

## **Kureha Supports TCFD Initiative and Publishes Climate Scenario Analysis Report**

Kureha Corporation has declared its support for the Task Force on Climate-Related Financial Disclosures (TCFD), which prompts organizations to provide information to investors, shareholders and other stakeholders on the business risks and opportunities presented by climate change.

Based on the TCFD recommendations, Kureha has conducted its climate scenario analysis for the Group's primary businesses. The analysis included quantitative assessments of multiple climate scenarios and identified significant climate-related risks and opportunities, for which Kureha formulated specific action plans. The company's first analysis report, compiled in the TCFD framework of Governance, Risk Management, Strategy and Metrics and Targets, is attached to this announcement. The report is also available in the CSR section of the Kureha Corporation website.

(2022 Kureha TCFD Report: [https://www.kureha.co.jp/en/csr/environment/climate\\_change.html](https://www.kureha.co.jp/en/csr/environment/climate_change.html))

Kureha is committed to greater transparency with increased disclosures relating to climate change. Furthermore, Kureha strives to continually address climate change by promoting its carbon neutrality initiatives and will support to realize a sustainable society.

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For more information, please contact Kureha Corporation, Public & Investor Relations Department  
+81-3-3249-4651

## TCFD Recommendation–based Disclosure

The Kureha Group considers its response to climate change an important issue and has continually worked to aggressively reduce greenhouse gas emissions from its business activities and to rationalize its use of energy.

Furthermore, in response to Task force on Climate-related Financial Disclosure (TCFD) recommendations,\* the Group has started to conduct scenario analyses in order to reevaluate climate change's impact on the Group (risk and opportunities) and to appropriately reflect those in strategic planning.

On April 20, 2022, we expressed its support for TCFD recommendations and move forward with disclosure of the Group's response to climate change in line with the TCFD disclosure framework.

\* TCFD recommendations: At the request of G20 countries, the Financial Stability Board (FSB) established the Task Force on Climate-related Financial Disclosures (TCFD) to examine how climate-related disclosure should be conducted and how financial institutions should respond. Having released its final report in June 2017, the TCFD recommends that corporations and other entities disclose information on governance, strategy, risk management, and metrics and targets related to the risks entailed in and opportunities provided by climate change.

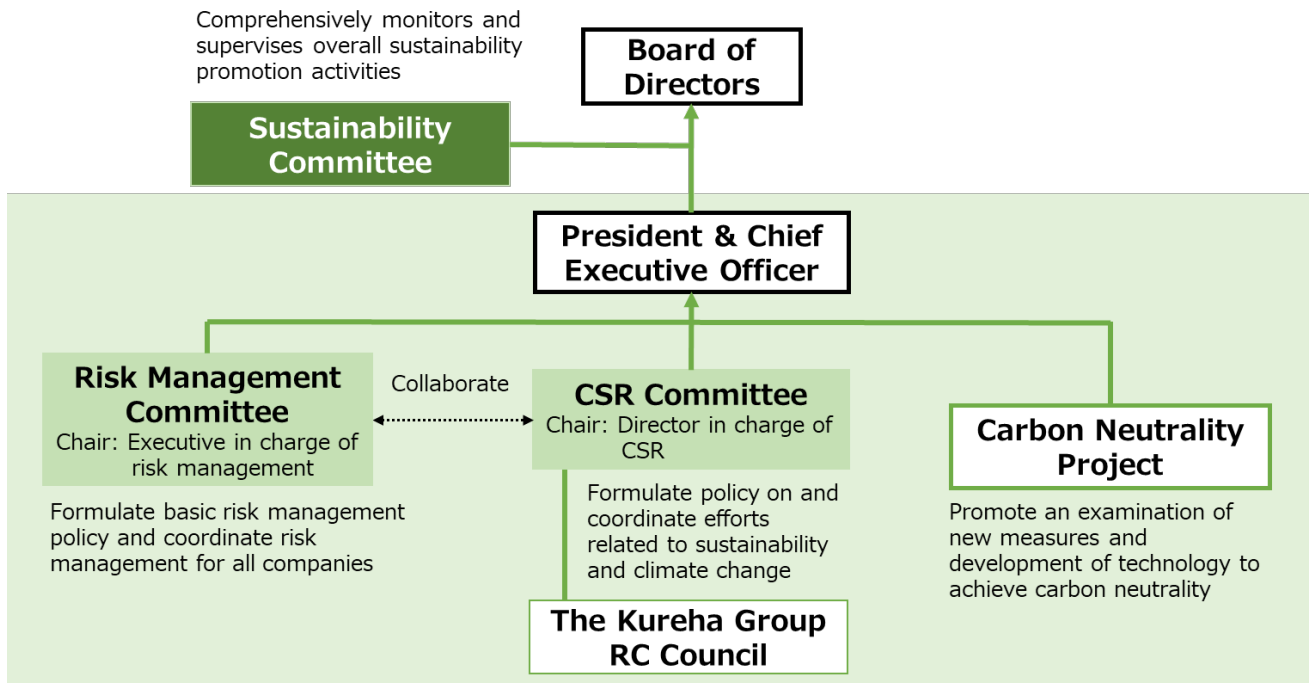
### **Governance**

The basic policy and efforts related to climate change are debated and decided upon by the CSR Committee, which is directly under the President and is chaired by the director in charge of CSR, and then reported to the President & Chief Executive Officer. After receiving the report by the President and CSR Committee, the Board of Directors conducts monitoring and supervision.

Under the CSR Committee, there is the Kureha Group Responsible Care (RC) Council and various subcommittees. In the process of promoting RC activities throughout the Group, the Group comes together to debate and share information on its response to climate change and to tackle the issue.

In addition, on April 1, 2022, the Company established the Sustainability Committee under the Board of Directors, and the committee undertakes integrated monitoring and supervision of sustainability-related activities. The committee also regularly reviews and debates the Group's response to climate change. (See Figure 1)

**Figure 1. Climate Change Response–related Governance System**



## Strategy

Based on the following steps, the Company conducted a scenario analysis of the impact that climate change will have on the Group and organized related risks, opportunities, and responses into short-term, medium-term, and long-term ones.

1. Create a list of risks and opportunities from climate change that could have a long-term impact on its advanced materials, specialty chemicals, specialty plastics, and construction businesses and environmental services, which comprise the majority of the Group's businesses, and related responses in line with business planning and the R&D Policy.
2. Set three scenarios—growth scenario (1.5°C), standard scenario (2°C), and stagnation scenario (4°C).
3. Divide the period through 2050 into three periods (short term, medium term, and long term), hold discussions with related parties, and then score importance of the risks and opportunities for each scenario.
4. Identify highly important risks and opportunities and confirm the response. (Table 1)

Kureha will examine the impact that highly important identified risks and opportunities and responses will have on business plans and profit and fund projections and explain how they are reflected in strategic planning, thus indicating strategic resilience related to the Group's response to climate change.

**Table 1. Highly Important Climate Change–Related Risks and Opportunities and Responses**

Type	Cause	Risks		Opportunities	Responses	
		Short and medium term	Long term	Short, medium, and long term		
Transition risks	Policies and regulations	● Increase in tax burden due to introduction of carbon price, such as carbon tax		● Business opportunities through differentiation based on early decarbonization ● Greater business opportunities through introduction of low carbon technology	<ul style="list-style-type: none"> <li>• Switch fuel for in-house coal-fired power plant or replace the plant with one that employs renewable energy sources</li> <li>• Switch fuels through improvements to existing facilities</li> <li>• Make greater use of renewable energy</li> <li>• Develop and introduce CCU/CCS-related technology</li> </ul>	
		● Increase in transition costs related to switching from electricity generated by in-house coal-fired power plant				
		● Increase in cost of reducing waste plastics due to the Plastic Resource Circulation Act coming into effect		● Greater demand for environment-related businesses		<ul style="list-style-type: none"> <li>• Promote new environment-related businesses</li> <li>• Promote reuse of waste plastic</li> <li>• Develop and introduce new recycling technology</li> </ul>
		<ul style="list-style-type: none"> <li>● Increase in the price of raw materials and fuel</li> <li>● Increase in transportation costs</li> </ul>				<ul style="list-style-type: none"> <li>• Switch raw materials and reduce fuel use</li> <li>• Create high value added products</li> </ul>
	Technology	<ul style="list-style-type: none"> <li>● Increase in low carbon technology and product R&amp;D costs</li> <li>● Increase in R&amp;D costs to improve efficiency of existing process, etc.</li> </ul>		● New business opportunities based on development of low carbon technology	<ul style="list-style-type: none"> <li>• Develop and introduce energy creation and low carbon technology</li> <li>• Develop and introduce new advanced materials</li> </ul>	
	Market	● Decline in market competitiveness due to delay in introducing low carbon versions of existing products		● Greater demand for environmentally friendly products and materials	<ul style="list-style-type: none"> <li>• Develop environmentally friendly products (cars, electronic/electric devices, etc.)</li> <li>• Develop energy-efficient processes</li> </ul>	
	Reputation	● Criticism from consumers and demand for response from investors regarding GHG emissions		● Stable funding sources by indicating response to decarbonization and recycling	<ul style="list-style-type: none"> <li>• Improve disclosure and communication to respond to the interests of consumers and investors</li> </ul>	
Physical risks	Acute risk	<ul style="list-style-type: none"> <li>● Delay or suspension in production due to supply chain disruptions caused by natural disasters</li> <li>● Delay or suspension in production due to direct damage to production factories and infrastructure caused by natural disasters</li> </ul>		● Increase in disaster response and reconstruction (construction business)	<ul style="list-style-type: none"> <li>• Reinforce supply chain</li> <li>• Regularly identify and reduce risks</li> </ul>	
	Chronic risk	<ul style="list-style-type: none"> <li>● Increase in the number of employee health problems (heat stroke, infections, etc.)</li> <li>● Increase in need for temperature and humidity control for storage and transportation of raw materials and products</li> </ul>		● Greater demand for agricultural products	<ul style="list-style-type: none"> <li>• Strengthen occupational safety and health management</li> <li>• Strengthen quality controls</li> <li>• Develop new agricultural products</li> </ul>	

● Impact: large    ● Impact: medium

## **Risk Management**

To ascertain risks throughout the Group that could negatively impact management and prevent those risks or minimize them if they do materialize, the Risk Management Committee, which is directly under the President and is chaired by the executive in charge of risk management, manages risk for the whole Group by stipulating the basic risk management policy.

The Risk Management Committee identifies risks that could have a material impact on the Group's management, and for identified risks, the particular committee and/or related department for that type of risk take the lead and examine and implement a response. The state of risk management is monitored and evaluated by the Risk Management Committee, reported to the Executive Committee and then the Board of Directors.

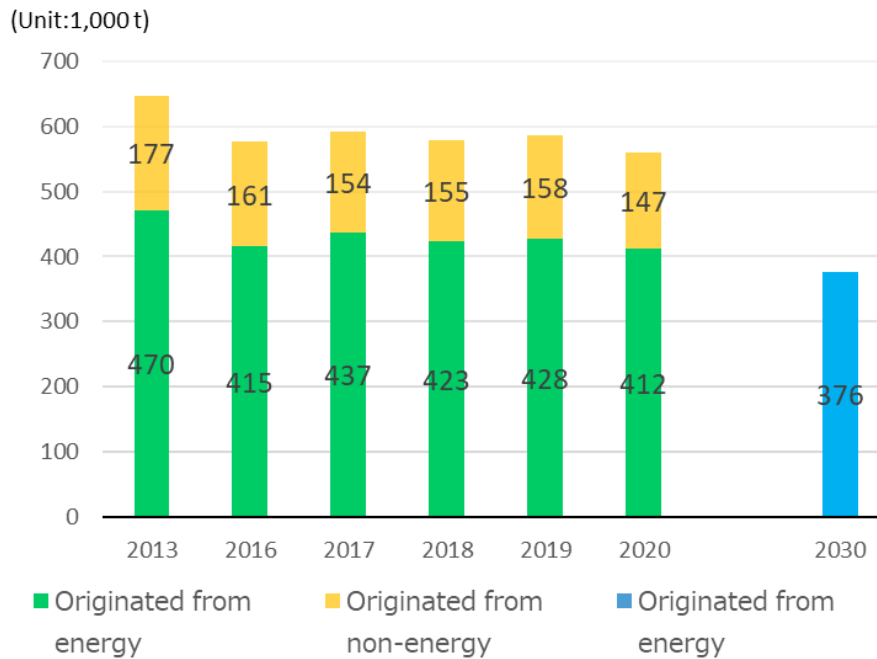
As climate change is recognized as one of the major risks that could have a major impact on the Group's management, the CSR Committee heads a system to promote the response to climate change, which the Risk Management Committee also collaborates with. (See Figure 1)

## **Metrics and Targets**

As one part of its response to climate change, in fiscal 2020, the Group set "steadily cut emissions and reduce the Group's CO<sub>2</sub> emissions originated from energy 20% compared to fiscal 2013 to 376,000 tons" as its fiscal 2030 target for reducing CO<sub>2</sub> emissions (Figure 2). In order to achieve that target, the Group is limiting operation of the coal-fired power plant at its Iwaki Factory, switching to renewable energy as the main source of energy for its various business offices and Group companies, improving efficiency when replacing major facilities and equipment, and promoting various energy-saving activities in line with plans. The Company calculates both the overall Group's direct CO<sub>2</sub> emissions from use of fuel and energy, etc., (Scope 1) and its indirect CO<sub>2</sub> emissions from the use of energy purchased from other companies, including electricity, heat, and steam, (Scope 2) and discloses these as indicators of progress toward its goals (Table 2). As a chemical company, Kureha recognizes that it is also important to manage emissions throughout the supply chain (Scope 3), from raw material purchases to waste disposal, and has begun to calculate those.

In October 2021, the Group also launched the Carbon Neutrality Project, a group-wide project directly under the President, and manages and promotes the Group's activities to achieve carbon neutrality by 2050. In particular, efforts are being made to examine new measures and develop new technologies with the goal of achieving carbon neutrality ahead of schedule by raising the current reduction targets.

**Figure 2. CO<sub>2</sub> Emissions from Business Activities Originated from Energy and Non-energy**



Fiscal 2013 is the reference fiscal year for Kureha Group's medium-term CO<sub>2</sub> emission reduction targets set in fiscal 2020.

**Table 2. Greenhouse Gas Emissions\* from Business Activities by Scope**  
(Unit:1,000t)

		2017	2018	2019	2020
<b>Kureha Corporation</b>	Scope1	352	337	356	340
	Scope2	45	42	30	31
	Total	397	380	386	371
<b>Group Companies in Japan</b>	Scope1	147	147	150	139
	Scope2	12	21	21	20
	Total	159	168	171	159
<b>Overseas Group Companies</b>	Scope1	6	5	4	4
	Scope2	29	25	24	24
	Total	35	30	28	28
<b>Total</b>		591	578	586	559

\* Calculated greenhouse gas is CO<sub>2</sub> emissions originated from energy and those originated from non-energy.