

Reporting Based on TCFD Recommendations Analysis of climate change risks and opportunities for the Maxell Group

Since the Paris Agreement came into effect, demand has been growing for companies to reduce their total greenhouse gas emissions, regardless of business expansion. Maxell has long been proactively working to reduce the environmental impact of its manufacturing processes.

We have identified “Creating Economic Value through Environmental Activities” as an important issue (materiality), and are operating our businesses with a total emissions reduction target for greenhouse gases in place.

Basic Approach

Climate change is a threat to both humanity and the health of the Earth, affecting our businesses, customers, and supply chain. As one of the companies addressing climate change, we believe that we have a significant role to play in contributing to global efforts to prevent climate change. Whereas we understand that climate change poses risks, such as increased costs and business disruption, we also see it as an opportunity for Maxell to create new value by meeting the societal needs that emerge.

Maxell announced its endorsement of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in October 2021. In line with the TCFD recommendations, we analyze the risks and opportunities posed by climate change to our businesses, and work to disclose relevant information relating to governance, strategy, and other areas. Maxell is implementing initiatives in accordance with the framework below, which covers the four core elements of the TCFD recommendations: governance, strategy, risk management, and metrics and targets.

(1) Governance

The Board of Directors is responsible for decisions relating to Maxell's climate change initiatives.

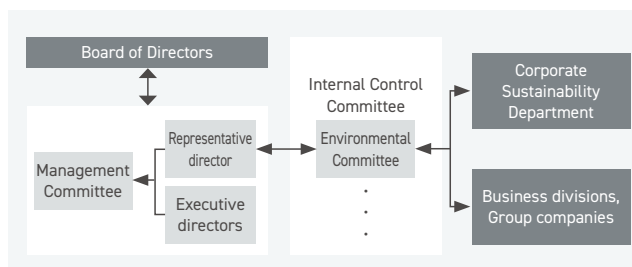
- The Board of Directors is our highest decision-making body and is responsible for all decisions, including those concerning climate change-related issues.
- The president and representative director is in charge of climate change-related issues. The president also serves as the head of the Environmental Committee, and is responsible for incorporating all environment-related issues into our corporate strategy and targets.

Board of Directors decisions on climate change-related initiatives

- (1) Endorsement of TCFD recommendations (October 2021)
- (2) Setting of medium- to long-term goal of reducing CO₂ emissions by 50% or more by FY2030 (vs FY2013) and a commitment to focus on addressing environmental issues (November 2021)
- (3) Introduction of solar power generation for in-house consumption (December 2021)
- (4) Disclosure of TCFD scenario analyses (July 2022)

- We have established an Internal Control Committee to ensure and strengthen the effectiveness of corporate governance for the enhancement of the entire Group's corporate value and the achievement of management objectives. With regard to climate change, the Environmental Committee is working to establish a Group-wide management system and enhance its functions.
- The Environmental Committee is responsible for drafting Maxell Group's overall strategy for climate change and managing the Group's progress towards achieving its climate change-related targets. The committee is composed of environmental promotion officers and environmental management officers from business divisions at each business site, as well as the chairs of specialized subcommittees. The committee meets three times a year.

Governance structure



(2) Strategy

In July 2023, Maxell established an Environmental Vision to clarify the ideal features of its environmental management from a long-term perspective, positioning the resolution of environmental issues as one of the top priorities.

Environmental Vision

"Maxell aims to achieve 'a carbon-free society' and 'a recycling-oriented society' by pursuing innovation, and contribute to the realization of a sustainable society in which everyone can live with peace of mind."

<Initiatives towards achieving a carbon-free society> Targets

- FY2030: Reduce CO₂ emissions by 50% or more (Scope 1 and 2, domestic)
- FY2050: Achieve carbon neutrality (Scope 1 and 2, global)

Climate change risks and opportunities

In 2021, we began conducting a climate change scenario analysis, starting with the Energy Division as a model case. In fiscal 2022, we extended this analysis to cover Maxell's three other business divisions: the Functional Materials Division, the Optics & Systems Division, and the Life Solution Division.

The analysis focused on production areas where Maxell is likely to be most affected by climate change. We conducted analyses based on 1.5°C and 4°C temperature increase scenarios, to identify risks and opportunities, and consider relevant measures.

- Scenarios considered: 1.5°C (RCP1.9/SSP1) and 4°C (RCP8.5/SSP5)

Although climate change presents risks for all four divisions, it can also be turned into an opportunity through harnessing the innovative proprietary technologies that Maxell has developed over many long years.

For all four divisions, the medium- to long-term risks identified under the 1.5°C temperature increase scenario include increased tax burdens due to the introduction of carbon taxes, and significant impacts on businesses from changes in consumer behavior. Additionally, it was found that under a 4°C temperature increase scenario, the exacerbation of extreme weather events such as storms could have a significant impact on businesses.

Reporting Based on Recommendations of TCFD Analysis of climate change risks and opportunities for the Maxell Group

Scenario analysis Scenario where the goal is to limit temperature increase to 1.5°C: Regarding the transition risks, it is assumed that governmental regulations will be tightened and that net zero CO₂ emissions will be achieved by 2050 through the implementation of countermeasures.

Scenario where temperature rises by 4°C: Regarding physical risks, abnormal weather events would be expected to intensify if additional policies are not implemented and no progress is made with climate change countermeasures.

Risks and opportunities

Definitions for large, medium, and small business impacts: Large: 1 billion yen or more, Medium: 100 million yen to less than 1 billion yen, Small: less than 100 million yen

Risks		Major risks	Degree of business impact								Major opportunities					
			Energy Division		Functional Materials Division		Optics & Systems Division		Life Solution Division		Energy Division	Functional Materials Division	Optics & Systems Division	Life Solution Division		
Categories	Sub-categories		1.5	4	1.5	4	1.5	4	1.5	4						
Transition risks	Policies/regulation	Carbon tax increases	Introduction of carbon tax will have broad impact on raw materials, containers, and packaging materials, and result in increased costs	Medium	Small	Large	Small	Large	Small	Medium	Small	Cost reductions through installation of energy-saving equipment and improvements to energy-saving processes		Lessening environmental impact with low-carbon alternative materials		
		CO ₂ emissions of each country	Need to switch to high-efficiency manufacturing equipment due to strengthened energy-saving policies	Small	Small	Small	Small	Small	Small	Small	Small	Small	CO ₂ monitoring advances and batteries integrated into infrastructural facilities, leading to increased sales	Growing demand for renewable energy in semiconductor and housing-related businesses	Growing demand for CO ₂ monitoring leads to increased sales in semiconductor-related businesses	Growing recognition of value of environmentally conscious products, leading to increased sales
		Strengthening of emissions reduction policies		Small	Small	Small	Small	Small	Small	Small	Small	Small	—	—	—	—
	Market	Price increases/decreases for important products	Profitability improvement due to growing market recognition of environmental value of carbon-neutral environmentally compliant products	Small	Small	Medium	Small	Medium	Small	Small	Small	Small	Increased sales with growing recognition of value of environmentally conscious products		Acceleration of CASE and transition to Smart Cities - Increased sales of semiconductor manufacturing equipment by expansion of AI/IoT - Increased sales by growth in installation number of automotive sensing cameras	Increased sales with growing recognition of value of environmentally conscious products
		Changes to consumer behavior	Growth of environmentally conscious purchasing by consumers in response to climate change	Medium	Small	Small	Small	Medium	Small	Small	Small	Small				
	Reputation	Changes to reputation among investors	Deterioration of reputation among investors and difficulty in procuring funds if climate change countermeasures deemed inadequate	Small	Small	Small	Small	Small	Small	Small	Small	Small	—	—	—	—
Chronic		Rise of average temperatures	Increase in expenses due to increase in electricity consumption	Small	Small	Small	Small	Small	Small	Small	Small	Small	Increased sales of batteries used as disaster/emergency power sources	Increased sales of tapes for construction due to growing demand for airtight houses as temperatures rise	- Increased market share and sales with environmentally resistant in-car camera lens units - Increased sales of systems such as disaster surveillance sensors, surveillance cameras, disaster monitoring systems, and others	Increased sales of sterilization/deodorization products due to mold growth
	Changes to precipitation/weather patterns	Frequent damage to business sites due to increased precipitation and flooding	Large	Large	Large	Large	Large	Large	Large	Medium	Medium		Increased demand for waterproofing tape and increased waterproofing technology-related sales			
	Rising sea levels	Increasing chronic damage to business sites at low altitudes	Small	Small	Small	Small	Small	Small	Small	Small	Small	—	—	—	—	
Physical risks	Acute	Intensification of abnormal weather	Frequent abnormal weather events such as storms cause repeated damage	Large	Large	Large	Large	Large	Large	Medium	Medium	Increased sales of batteries used as disaster/emergency power sources	Increased sales of masking tape and glass protection (anti-shatter) tape for use in disasters	- Increased market share and sales with environmentally resistant in-car camera lens units - Increased sales of systems such as disaster surveillance sensors, surveillance cameras, disaster monitoring systems, and others	Increased disaster-preparedness-related demand	

Reporting Based on Recommendations of TCFD Analysis of climate change risks and opportunities for the Maxell Group

Response to Climate Change-Related Risks Based on Climate Change Scenarios

We have considered our response to the risks in the 1.5°C temperature rise scenario from the impact of an increased tax burden due to the introduction of carbon taxes on business activities. To reduce CO₂ emissions and mitigate the burden of carbon taxes, we will focus on energy-saving activities, solar power generation for in-house use, and the promotion of non-fossil certificates.

To mitigate risks associated with the potential impact on our business by changing consumer behavior, we will continue to provide products and services that help to resolve societal issues through the introduction of environmentally conscious products based on a new set of criteria, which we have set as an action plan.

In the 4°C temperature rise scenario, we anticipate impact from intensified abnormal weather events such as severe storms. To address this risk, we will enhance our business continuity planning to minimize damage and strengthen our resilience against disruptions in our own operations and in our supply chain.

Response to Climate Change-Related Opportunities Based on Climate Change Scenarios

Based on the climate change scenarios, we believe that many opportunities will arise for products developed through harnessing the Analog Core Technologies of each business unit of Maxell (detailed examples on page 50).

From fiscal 2023, we will be conducting scenario analyses for group companies and overseas factories.

(3) Risk Management

Maxell evaluates and manages the impact assessment of environmental risks and opportunities related to climate change through its Environmental Committee. When there are risks and opportunities that are considered particularly significant for the entire Maxell Group, the Management Committee deliberates on the assessment results and makes any necessary decisions. When necessary, these matters are further deliberated on by the Board of Directors.

Environmental Committee

The Environmental Committee oversees climate change-related risks, opportunities, and strategies, and manages group-wide progress towards achieving climate change-related targets.

(4) Metrics and targets

Maxell has set two KPIs as materialities for its initiatives contributing to a carbon-free society.

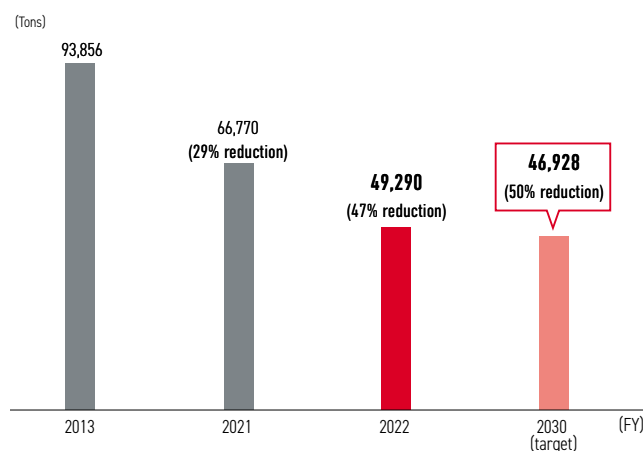
Scope 1 and 2 (vs FY2013)

Action Plan	Conserving resources and energy, and promoting the introduction of renewable energy
KPI	Reduce domestic CO ₂ emissions: by 50% by FY2030 (vs FY2013)

In FY2022, we achieved a 47% reduction (vs FY2013).

To achieve its medium- to long-term targets, Maxell is implementing energy-saving measures with a broader and longer-term perspective in its domestic factories (including process improvements and upgrading to high-efficiency equipment) and has formulated a plan for reducing CO₂ emissions through the use of renewable energy (such as solar power and the utilization of non-fossil certificates), and is actively advancing these initiatives.

Maxell's domestic CO₂ emissions reduction targets (Scope 1 and 2)

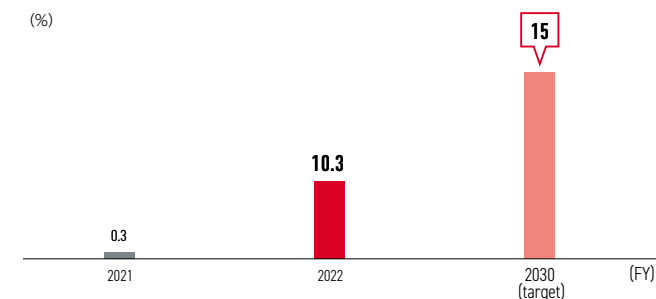


Renewable energy ratio

Action Plan	Conserving resources and energy, and promoting the introduction of renewable energy
KPI	Renewable energy ratio: 15% by FY2030 NEW

We surpassed our KPI of achieving a "renewable energy ratio: 10% by FY2030" in FY2022, due to the introduction of solar power for in-house use, the utilization of non-fossil certificates and the adoption of green electricity (CO₂-free electricity). We therefore set a new KPI of achieving a "renewable energy ratio: 15% by FY2030."

Renewable energy ratio target



Scope 3

CO₂ emissions from the "Purchased Goods and Services" category account for a large portion of overall emissions and, we are therefore working to ascertain the emissions reduction targets of our major suppliers and collaborating with them on achieving those reductions.

The next in line is the "Use of Sold Products" category, which also accounts for a significant portion of CO₂ emissions. We will therefore continue to design and sell energy-efficient products and work towards reducing their emissions.

Maxell has been disclosing Scope 3 emissions in its integrated reports since 2018.

Integrated Report 2021

https://www2.maxell.co.jp/ir/pdf/MAX_IR21_E_interactive.pdf

Integrated Report 2022

https://www2.maxell.co.jp/ir/pdf/MAX_IR22_E_interactive.pdf