

Information Disclosure in Line with the Recommendations by the Task Force on Climate-related Financial Disclosures (TCFD)

Responding to Challenges Related to Climate Change

In recent years, the impact of climate changes is progressively increasing, with frequent extreme weather events and natural disasters threatening the safety of people around the world. Reflecting this situation and since the adoption of the Paris Agreement at the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015, the global momentum for climate change mitigation and adaptation is rising, pressuring businesses to proactively address climate changes through decarbonization and other initiatives.

The Yokohama Rubber group also considers that climate change mitigation and adaptation is as one of our most important management issues for contributing to a sustainable society and ensuring sustainable corporate growth. To make this position clear, we officially expressed our support for the TCFD recommendations, which encourages organizations toward broader disclosure of climate-related business and financial risks, in January 2022.

We will continue to actively disclose information on our efforts to address climate change in line with the TCFD recommendations.

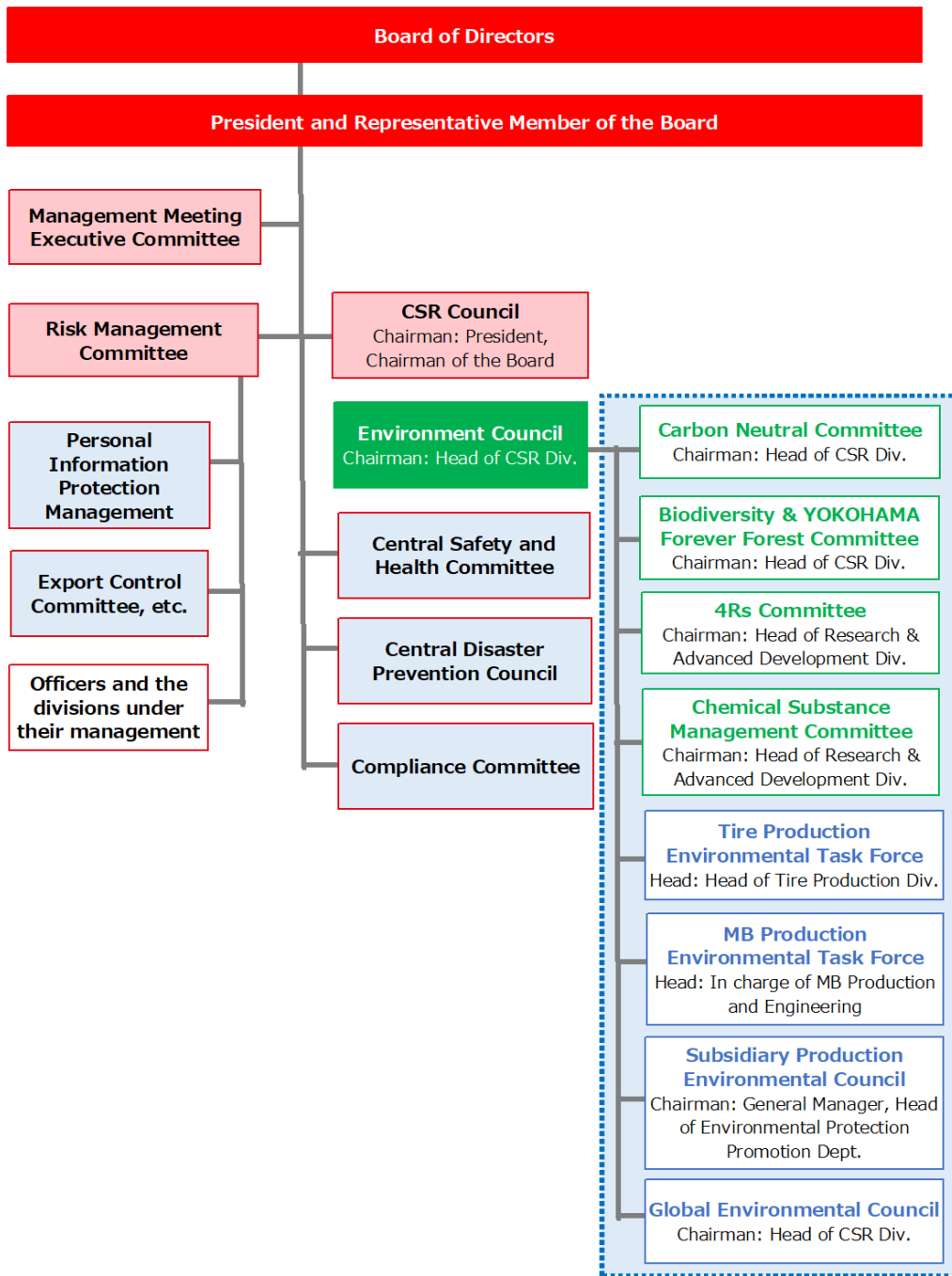
Governance

Our CSR Council, chaired by our president/CEO, meets twice a year (in May and November) to discuss issues related to climate change mitigation and adaptation as well as CSR issues and plan corporate actions to be taken by the Yokohama Rubber Group.

Specifically, in the area of climate change mitigation and adaptation, we have an Environment Council overseeing two task forces, two councils and four committees to promote our environmental efforts.

The Environment Council is chaired by the director who heads our CRS Division. The Council discusses and makes decisions regarding various issues such as carbon neutrality and oversees the environmental efforts by the entire Yokohama Group.

Climate Change-related Governance Structure



> Corporate Governance Structure

Strategy Planning

We classify climate-related risks into two categories, that are the risks associated with the transition to a low-carbon economy ("transition risks") and those associated with the physical impacts of climate changes ("physical risks"). We assess the magnitude of the financial impacts of these two risk groups and thereby more clearly define the risks and opportunities related to our business.

In addition, we conduct scenario analysis using the temperature rise scenarios presented by the International Energy Agency (IEA) and the Intergovernmental Panel on Climate Change (IPCC), and examined adaptation measures and financial impacts, etc. in the light of the risks and opportunities related with the 1.5°C-rise and 4°C -rise scenarios, respectively. Going forward, we will continue to examine risks and opportunities and refine our scenario analysis.

Major Risks and Opportunities Related to Climate Changes

		Material Factors	Category	Potential Financial Impact	Impact
Risks	transition risks	Transition to a decarbonized society	Policy and Regulations	Introduction and rise of carbon pricing	Large
			Markets	Resource (raw material) price hikes and supply instability	Large
				Increase in renewable energy and fuel prices (crude oil, natural gas)	Large
			Technology	Capital investment to improve manufacturing process efficiency	Medium
			Reputation	Impact on customer evaluation of emission reduction efforts and stance, and on stock price	Small
				Response to the global movement to promote the use of renewable energy (reputation among stakeholders)	Small
		Change in demand for products and services	Markets	Product selection based on evaluation of CO2 emissions during manufacturing (competition within the same product)	Large
	Response to changes in the automotive industry	Markets	Decline in car sales due to MaaS	Large	
	physical risks	Intense weather disasters due to rising temperatures	Acute	Raw material procurement difficulties and higher procurement costs due to supply chain disruptions	Large
				Equipment damage or shutdown due to extreme weather	Large
		Intense climate change	Chronic	Depletion of natural rubber (natural resources) due to climate change, making procurement difficult	Large
				Decline in demand for winter tires due to reduced snowfall, etc.	Large
				Increased R&D investment required to improve product performance	Medium
opportunities	Transition to a decarbonized society	Energy Sources	Reduce energy costs by improving manufacturing process efficiency	Medium	
		Products and Services	Increase market share by responding quickly to changes in demand (carbon neutral compliance and performance requirements for electric vehicle (EV) installation) and stricter regulations.	Large	
	Change in demand for products and services	Products and Services	Improve competitiveness and profitability by offering environmentally friendly products using renewable/recycled raw materials and fuel-efficient, low-carbon products	Large	
	Response to changes in the automotive industry	Products and Services	Increased demand for products and services that support next-generation mobility (CASE and MaaS compliance, new business opportunities through hydrogen utilization)	Large	
	Climate change	Products and Services	Increased demand for products and services that contribute to disaster prevention, recovery, temperature change, food, and nature (e.g., tires, oil fenders, etc. that contribute to crop/forest growth)	Large	

Summary of our scenario analysis

Scenario Conditions		1.5°C scenario	4°C scenario
Scenario Overview		Limit the increase in the global average temperature to 1.5°C above pre-industrial levels by 2100 through stringent climate policies and technological innovation for sustainable development.	Failure of strict climate policies and technological innovation, and rapid intensification of the physical effects of climate change, resulting in a 4°C increase in average temperature by 2100 relative to pre-industrial levels.
Reference Scenario	Transition risk	IEA Net Zero Emissions by 2050 Scenario (NZE)	IEA World Energy Outlook 2021 (WEO2021)
	Physical Risk	IPCC 6th Report SSP1-1.9	IPCC 6th Report SSP5-8.5
Analysis Results		<p>Mainly transition risks/opportunities are manifested.</p> <p>[Risks] Increased energy cost burden and capital investment to improve manufacturing process efficiency due to the need to comply with strict climate change regulations, procurement of renewable energy, and introduction of carbon pricing. Increased R&D and procurement cost burdens for renewable/recycled raw materials due to the increase in the number of products with reduced environmental impact.</p> <p>[Opportunities] Competitiveness and profitability will be enhanced through carbon neutral compliance, early response to EV-mounted performance requirements, and provision of environmentally friendly, fuel-efficient, and low-carbon products.</p>	<p>Mainly physical risks/opportunities manifested.</p> <p>[Risks] Increased occurrence of serious natural disasters at bases and in the supply chain. In addition, extreme weather conditions will deplete natural resources, making raw material supplies unstable. Product demand changes due to chronic climate change, such as lower demand for winter tires due to reduced snowfall, etc.</p> <p>[Opportunities] Increased demand for products and services for disaster prevention, recovery, and temperature fluctuations.</p>

Risk Management

Regarding risks related to climate change, the Carbon Neutral Promotion Committee and other task forces, councils, and committees operating under our Environment Council identify and assess the specific risks and lead the action to mitigate them. The more critical environmental risks identified by the individual task forces, councils or committees will be directly worked on by the Environment Council to decide corporate actions. For physical risks such as natural disasters, the Central Disaster Prevention Council promotes disaster control, and BCP and risk reduction efforts.

Of the above-mentioned types of risks, the most critical and urgent ones are discussed, evaluated and acted upon by the Risk Management Committee, chaired by the head of our Corporate Administration Division. The Risk Management Committee is a body provided for the purpose of strengthening our defense against various risks surrounding the Yokohama Rubber group.

The activities of the Risk Management Committee are regularly reported to the Board of Directors.

The activities of other committee bodies are reported to the Executive Committee as required, and may also be reported to the Board of Directors where appropriate.

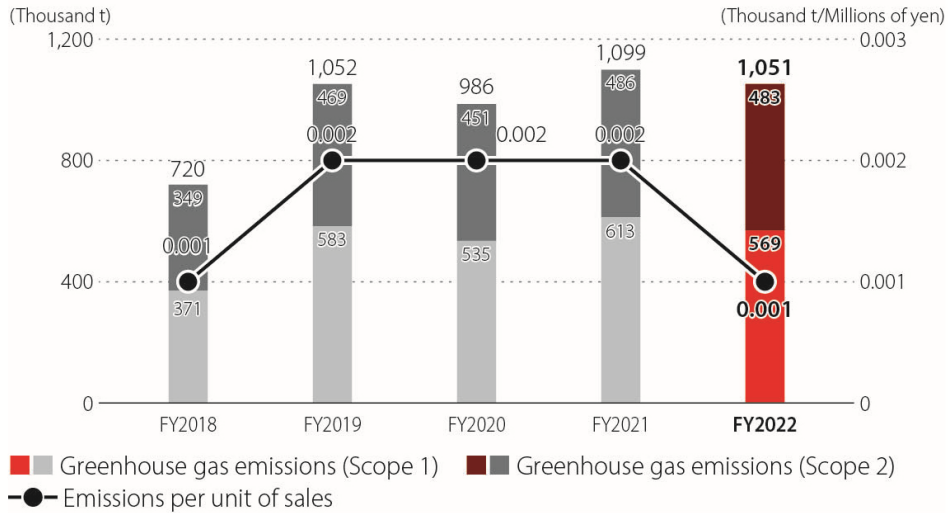
Metrics and Targets

In order to minimize risks related to climate changes, we have the following mid to long-term targets for our environmental activities.

Item	Mid to Long-Term Targets
Carbon Neutral	<ul style="list-style-type: none">Reduce CO2 emissions from company activities by 38% by 2030 compared to fiscal 2013Achieve net zero CO2 emissions (carbon neutrality) in our activities by 2050
Circular Economy	<ul style="list-style-type: none">At least 30% renewable/recycled raw material usage by 2030100% sustainable raw materials usage by 2050
Coexistence with Nature	<ul style="list-style-type: none">Cumulative 1.3 million trees planted and saplings provided by 2030 as part of Forever Forest activities

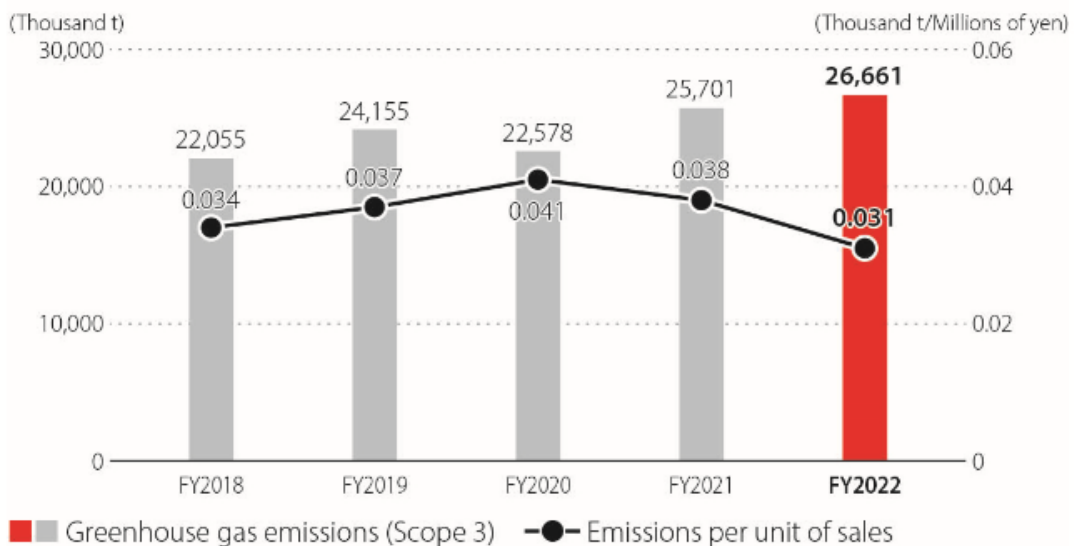
The records of our Scope 1 & 2 and Scope 3 greenhouse gas emissions are shown below.

Greenhouse Gas Emissions (Scope 1-2) (Consolidated)



Greenhouse gas emissions (Scope 1 and Scope 2) decreased year on year, with Scope 1 emissions decreasing 7% and Scope 2 emissions decreasing 1% due to Group-wide reduction efforts despite 4% increase in tire production. Emissions per unit of sales improved 25% year on year for Scope 1 + Scope 2.

Greenhouse Gas Emissions (Scope 3) (Consolidated)



Greenhouse gas emissions (Scope 3) increased 4% year on year along with the increase in tire production volume. Emissions per unit of sales improved 19% year on year.

Scope 3 calculation

The breakdown of Scope 3 is as follows.

(Emissions Unit: thousand t-CO₂)

Cat	Scope 3 category	FY2020	FY2021	FY2022
1	Purchased products and services	2,924	4,031	4,022
2	Capital goods	52	152	175
3	Fuel and energy	135	147	129
4	Transportation and distribution (upstream)	167	154	125
5	Waste	16	50	27
6	Business travel	3	5	5
7	Commuting employees	20	21	19
8	Upstream lease assets	NA	NA	NA
9	Downstream transportation and distribution	59	72	59
10	Processing of sold products	11	10	14
11	Use of products	18,259	19,940	21,087
12	Disposal of products	822	875	906
13	Downstream lease assets	NA	NA	NA
14	Franchise	NA	NA	NA
15	Investment	111	246	92
SUM		22,578	25,701	26,661

※1 Scope 1: Direct emissions of greenhouse gases by the Company (examples: fossil fuel, natural gas, etc.)

※2 Scope 2: Indirect emissions of greenhouse gases by the Company (electric power use, etc.)

※3 Scope 3: Greenhouse gases emitted indirectly by the Company through its supply chain activities (manufacturing, transportation, business travel, commuting, etc.)

※4 Calculation was conducted in accordance with the criteria of Scope 3 issued by the "GHG Protocol."

Verification of greenhouse gas (GHG) emissions

We had the calculation results verified by a third-party institution in order to ensure the accuracy and reliability of our GHG emission calculation.

- Third-party greenhouse gas verification report
 - Japanese version (4,147KB)
 - English version (5,520KB)

> Emissions

On our Sustainability website, we disclose our environmental metrics such as water consumption, waste generation and also provides information about our biodiversity conservation actions through the Forever Forest Program.

For more statistical data, please use the following link:

> Non-Financial Highlights