

Planet

Corporate Statements

The Kuraray Group
Code of Conduct

TOP STATEMENT

Sustainability Long-term
Vision and Sustainability
Medium-term Plan

Materiality of Kuraray
Group

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Environmental
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Kuraray Report
(integrated report) /
Sustainability website

Initiatives, etc.

Planet priority measures in the Sustainability Medium-Term Plan

Planet			Benchmarks	2024	2026
	GHG emissions	Scope1+2	Year 2019:3.2 million tons	No increase in emissions compared to 2019	
		Scope3	Year 2019:0.9 million tons (Japan)		
				Target the entire Group and identify the category dominates for more than two-thirds of emission In fiscal 2023, formulate numerical reduction targets for fiscal 2024 and fiscal 2026	

Targets for 2022

Planet			2022
	GHG emissions	Scope1+2	No increase in emissions compared to 2019
		Scope3	Identify the category dominates for more than two-thirds of emission

Environmental Management

Global Warming Prevention

Updated

Reduction of Environmental Load

Environmental Accounting

Environmental Data

Sustainability Medium-term Plan for Planet

- Global Warming Prevention / GHG Emissions and Reduction Measures
- Grobal Warming Prevention / Response to TCFD Recommendations and Internal Carbon Pricing

Global Warming Prevention

Response to TCFD Recommendations

In November 2020, Kuraray Group endorsed the recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD)* in recognition of the importance of the climate change control as one of our high-profile issue. The Sustainability Medium-Term Plan, which started from 2022, includes measures to mitigate climate change such as reducing greenhouse gas (GHG) emissions, pursuing energy savings, expanding the products that contribute to improve the natural environment and responding to the Circular Economy. In addition to implement these measures gradually, we will enhance the disclosures of strategy, based on governance and scenario-based analysis, risk-management, indicators and targets which are recommended by TCFD.

※TCFD stands for “Task Force on Climate-related Financial Disclosures” which has been established under Financial Stability Board (FSB) to review how to correspond to climate change disclosures and requirements from the financial sector.

Governance

In Kuraray Group, Sustainability Committee, chaired by the president, promotes sustainability

activities. Under the umbrella of this committee, we will establish several project teams to implement the global measures outlined in the Sustainability Medium-Term Plan and promote each projects. In addition to confirm the progress of the projects relates to climate change control, TCFD Promotion Project Team, which has been established under the umbrella of Sustainability Committee, will enhance the disclosure based on TCFD Guidance.

Topics discussed at Sustainability Committee are going to be reported to the Board of Directors and the feedback from them would be reflected in the future sustainability activities.

Strategy

In 2021, Kuraray Group selected the risks and opportunities for events occurring in the transition to a low-carbon society and for physical events caused by climate change as shown in Table 1 below.

Table1: Risks and Opportunities by Climate Change in Kuraray Group

Items	Social changes caused by climate change	Business risks	Business opportunities
Transition Risk to Low-carbon society	Policies and Legal Carbon Taxes and Carbon Emissions Targets at each countries Rising carbon prices, Energy mix change, Renewable energy subsidy policy and energy-saving policy	- Decrease in revenue from the burden of carbon taxes on GHG emissions and energy procurement - Strengthening CO ₂ Emissions Reductions and Installing Emissions Trading - Introduction of Carbon Border Adjustment Mechanism	- Expand business of energy-saving, energy-storage, and energy-creation products - Development of technologies related to CO ₂ capture, utilization and storage (CCUS) - Reducing Carbon Costs through Local Production
	Technology /Market Decarbonize technologies Replacement with low-carbon products and renewable materials Creating a circular economy	- Increase in manufacturing costs and a decrease in the use of plastic products due to changes to environmentally friendly designs that premise resource recycling in order to comply with plastic regulations - Decrease in internal-combustion engine related products due to increase of electric mobility ratio	- Expand business of products made by bio-materials - Expand business of renewable (recyclable) products - Expand business of high-functionality products that lead to plastic usage reduction - Expand business of electric mobility-related products
	Reputation Changes in customers and investors behavior Increasing demand for climate change control	- Decline in competitiveness due to avoidance of high GHG emissions products - Divestment from companies who do not put an effort to tackle decarbonization	- Expand business of Environmental Contributing Materials
Physical Risk by climate change	Acute Catastrophic disasters of weather conditions Increase in typhoons, heavy rain, sand, and cold wave	- Increased damage to plant and production capacity reduction or shutdowns due to flooding in areas nearby the oceans and rivers - Shutdown or decrease in revenue due to supply chain disruption	- Expand business of disaster countermeasure-related materials
	Chronic Average temperature Increase Increase in heat wave and heat stress Changes in weather and rainfall patterns Occurrence of drought	- Decline in production efficiency due to unfavorable working environment caused by temperature rising - Decline in production capacity or shutdown due to rising water costs caused by drought - Revenue decrease in the agricultural business due to a decline in agricultural production caused by poor crop yield	- Expand business that reduce scarce water supply and food losses - Expand business related to plant factories that are less affected by climate change
	Sea level rise Occurrence of storm surges and high waves	- Decline in production capacity or shutdown due to flooding - Cost increase by water exposure prevention measures (breakwaters, raising, relocation)	

In 2022, we conducted scenario analysis based on the 2° C or below scenario (1.5° C scenario and 2° C scenario) and the 4° C scenario, in which climate change is progressing, with reference to World Energy Outlook published by the International Energy Agency (IEA) and other sources, and assessed the risks and impacts of opportunities caused by climate change.

The impact of ※carbon prices on GHG emissions and energy procurement in the 2° C or below scenario was significant. After the implementation of measures to reduce GHG emissions in 2030, Kuraray Group was expected to bear a burden by carbon tax of approximately 32 billion yen, indicating the possibility of increased operating costs. As a countermeasure, we will steadily advance our GHG emission reduction program toward the goal of zero-carbon emissions by 2050, while at the same time reflecting the market value created by highly environmental contribution products in product and service prices.

※Calculated based on World Energy Outlook 2022 at \$140 /t-CO₂ for developed countries, \$25 /t-CO₂ for emerging countries [2030, 1.5° C scenario]

In addition, we calculated the business impact of climate risks and opportunities in each scenario of the vinyl acetate-related business and the environmental solutions business, both of which are significantly affected by climate change. The results are shown in Table 2. We will take appropriate measures to deal with each calculated impact. We will also continue to analyze other

businesses.

Table2: Business Impact of Climate Change Risks and Opportunities in Each Scenario of the Vinyl Acetate-Related Business and the Environmental Solutions Business

Blue font; Profit , Red font; Loss

Large ≥ 10 billion JPY, 10 billion JPY > Medium ≥ 1 billion JPY, 1 billion JPY > Small

Risks and Opportunities		Business Impact	Business Impact in 2030 Scenario	
			4°C	Below 2°C
Transition Risk to low-carbon society	Decrease in revenue from the burden of carbon taxes on GHG emissions and energy procurement	Costs due to carbon tax※	Medium	Large
		Change in purchase cost of fossil fuels/oil-derived raw materials	Small	Medium
		Change in utility costs (electricity)	Small	Medium
	Impact of achieving GHG emission reduction initiative targets	Costs avoided by GHG emission reduction initiatives	Medium	Large
	Expand business of products made by bio-materials	Increase in operating income for packaging materials derived from biomass	Small	Medium
Physical Risk by climate change	Expand business of renewable (recyclable) products	Increase in operating income for recyclable plastic products	Small	Small
	Decrease in internal-combustion engine related products due to increase of electric mobility ratio	Change in operating income for automotive fuel tanks	Small	Small
	Increased damage to plant and production capacity reduction or shutdowns due to flooding in areas nearby the oceans and rivers	Costs of damage caused by future increases in flooding	Small	Small
	Decline in production efficiency due to unfavorable working environment caused by temperature rising	Increase in labor costs	Small	Small
	Expand business that reduce scarce water supply	Increase in operating income for activated carbon used in water purification	Medium	Small

※Below 2°C scenario(Include 1.5°C scenario) : \$140 /t-CO2 for Advanced countries and \$25 /t-CO2 for Emerging countries in 2030. 4°C scenario : \$ 90 /t-CO2 for EU in 2030

Risk Management



Kuraray Group conducts risk management for both “Mitigation” and “Adaptation” to the risks listed in Table 2.

In order to "mitigate" the risk of transition to a low-carbon society, we are reducing GHG emissions and expanding sales of products that contribute to the natural environment. Progress is confirmed by the Sustainability Committee (chaired by the president). Meanwhile, each organization conducts annual risk self-assessments of "adaptation" measures against climate change to strengthen disaster countermeasures and business continuity. The results of these assessments are discussed by the Risk Management and Compliance Committee (chaired by the director in charge of the Corporate Sustainability Division), and if countermeasures are necessary, the president identifies them as management risks and appoints a person in charge to proceed with countermeasures.

Metrics and Targets

As our long-term goal for mitigating climate change, we will target to reduce our own GHG emissions (Scope1 and 2) by 30% in 2030 compared with in 2019 and to achieve carbon net zero in 2050. In the Sustainability Medium-Term Plan, we have set the following targets for reducing GHG emissions related to climate change and for the Revenue ratio increase of natural environment contributing products.

Table3: Measures and Targets Related to Climate Change in the Sustainability Medium-Term Plan

		Benchmarks	2024	2026	2027 and beyond
 Planet	GHG emissions	Scope 1+2	Year 2019: 3.2 million tons	No increase in emissions compared to 2019	● 2030: 30% reduction compared to 2019 ● 2050: Carbon Net Zero
		Scope 3	Year 2019: 0.9 million tons (Japan)	● Target the entire Group and identify the category dominates for more than two-thirds of emission ● In fiscal 2023, formulate numerical reduction targets for fiscal 2024 and fiscal 2026	
 Product	Revenue Ratio of Natural Environment / Living Environment Contributing Products (Of which, Revenue Ratio of Natural Environment Contributing Products)	Fiscal 2020: 46% (16%)	55% (23%)	60% (27%)	

The Kuraray Group will use ICP to incentivize energy saving, identify revenue opportunities and risks, and inform investment decision making, aiming to realize a low-carbon society.

The Kuraray Group's ICP

Internal carbon price	¥10,000/t-CO ₂ (calculated using internal exchange rates overseas)
Starting Date	January, 2022
Scope	Capital investment entailing a change in CO ₂ emissions
Method of application	The costs of changes in CO ₂ emissions will be calculated using the internal carbon price and used as a criterion for investment decisions

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