countermeasures will be addressed as an important issue.

Kurabo Group Environment Charter

1. Basic Policies

We, Kurabo Industries Group, strive to reduce the environmental load systematically and continuously to always contribute to the conservation of the global environment. Especially we position climate change counter measures as one of the important issues and will work to reduce CO₂ emissions at all stages such as development, production, and sales.

To this end, we will aggressively improve the level of our environmental management in all fields of business activities and introduce products and services that are harmonious with the environment.

2. Behavioral Guidelines

(1) Compliance with applicable laws and regulations

Setting and practice of voluntary management standards

(2) Promotion of environmental sustainability

We will implement the following efforts with the aim of forming a carbon-free society and a resource-recycling society.

① Reduction of CO₂ emissions based on the carbon neutral roadmap

- Promotion of efficient use of energy

- Introduction of renewable energy and promotion of energy transformation

② Effective utilization of resources and promotion of recycling

③ Development of technologies, products and services that contribute to reducing the environmental burden

Long-term Environmental Goals

| Long-term Environmental Goals

The Kurabo Group's long-term environmental targets are to reduce CO₂ emissions by 46% (compared to 2013) in 2030, which is the government target, in order to achieve carbon neutrality in 2050. We will strengthen the system to promote the reduction of CO₂ emissions and take the following concrete measures.

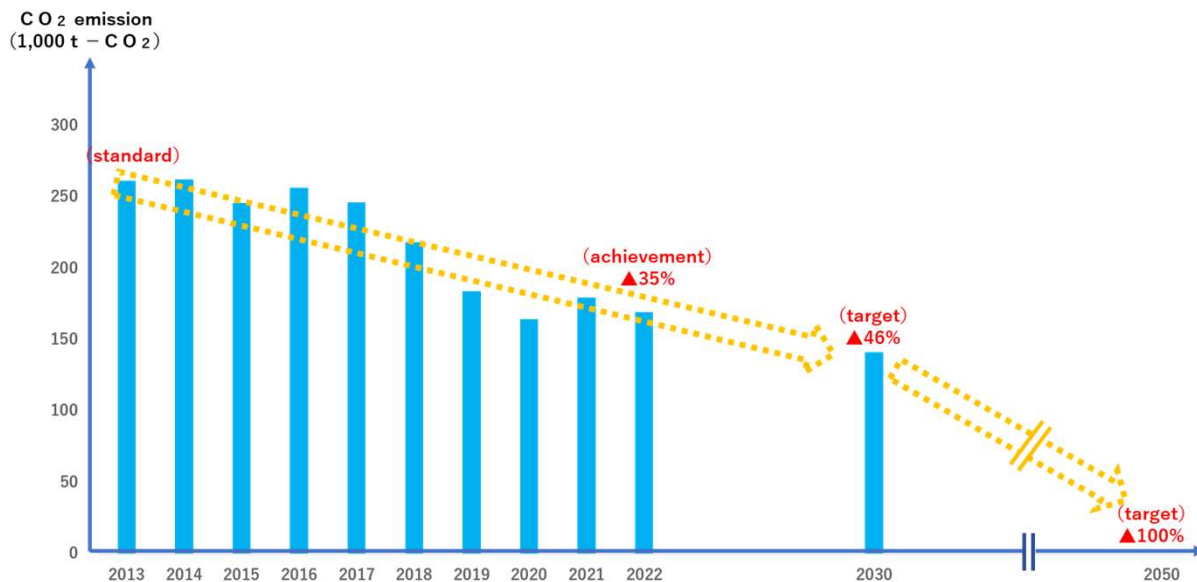
- Energy-saving measures by introducing energy-saving equipment and updating equipment
- Implementation of CO₂ emission reduction measures at production bases with a high fossil fuel usage ratio
- Active utilization of Tokushima biomass power plant and renewable energy

The environmental target of the new medium-term management plan "Progress'24", which started in April 2022, is to reduce emissions by 40% compared to FY2013 by FY2024. Regarding our response to the climate change issue, as we proceed with the new medium-term management plan "Progress 24", we will decide on specific responses, including our approach and disclosure regarding TCFD, etc., and implement them systematically.

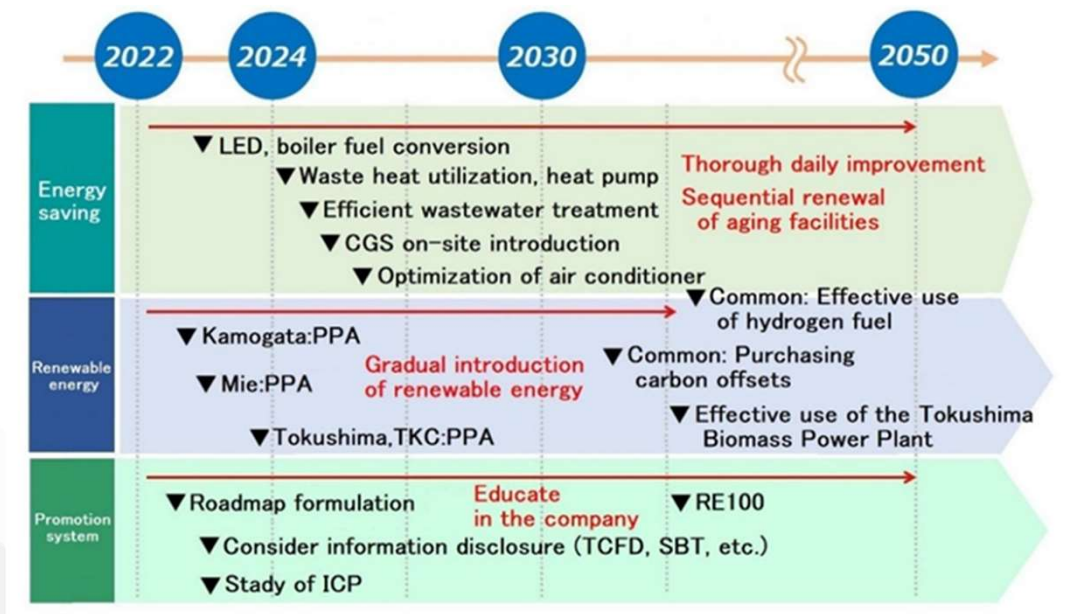
| Carbon Neutral Roadmap

In 2022, we formulated a carbon-neutral roadmap to achieve our long-term environmental goals. In the future, we will promote efforts to reduce CO₂ emissions in line with this roadmap.

Achieving carbon neutrality in 2050 is a goal not only for Kurabo Industries but also for the entire Group, including affiliated companies in Japan and overseas.



As specific measures, we will promote energy conservation measures and the introduction and utilization of renewable energy throughout the Group companies. If the reduction target is not reached, we will consider offsetting the emissions by purchasing carbon offset credits. In addition, we will strengthen the promotion system for the entire group in carrying out the roadmap.



| Performance Evaluation and Setting of Environmental Targets

The Kurabo Industries Group has set medium-term targets (numerical targets for three years) to systematically promote environmental conservation and is working to respond climate change and make effective use of resources. CO₂ emissions in FY2022 was reduced by 35.2% compared to FY2013, falling short of the target of 38% reduction. The medium-term target was set based on the results for fiscal 2020, but the main reason is that the production volume, which had decreased due to the impact of the new coronavirus, is recovering, and the amount of energy consumption has increased. However, as a result of promoting energy-saving measures such as switching to gas fuel and switching to LED lighting, CO₂ emissions have decreased from FY2021 result. Regarding the promotion of zero emissions, although the recycling rate improved from 94.7% in FY2021 to 95.2%, we did not reach the target of 96%. However, the number of business sites that have achieved zero emissions (recycling rate of 98% or higher) was 27 for the entire Group in fiscal 2021, but has increased to 32 in fiscal 2022, indicating progress in activities.









Target item		Result of FY2021	Target of FY2022	Result of FY2022
Reduction of CO ₂ emissions	Absolute reduction (compared to FY2013)	31.3% reduction	38% reduction	35.2% reduction
Efforts toward zero emissions	Improvement in recycling rate of waste	94.7%	96%	95.2%

The Kurabo Group has set a long-term environmental goal of reducing CO₂ emissions by 46% from FY2013 by 2030 and aiming for carbon neutrality by 2050. In response to this, the environmental target of the new medium-term management plan "Progress '24" (2022-2024) is to reduce CO₂ emissions by 40% in FY2024 compared to FY2013. In 2023, the second year of the new medium-term management plan "Progress '24," we aim to reduce the amount by 39% compared to 2013.

Target item	Target of FY2022	
Reduction of CO ₂ emissions	Absolute reduction (compared to FY2013)	39% reduction
Efforts toward zero emissions	Improvements in recycling rate of waste	Recycling rate 96%

| Relationship with SDGs

The Kurabo Industries Group believes that environmental conservation efforts are one of the important measures to achieve the SDGs (Sustainable Development Goals). We have been actively working on this, but with the formulation of the carbon-neutral roadmap and information disclosure based on TCFD Recommendations, we would like to further promote climate change countermeasures including reduction of CO₂ emissions and contribute to the formation of a carbon-free society.

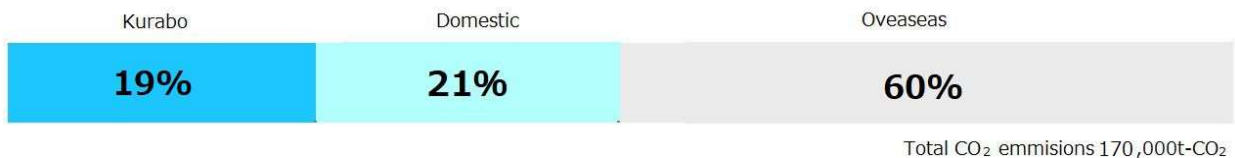
Related SDGs	Related environmental conservation activities
       	<ul style="list-style-type: none"> Climate change measures (mainly reduction of CO₂ emissions) <ul style="list-style-type: none"> Promotion of energy saving activities Introduction of renewable energy Promotion of zero emissions (recycling of waste) Reduction of environmental load <ul style="list-style-type: none"> Air, water and soil pollution prevention

| Climate Change Measures

Current Status of CO₂ Emissions

The table below shows the CO₂ emissions of the Kurabo Industries Group. Since the emission ratio of overseas affiliated companies is high, we will promote efforts to reduce CO₂ emissions throughout the Group, including overseas. In addition, the breakdown of CO₂ emissions includes the use of fossil fuels as well as electricity. We will promote the reduction of CO₂ emissions by promoting energy conservation and fuel conversion.

CO₂ emission ratio of Kurabo Industries only, domestic affiliated companies and overseas affiliated (FY2022)

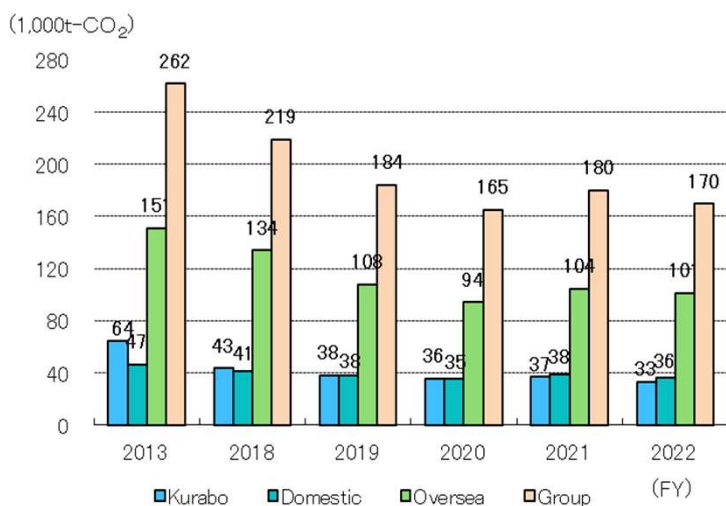


Reduction of CO₂ Emissions

In addition to promoting energy-saving activities, we are working to reduce CO₂ emissions by using renewable energy and converting fuel (heavy oil → gas), and we are also actively implementing greening activities on the premises of factories and other facilities. In addition, with the complete liberalization of electricity retailing, when selecting an electric power company, we also evaluate the environmental aspect (CO₂ emission factor, etc.).

In fiscal 2022, energy-saving measures and the introduction of renewable energy contributed to 5.7% reduction in Group-wide CO₂ emissions compared to the previous fiscal year, and 35.2% reduction compared to fiscal 2013. Over the five years since 2018, we have reduced emissions by an average of 6.1% annually.

Changes in CO₂ Emissions



FY	CO ₂ emissions	Reduction rate against FY 2013	Reduction rate against the previous year
2013	262	-	-
2018	219	-16.4%	-11.3%
2019	184	-29.7%	-15.9%
2020	165	-37.0%	-10.4%
2021	180	-31.3%	9.2%
2022	170	-35.2%	-5.7%

| Environmental Audit

With an aim to ensure proper environmental management at business sites in Japan and overseas of the Kurabo Group, the head office staff conducts environmental audits by visiting each site on a regular basis. To improve the environmental management level, the audit not only checks observance of environment-related laws but also introduces recommended management methods.

As a result of environmental audits carried out on a continual basis, compliance with applicable laws and regulations has greatly improved. Since fiscal 2014, environmental audits have been conducted by shifting their focus from reviewing legal compliance to checking the operation of environmental management.

In fiscal 2022, we conducted audits of twelve domestic group and two overseas establishments. As a result of the audit, we appropriately instructed the points to be improved and all of them were promptly improved. The entire group will continue to work to maintain and improve a good environmental management system.

In addition, as a new role of environmental audit, we will check the CO₂ emission status and check reduction measures, and the entire Kurabo Industries Group will strive to achieve carbon neutrality. In the process, we would like to promote equipment management and operational efficiency, which will lead to improved productivity, reduced raw material costs, and eventually improved profitability.

Sites where Environmental Audits have been Conducted in FY2022

Company	Site / Location	Business description and main products
Kurabo Industries Ltd.	Anjo Mill	spinning and waving
	Tokushima Plant	Dyeing and finishing
	Gunma Plant	Inorganic building materials manufacturing
	Tokushima biomass power plant	Power plant
Kurashiki Textile Manufacturing Co., Ltd.	Kurashiki Plant	Non-woven fabric manufacturing industry
Tomei Kasei Co., Ltd.	Nissin Plant	Urethane processing industry
	Saitama Plant	Urethane processing industry
	Gunma Plant	Urethane processing industry
Japan Jiffy Foods, Inc.	Uji Plant	Food manufacturing
	Mito Plant	Food manufacturing
Kurashiki Ivy Square, Ltd.	Kurashiki	Hotel
Kurabo Driving School Co., Ltd.	Kurashiki	Driving school
Thai Kurabo Co.,Ltd.	Thailand	spinning and waving
Thai Textile Development And Finishing Co., Ltd	Thailand	Dyeing and finishing

Reduction of Environmental Load

| Reduction of Environmental Load

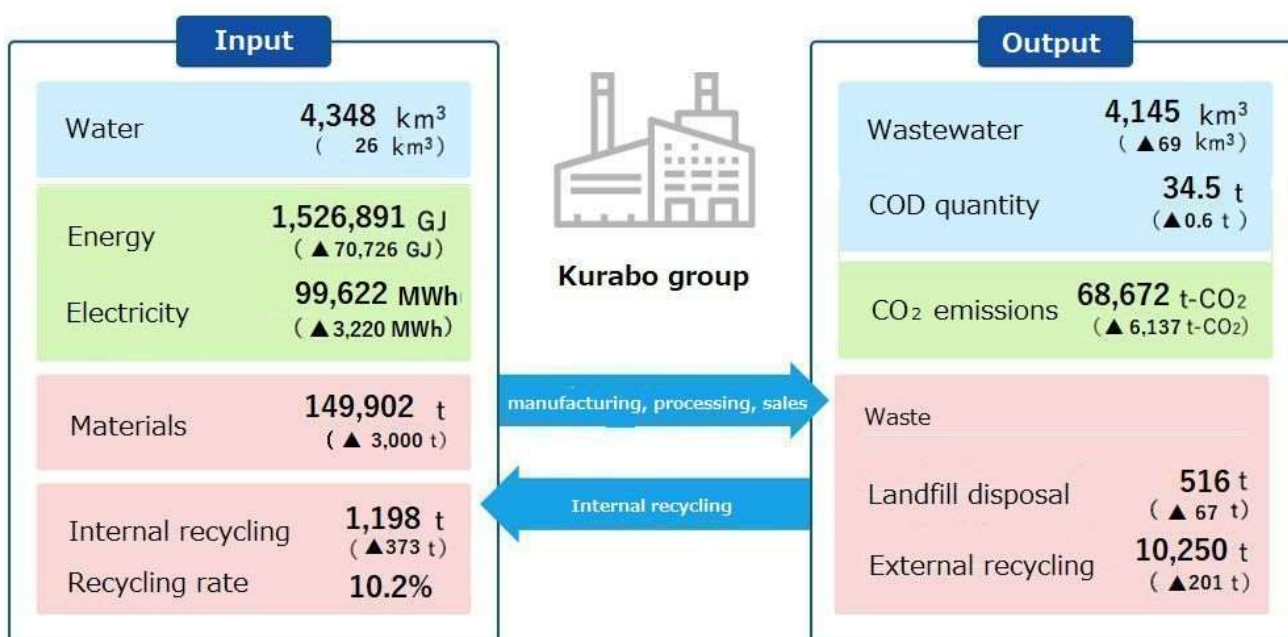
The Kurabo Group has always striven to supply high-quality products and services to the market in efforts to contribute to a better future. We also work to accurately understand the impact business activities have on the environment so that we can reduce it.

Since climate change countermeasures are a global issue, we will work with overseas affiliated companies as well, but other environmental loads (air pollution, water pollution, etc.) will be dealt with in consideration of regional characteristics.

As for the status of environmental load, some data has not been aggregated at overseas establishments, we aggregated the load data of Kurabo Industries and domestic affiliated companies.

Overview

The Kurabo Group's material flow in fiscal 2022 is shown below.

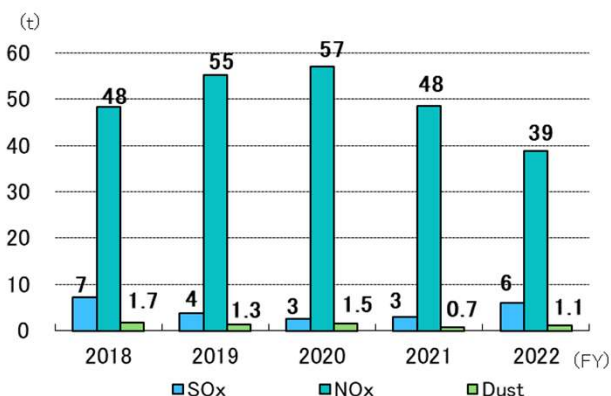


increased or decreased quantities against the previous year are shown in parentheses

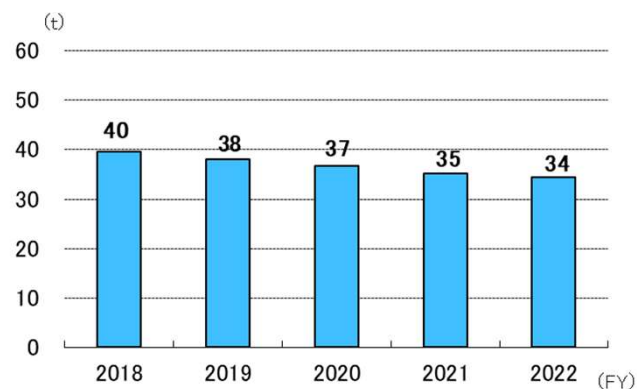
Prevention of Air Pollution and Water Pollution

We strive to reduce our environmental burden in order to prevent air pollution and water pollution. Regarding the discharge of air and water pollutants, we set and manage voluntary control standards that are stricter than the law, and the annual discharge amount is also stable.

Amount of Air Pollutants



COD Emissions (Dye Processing Plants)



*1: SOx, NOx: Generic terms for sulfur oxides and nitrogen oxides. Typical air pollutants generated by combustion of fossil fuel.

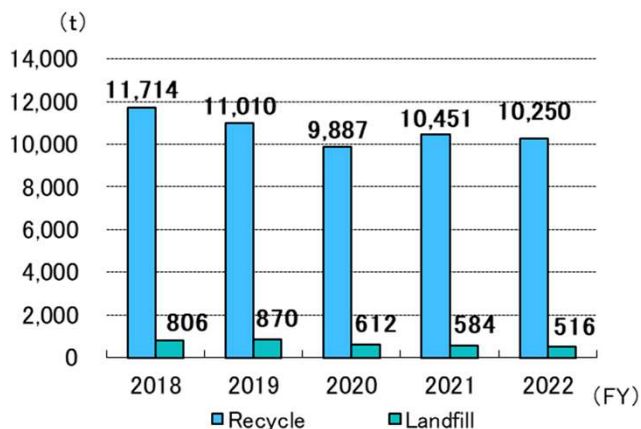
*2: COD: Chemical oxygen demand. Amount of oxygen required to purify waste water. An indicator of water contamination.

Reduction of Environmental Load

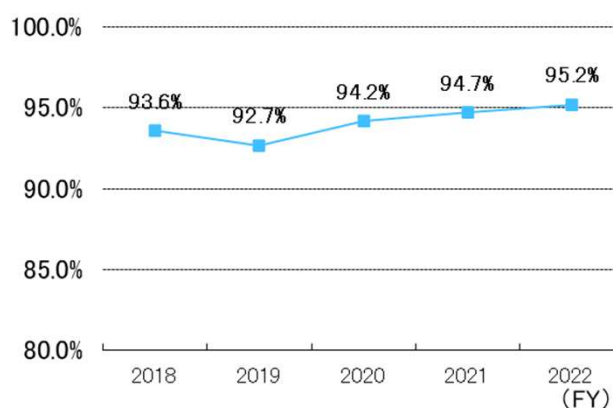
Waste Reduction and Pursuit of Zero Emissions

We have been setting zero emissions as an environmental target and working to recycle waste in efforts to contribute to the realization of a recycling-oriented society. We have achieved significant results thanks to long-term efforts, and the recycling rate for the entire group in fiscal 2022 was 95.2%.

Amount of Waste



Recycling Rate



Sites Achieving Zero Emissions

Company	Site / Location
Kurabo Industries Ltd.	Anjo Mill, Tokushima Plant, Neyagawa Plant, Susono Plant, Gunma Plant, Kamogata Plant, Mie Plant, Kumamoto Office, engineering department, R&D Center, Osaka Head Office and Tokyo Branch
Taishoboseki Industries, Ltd.	Hannan
Kurabo International Co., Ltd.	Murakami Plant, Takeda Plant
Kurashiki Textile Manufacturing Co., Ltd.	Kurashiki Plant, Hayashima Plant, Shizuoka Plant
Tomei Kasei Co., Ltd.	Nisshin Plant, Gunma Plant, Mie Plant, Toyota Plant, Handa Plant, Saitama Plant
Kurabo Chemical Works Co., Ltd	Kurose Plant, Kamogata Plant, Neyagawa Plant
Sheedom Co., Ltd	Kamigori Plant
Kurabo Plant System Co., Ltd.	Neyagawa
Kurabo Techno System Ltd.	Neyagawa
Yamabun Electronics Co., Ltd.	Higashiosaka
Japan Jiffy Foods, Inc.	Uji Plant
Kurashiki Ivy Square, Ltd.	Kurashiki

*Zero emissions: The Kurabo Group defines zero emissions as having 98% or more of the waste generated by our business sites recycled by other companies. In FY2022, 32 of our 41 business sites achieved zero emissions.

Reduction of Environmental Load

Resource Saving

To reduce raw material waste generated from plants of the Kurabo Industries, we practice resource conservation and develop applications where the waste can be used.

Specific Resource Saving Implementation Status (Kurabo only)

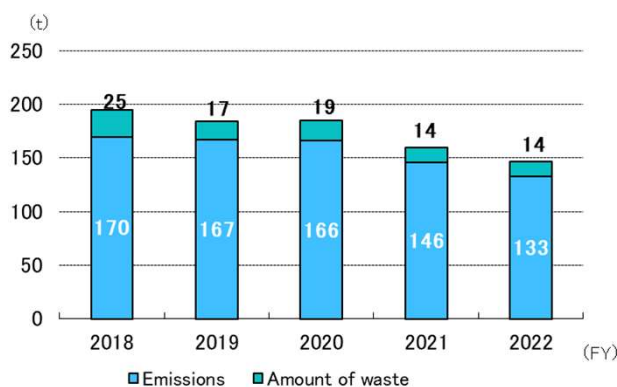
Site	Item	Implementation content
Anjo Mill	fiber waste	Waste cotton or lint generated from the spinning and weaving process are recycled as textile materials. And the Textile Business Division collects off-cuts from the sewing process of other companies and reuses them as raw material, such as in textile products, at the Anjo Mill.
Tokushima Plant	caustic soda ammonia	Most of the caustic soda is recovered, concentrated, and recycled from the discharged washing water. Ammonia used for ammonia mercerization is also recovered and recycled in the same way as caustic soda.
Neyagawa and Gunma Plant	molding waste	All of the molding waste generated in the production process of extrusion-molded products for housing materials is reused for molding materials.
Susono and Kamogata Plant	Urethane scraps	The off-cuts of flexible urethane foam are crushed, molded, and reused as tip foam.
Mie Plant	film scraps	The off-cuts from plastic film manufacture are recycled and reused as material when and where possible.

Management of Chemical Substances

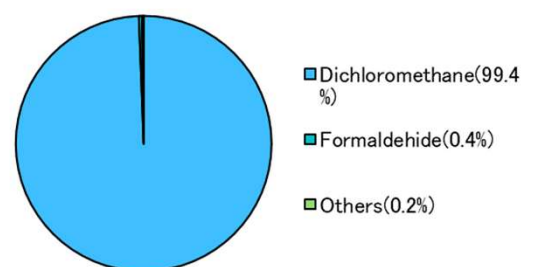
| Management of Chemical Substances

Chemical substances used at each site are accurately recorded and put under appropriate control in accordance with their properties and relevant laws. In particular, at sites that handle designated chemical substances under the PRTR Law*, we have established management standards and work standards, and implement operational management that takes into account the health of our employees. Since chemical substances are used as raw materials, emissions tend to increase along with the expansion of business. However, we are working to reduce environmental burden by reviewing formulations and by collecting and reusing chemical substances

Trends in Substances Subject to the PRTR Law



Emission Rate of PRTR-designated Substances



* PRTR Law: Law requiring companies to accurately record the amount of specified chemicals discharged into the environment, and report these amounts to the government. For Kurabo, dichloromethane, which is used as a foaming agent of urethane, accounts for the largest portion of total PRTR substances discharged. The annual usage of PRTR substances is 3,785 tons, and the maximum storage amount is 269 tons.

| Initiatives for biodiversity

Kurabo strives to minimize the impact of its business activities on biodiversity with the aim of preserving biodiversity. As part of these efforts, each business site is engaged in local cleanup activities, especially in the ocean and river coasts, which are rich in biological resources.

The Kurabo Mie Plant faces Ise Bay and the Shitomo River, and located in area with abundant water resources. In commemoration of World Oceans Day on June 8, we conduct cleanup activities at least once a year to collect litter that causes marine pollution, contributing to the conservation of biodiversity in the region.



| Social contribution activities

Since 2014, the Kurabo Group has engaged in cleanup activities around its business sites under the name "10-100 (Ten Hundred) Project" as its own social contribution activities, in order to beautify the local environment. In this project, 100 towel handkerchiefs using our antibacterial and antiviral functional fiber processing technology "CLEANSE" are made for every 10 participants in the cleanup activity and donated to kindergartens and facilities for the elderly as Christmas gifts in December.



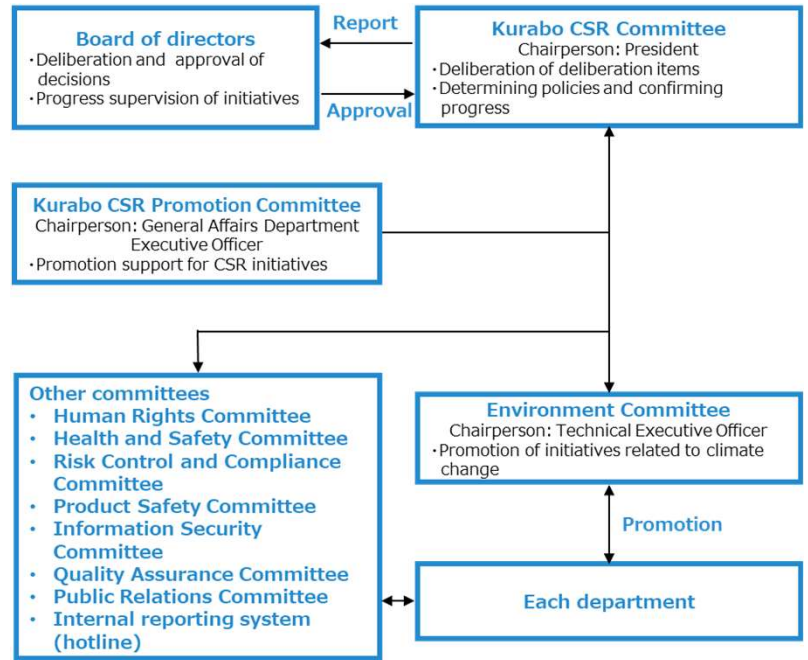
In recent years, environmental issues, including climate change, have become increasingly serious around the world. The impact of global warming has caused adverse effects such as abnormal weather on a global basis, and responding to climate change has become an important issue for companies. Under these circumstances, the Kurabo Group recognizes that climate change-related risks and opportunities will have a significant impact on its business strategy and has positioned the "realization of carbon neutrality" as an important issue, aiming to realize a sustainable society. The Kurabo Group recently disclosed information regarding its efforts to address climate change based on the TCFD recommendations as part of its efforts to strengthen its promotion system for achieving carbon neutrality.

1. Governance

One of the Kurabo Group's basic policy on sustainability is to "promote business activities that are conscious of the preservation of the global environment."

We regard environmental issues, including climate change, as one of the important issues (materiality) for solving social issues and sustainable corporate development. Under the supervision of the Kurabo CSR Committee, which is chaired by the president, we are promoting initiatives centered on the Environmental Committee, which is chaired by an executive officer with a technical background. Regarding responses to climate change-related risks and opportunities, the CSR Committee approves the action policies of the Environment Committee, receives activity results reports, and reports the activity policies and results to the Board of Directors once a year.

The Board of Directors deliberates and supervises the goals and plans of these initiatives, as well as the progress of each measure. The Board of Directors also decides on strategies related to sustainability, such as the Basic Policy on Sustainability and the Kurabo Group Environmental Charter.



<Major items to be discussed and approved by the Board of Directors (FY2021-2022)>

- Development of a transition plan for reducing CO₂ emissions (Carbon Neutral Roadmap)
- Matters related to the basic policy on sustainability (Promotion of business activities that are conscious of the preservation of the global environment)
- Revision of the Kurabo Group Environmental Charter
- Preparation of environmental reports

2. Strategy

The Kurabo Group has established a CO₂ emissions reduction transition plan (Carbon Neutral Roadmap) in 2022 toward the government's goal of carbon neutrality in 2050, and the entire group is promoting activities to reduce CO₂ emissions. In addition, we have compiled a list of risks and opportunities in order to comprehensively understand the impact of climate change on our business in 2030 and to promote initiatives to address issues caused by climate change.

As part of the process of identifying risks and opportunities, we first interviewed each department about climate change-related risks and opportunities and created a comprehensive list. Furthermore, we organized and narrowed down from the perspective of the magnitude of the impact on business, and we identified important climate change-related risks and opportunities for the Group's business based on the evaluation results of scenario analysis. Going forward, we will proceed with a detailed examination of contents and strive to reduce risks that have a large impact and to operate our business by accurately seizing opportunities.

■ Overview of scenario analysis

Scenario analysis is based on "STEPS", "SDS", "NZE 2050" assumed in the International Energy Agency (IEA) "World Energy Outlook", and "SSP1 -1.9", "SSP5-8.5" in the Sixth Report of Intergovernmental Panel on Climate Change (IPCC). And we analyzed transition risks and opportunities in the "1.5°C scenario" and physical risks and opportunities in the "4°C scenario".

For analysis, the definitions of the degree of impact and the time axis are as follows.

[Degree of impact] Large: Significant long-term impact, or expected impact amount of 500 million yen or more

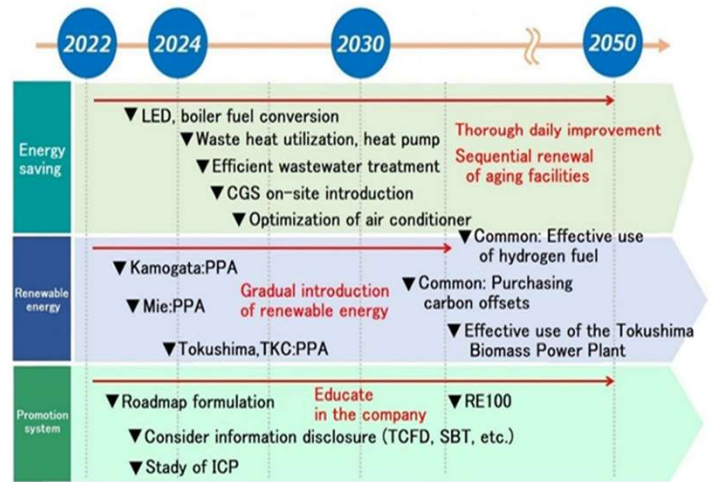
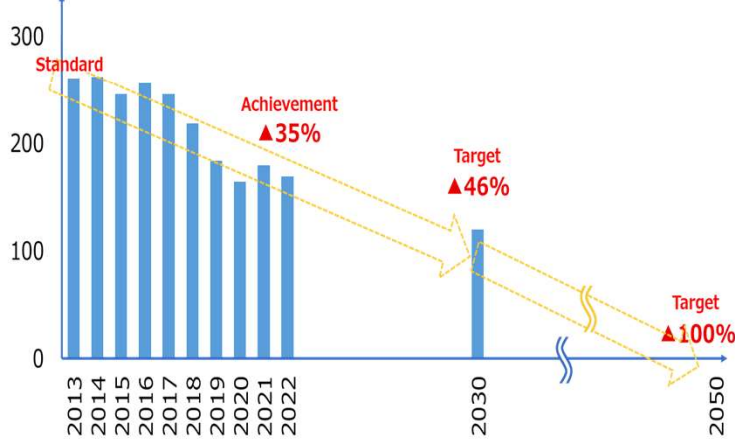
Medium: Temporarily significant impact, or expected impact amount of 100 million yen or more

[Time axis] Short-term: ~3 years, Medium-term: 3-10 years, Long-term: 10 years ~

Report based on TCFD recommendations

Transition Plan for CO₂ Emissions Reduction (Carbon Neutral Roadmap)

CO₂ emission reduction
(1,000t-CO₂)



List of risks

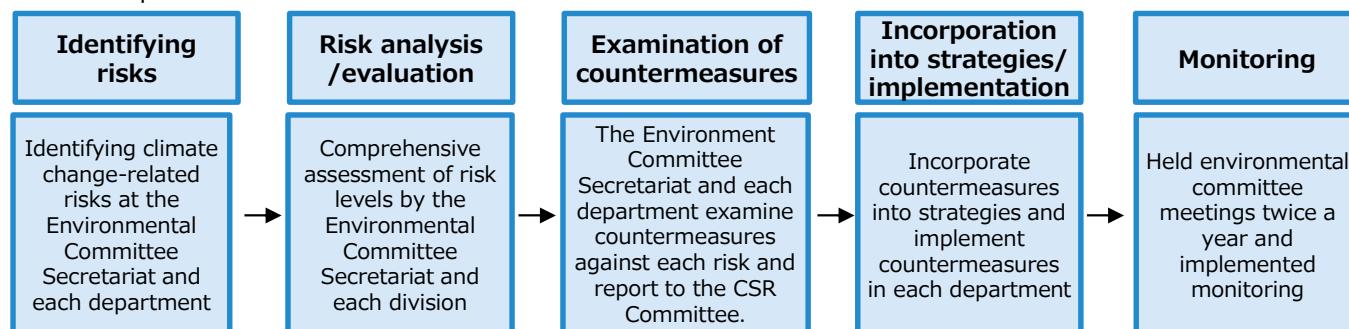
Pattern	Minor classification	Risk impact	Counter-measure	Impact	Time axis	
Transition risk	Policy and legislation	GHG emission pricing progress (carbon pricing)	Increase in energy costs due to the introduction of a carbon tax	<ul style="list-style-type: none"> Promotion of energy conservation measures such as boiler fuel conversion and heat pump Introduction of renewable energy such as solar power PPA 	Large	Medium Long
		Price pass-through occurs due to the introduction of carbon pricing into the supply chain	<ul style="list-style-type: none"> Encourage and cooperate with suppliers to develop low-carbon materials, etc. Diversify raw material procurement methods 	Large	Medium Long	
	Technology/market	Regulations on existing products and services	Rise in raw material prices due to stricter environmental regulations on products handled	<ul style="list-style-type: none"> Diversification of suppliers in consideration of environmental impact Efforts to reduce the amount of raw materials and components used 	Medium	Short Medium Long
		Changes in customer's action	Increase in costs due to promotion of energy conservation and introduction of high-efficiency equipment, etc.	<ul style="list-style-type: none"> Improve the efficiency of our own production processes Improve the efficiency of production processes throughout the value chain 	Large	Short Medium Long
	Reputation	Soaring costs for decarbonization	Increase in costs associated with introduction of renewable energy and purchase of clean energy	<ul style="list-style-type: none"> Introduction of renewable energy such as solar power PPA Effective use of existing large-scale power sources (mega solar, biomass) 	Medium	Medium Long
Physical risk	Acute risk	Increased anxiety among stakeholders	Impact on securing R&D personnel and hiring of new graduates	<ul style="list-style-type: none"> Promotion and sophistication of human resource management 	Medium	Short Medium Long
		Intensification of extreme weather events such as cyclones or floods	Equipment damage due to typhoons, floods, etc., decreased production due to suspension of activities, increased recovery costs	<ul style="list-style-type: none"> Strengthen business continuity plan (BCP) Confirm hazard maps and assess risks at company sites and major business partners 	Large	Short Medium Long
	Chronic risk	Suspension of production due to damage to suppliers by typhoons, floods, etc., and disruption of transportation routes	<ul style="list-style-type: none"> Diversification of production and procurement methods, such as diversification of suppliers and reconstruction of supply networks Deployment of procurement BCP at suppliers, implementation of BCP assessment 	Medium	Medium Long	
		Rise of average temperature	Increased air conditioning costs	<ul style="list-style-type: none"> Introduction of energy-saving equipment and enhancement of power saving in factories and offices Introduction of renewable energy such as solar power PPA 	Medium	Short Medium Long

List of opportunities

Pattern	Minor classification	Opportunity impact	Counter-measure	Impact	Time axis	
Opportunity	Resource efficiency	Use of recycling	Growing demand for materials compatible with the circular economy against the backdrop of the transition to a circular economy	<ul style="list-style-type: none"> Promote and expand recycling-oriented business by such as "L∞PLUS", recycling clothing cutting waste Expansion of recycled polyester such as "AIR FLAKE" and biodegradable fiber products Expansion of recycled wood powder resin products such as "KURATTICE ECO" 	Large	Short Medium Long
			Reduction of carbon tax burden by reducing GHG emissions through decarbonization measures	<ul style="list-style-type: none"> Promotion of energy conservation measures such as boiler fuel conversion and heat pump Introduction of renewable energy such as solar power PPA 	Large	Medium Long
	Energy source	Use of lower emission energy sources	Reduction of energy costs through energy-saving activities and procurement of low-cost, high-quality renewable energy and hydrogen	<ul style="list-style-type: none"> Promotion of energy conservation measures such as boiler fuel conversion and heat pump Introduction of renewable energy such as solar power PPA 	Medium	Short Medium Long
			Development and expansion of low-emission products and services	<ul style="list-style-type: none"> Promote decarbonization and strengthen product competitiveness by understanding the carbon footprint Expansion of eco-friendly high-performance material products such as "NaTech" Expansion of eco-friendly functional films such as "Clan Seal Series" 	Large	Short Medium Long
	Market	Access to new markets	Growing demand for parts due to the rapid spread of EVs	<ul style="list-style-type: none"> Acquisition of tenants by obtaining environmental certification for real estate rental buildings Respond to growing demand for semiconductors through high-performance resin processed products Expansion of demand for mainstay products and newly developed products in each segment, including the environmental mechatronics business 	Large	Short Medium Long
	Resilience (elasticity)	Continuity of business activities	Strengthen competitiveness backed by a strong ability to respond to disasters due to the geographical dispersion of production bases	<ul style="list-style-type: none"> Practice sustainable business activities by strengthening the business continuity plan (BCP) 	Large	Short Medium Long

3. Risk management

Climate change-related risks are appropriately managed under the leadership of the Environment Committee in accordance with the following assessment and management process. In addition, climate change-related risks are managed by the entire Kurabo Group as one of the risks that have a significant impact on the business of the Kurabo Group.



4. Metrics and goals

The Kurabo Group aims to achieve carbon neutrality in 2050 as a long-term goal for reducing CO₂ emissions. Especially for the period up to 2030, we have formulated a roadmap to achieve the government target of a 46% reduction compared to FY2013. The entire Kurabo Group will work to reduce our CO₂ emissions (Scope 1, Scope 2) on absolute quantity basis. We believe that advancing these initiatives will further enhance the existence value of the corporate group, improve production efficiency, strengthen our foundation as a manufacturing industry, and ultimately improve profitability. We are also preparing to calculate CO₂ supply chain emissions (Scope 3). After the calculations are complete, we will consider formulating CO₂ emissions reduction targets (Scope 3).

■ CO₂ emission reduction target

	FY2024	FY2030	FY2050
CO ₂ emissions reduction target (Scope1,2)	40% reduction (against FY2013)	46% reduction (against FY2013)	Carbon neutral

■ CO₂ emissions results

Category	Fiscal 2022 results
Scope1	36,237 t-CO ₂ /year
Scope2	133,378 t-CO ₂ /year
Total	169,615 t-CO ₂ /year

■ Environmental targets and results

In order to systematically promote environmental conservation, the Kurabo Group has set medium-term targets (three-year numerical targets) for "reduction of CO₂ emissions" and "recycling rate as promotion of zero emissions". We are striving to combat climate change and effectively utilize resources.

For fiscal 2022, we set a target of reducing CO₂ emissions by 38% compared to fiscal 2013 and engaged to reduce energy consumption through energy-saving measures. The result was 35.1% reduction, not reach the target, but is improvement from the 31.3% reduction achieved in FY2021.

Regarding the promotion of zero emissions, the recycling rate was 95.2%, not reach to our target of 96%. The number of sites that have achieved zero emissions (recycling rate of 98% or more) has increased from 27 in FY2021 to 32 in FY2022, and efforts have progressed steadily.

Target item		Result of FY2021	Target of FY2022	Result of FY2022
Reduction of CO ₂ emissions	Absolute reduction (against FY2013)	31.3% reduction	38% reduction	35.2% reduction
Efforts toward zero emissions	Improvement in recycling rate of waste	94.7%	96%	95.2%

The Kurabo Group has set a long-term environmental goal of reducing CO₂ emissions by 46% from FY2013 levels in 2030 and aiming to become carbon neutral in 2050. The environmental target of the medium-term management plan "Progress 24" (2022-2024) is to reduce CO₂ emissions by 40% compared to FY2013 by FY2024. In fiscal 2023, the second year of the medium-term management plan "Progress 24," we aim to reduce emissions by 39% compared to fiscal 2013.

Target item	Target of FY2023	
Reduction of CO ₂ emissions	Absolute reduction (against FY2013)	39% reduction
Efforts toward zero emissions	Improvement in recycling rate of waste	Recycling rate 96%

■ Items for future consideration

As described above, we will proceed with the calculation and disclosure of CO₂ emissions (Scope 3) related indicators. In addition, as part of efforts to strengthen the system for promoting carbon neutrality, we will consider introducing internal carbon pricing, which is one of the "cross-industry indicators" recommended to be disclosed in the TCFD guidance, and converting 100% of the electricity used in our business to renewable energy (participation in RE100), obtaining certification of CO₂ reduction targets (SBT certification) that meet the standards required by the Paris Agreement.

Environmentally Friendly Products

We are changing to an era in which environmental conservation and reduction of environmental impact are strongly required at the life stages of products including production, distribution, use, disposal, and recycling, from conventional product development with an emphasis on economic efficiency and mass production in mind. Kurabo considers a healthy environment for people and the earth, and aims to reduce environmental impact throughout the life stages of its products.

Textile Segment

NaTech

It is a unique technology material that can give functionality to natural fibers. It can add functions such as warmth, deodorant, and moisture absorption and desorption, and has excellent washing durability.



Looplus

We aim to build a circular business that utilizes our unique upcycling technology to recycle scraps from and unnecessary products.



AIR FLAKE

SUSTAINABLE INSULATION

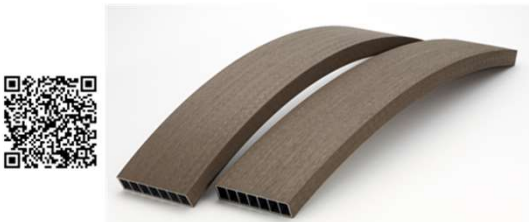
An inner material that is made from 100% recycled materials and features lightness, heat retention, softness, and ease of drying at the level of natural feathers.



Chemical Products Segment

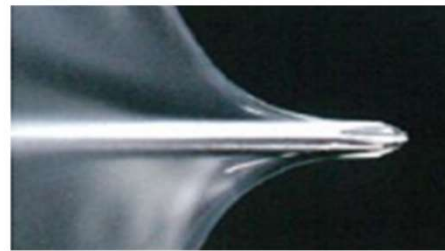
KURATTICE ECO

It is a synthetic wood made by coating a core material such as aluminum with a resin containing wood powder. It is a building material / industrial material that has both the design of natural wood and the strength of metal.



KuranSeal series

A film made of an elastomer material that has both elasticity like rubber and excellent workability of plastic. It contributes to the environment, safety and comfort in applications such as solar cells and interlayer films for building material glass.



Biodegradable film sheet

An environment-friendly film sheet that utilizes biodegradable plastics that are decomposed into water and carbon dioxide by microorganisms and biomass plastics that use plant-derived materials.



Sheedom Co., Ltd

Advanced Technology Segment

Road surface inspection compact unit PG-4

Measuring system of road surface damage in a short time while driving at 100km / h, equipped with 3D camera, rangefinder and GPS.
You can improve the efficiency of infrastructure deterioration diagnosis.



It has a strong sterilizing and drying ability, and repeatedly regenerates used bedding containing livestock manure in a smooth and clean state.



Biomass power generation business

We have been developing a biomass power generation business that uses thinned wood as fuel, and generate electricity equivalent to the annual power consumption of approximately 11,000 ordinary households.



Real Estate Segment

Utilization of electricity derived from renewable energy

At the head office building and the annex building, we have been working to reduce CO2 by using the power derived from renewable energy such as sunlight.





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