

Creating Economic Value through Environmental Activities

At Maxell Group, we recognize that addressing global environmental issues, including global warming, is an urgent priority.

To help address such issues, we have introduced a company-wide environmental management system and are advancing company-wide efforts.

Environmental Management

Operation of Environmental Management System

In light of developments such as the adoption of the UN Sustainable Development Goals (SDGs) and the Paris Agreement, there is a growing demand for companies to make even greater contributions towards achieving a sustainable society. Maxell Group recognizes that alongside enhancing corporate value, it must play a more significant role in environmental conservation.

Maxell Group is committed to environmental initiatives, including efforts to help prevent global warming, in accordance with its "Environmental Conservation Action Guidelines."^{*1} The environmental activities of Maxell Group are led by the president and are conducted in line with the environmental management system. We ensure compliance with regulations such as the REACH regulation and the RoHS directive and are steadily reinforcing our compliance efforts. We are also bolstering our focus on activities aimed at achieving environmental results based on the ISO 14001:2015 standards.

The Financial Stability Board (FSB) launched the Task Force on Climate-related Financial Disclosure (TCFD) to promote the identification and disclosure of the risks and opportunities that climate change presents to companies and financial markets. In October 2021, Maxell announced its endorsement of the TCFD's recommendations and is now conducting scenario analyses (refer to pages 49, 50, and 51).

^{*1} Environmental Conservation Action Guidelines:
https://www.maxell.co.jp/csr/csr2/csr_guideline.html (in Japanese only)

Establishment of Maxell Group's Environmental Vision

Since the coming into effect of the Paris Agreement, companies have been expected to reduce their total greenhouse gas emissions, irrespective of business expansion. Maxell has been working to reduce the environmental impact of its manufacturing activities for some time. Maxell has identified "Creating Economic Value through Environmental Activities" as an important issue (materiality) and is conducting business operations with the target of reducing CO₂ emissions.

In 2020, the Japanese government set the target of achieving carbon neutrality by 2050, thereby necessitating even greater CO₂ reduction efforts.

Maxell Group has established the Environmental Vision in July 2023 and is pursuing a variety of initiatives on the way to achieving its goal of reducing domestic CO₂ emissions by 50% from the fiscal 2013 levels by fiscal 2030 to achieve a carbon-free society (Scope 1 and 2 emissions). Additionally, looking towards 2050, the group will continue with efforts such as factory energy efficiency-boosting initiatives, increased use of renewable energy, and the use of non-fossil certificates. The group will also contribute to the achievement of carbon neutrality by fiscal 2050 (global Scope 1 and 2 emissions) and the realization of a sustainable society through the implementation of decarbonization technologies developed by Maxell Group. This includes "Electrolytic Reactors" used in the electrolytic reduction of CO₂ developed through the production of electrodes using dispersion and coating technologies which are the Analog Core Technologies that Maxell has developed over the years in the course of developing and manufacturing products like magnetic tapes and lithium-ion batteries.

To contribute to achieving a recycling-oriented society, Maxell Group has also set targets to reduce waste intensity per production as a way to promote waste-free design and manufacturing throughout the entire Group. The initial focus will be on reducing loss resulting from manufacturing errors.

Additionally, in response to growing concern over plastic waste-

related issues like ocean plastic pollution, the group has set the target of commencing chemical and material recycling of composite plastic waste generated at its facilities by fiscal 2030.

Implementation of Maxell Group Environmental Action Plan for Fiscal 2022

Based on the belief that environmental activities and contribution to business performance should be managed in an integrated manner, Maxell Group aims to motivate its workforce through the management of indicators (on intensity per production basis: amount consumed/amount produced) that help to visualize efforts for improvement. The indicator we used until the previous fiscal year, which was based on intensity per net sales, is no longer used due to the increasing cost of electricity and other energy resulting from soaring crude oil prices and the rising waste disposal costs, which made it impossible to provide appropriate evaluations.

In fiscal 2022, we successfully achieved the target for energy and waste intensity per production. However, in terms of the target for water usage intensity per production, which had not been achieved, we fell short of the target due to our inability to reduce the fixed water usage volume in line with the decrease in production amount. We will persevere with efforts to make

Environmental Vision

Maxell aims to achieve "a carbon-free society" and "a recycling-oriented society" by pursuing innovation and contributing 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 CO ₂ emissions by 50% or more (vs FY2013)	Subject: Scope 1 and 2 emissions (domestic)
	FY2050	Achieve carbon neutrality	Subject: Scope 1 and 2 emissions (global)
Initiatives towards achieving a recycling-oriented society (Resource saving and resource recycling of plastics, etc.)			
Targets	FY2030	- Achieve waste intensity per production ^{*2} of 0.0450 (tons/million yen) or less (reduction by 19% vs FY2021)	Scope: Global
		- Commence chemical/material recycling of composite plastic waste	

^{*2} Waste intensity per production is an index for generated waste amount. Waste amount (t) / production amount (million yen)

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Environmental Action Plan for FY2022^{*1}

Evaluation: ■■■ Achieved ■■ Achievement rate 95% or higher ■ Achievement rate less than 95%

No.	Action targets		Classification ^{*2}	FY2022			FY2023
				Targets	Results	Evaluation	Targets
1	Net sales ratio of eco-friendly CSR/CSV products (%)		Domestic/overseas	100	100	■■■	100
2	Registration ratio of eco-friendly CSR/CSV products using new assessment approach (%)		Domestic/overseas	100	100	■■■	100
3	Market introduction ratio of eco-friendly CSR/CSV products (%)		Domestic/overseas	100	100	■■■	100
4	"Eco Mind" education participation ratio (%)		Domestic/overseas	100	100	■■■	100
5	Continuation of zero emissions (years) (target: manufacturing facilities) (Final disposal volume: less than 5t, final disposal ratio: less than 1%)		Domestic	22	22	■■■	23
6	Energy	Intensity per production x 10 ⁻³ (kL/million yen)	Domestic/overseas plants	420	403	■■■	398
			Domestic plants	350	330	■■■	324
		Intensity per personnel and floor space (kL/person + km ²)	Domestic/overseas offices	22	16	■■■	18
7	Waste	Intensity per production x 10 ⁻⁴ (t/million yen)	Domestic/overseas plants	571	532	■■■	538
		Recycling ratio (%)	Domestic/overseas plants	70	90	■■■	70
8	Water	Intensity per production x 10 ⁻² (m ³ /million yen)	Overseas plants	747	840	■	800

*1 Value of in-house production amount at overseas plants converted to yen at fixed exchange rates

*2 Overseas plants: Maxell Digital Products China Co., Ltd., Wuxi Maxell Energy Co., Ltd., Maxell Tohshin (Malaysia) Sdn. Bhd., Maxell Europe Ltd. Telford Plant, PT. Siontec Ekadharma Indonesia

improvements and conserve water.

In fiscal 2022, Maxell Group experienced no significant environmental incidents, and was subject to no environmental fines or complaints. Additionally, with the enforcement of the Fluorocarbon Emissions Control Act, we conducted both simplified inspections (quarterly) and statutory inspections. These inspections showed an annual leakage of 167 tons of fluorocarbons, a volume that is below the reporting threshold.

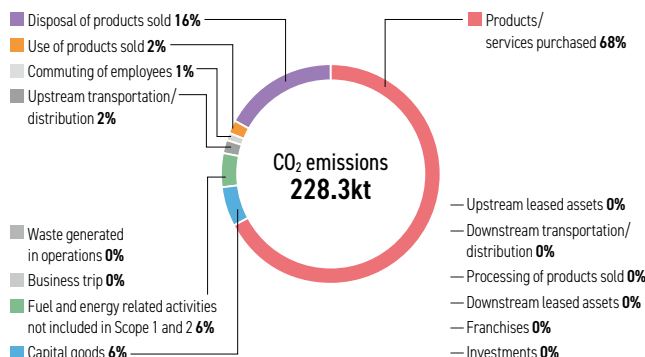
Reduction of CO₂ Emissions, Including Scope 3 Emissions

Maxell Group calculates total CO₂ emissions across the entire supply chain, including Scope 3 emissions. Scope 3 emissions refer to indirect emissions other than Scope 1 and Scope 2 emissions. For emissions calculations, starting from fiscal 2018, we aggregate and disclose performance data in accordance with the "Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain" issued by the Ministry of the Environment and the Ministry of Economy, Trade and Industry.

In fiscal 2022, as in fiscal 2021, our Scope 3 emissions decreased, primarily owing to the downsizing of the projector business,

which consumes significant amounts of electricity during use. This resulted in a decrease in the proportion of CO₂ emissions associated with the use of sold products. We aim to further reduce CO₂ emissions during product use by promoting energy-efficient design.

Breakdown of Scope 3 CO₂ emissions by category
(Excluding Maxell Izumi, Ube Maxell Kyoto and Maxell Kureha)



Action Plan

Strengthen environmental technologies and environmentally conscious products

KPI

Define standards to show the degree of contribution to social and environmental issues, and visualize the progress of sustainability
Incorporate specific measures in the next medium-term management plan

Reduction of Environmental Burden through Environmentally Conscious Products

At Maxell Group, we evaluate the quantitative environmental impact of new products at each stage of their life cycle in accordance with environmentally conscious design assessment criteria at the design and development stages, and register those that meet certain standards as "environmentally conscious products."

When a product does not meet the standards for "environmentally conscious products," we conduct CSR/CSV product assessments. Products deemed to meet certain criteria through this assessment are registered as CSR/CSV products that contribute to the achievement of the SDGs. In light of the current 100% CSR/CSV product registration rate, we are exploring new criteria to identify outstanding products that contribute significantly to major societal and environmental issues such as global warming, resource depletion, increasing waste generation, and ocean plastic pollution. The establishment of these new criteria will be aimed at raising awareness among design and development team members and boosting their motivation.

Recycling of Products

In accordance with the "Act on the Promotion of Effective Utilization of Resources," Maxell has joined an association called the Japan Portable Rechargeable Battery Recycling Center (JBRC) and displays recycling symbols on the lithium-ion batteries manufactured and sold, and promotes the use of the association's collection and recycling system to customers. In fiscal 2022, the amount of small lithium-ion batteries collected through the association's activities was 592 tons, which is an 11% decrease from the previous fiscal year, which also saw a decrease, but we believe that recycling is becoming a firmly ingrained habit among consumers.

With regard to projector recycling, in April 2019 we received approval from the Ministry of the Environment under the "wide area certification system" to promote recycling, and we have continued to collect projectors for recycling since then. As for hair dryers and

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shavers, they fall under the “Act on Promotion of Recycling Small Waste Electrical and Electronic Equipment,” and collection is carried out by each municipality.

Action Plan

Conserving resources and energy, and promoting the introduction of renewable energy

KPI

- (1) Domestic CO₂ emissions: Reduce by 50% by FY2030 (vs FY2013)
- (2) Renewable energy ratio: 15% by FY2030 (renewable energy consumption/total electricity) **NEW**
- (3) Begin considering reduction of waste plastic generated by business sites (chemical and material recycling), and incorporate related concrete measures into the next mid-term management plan

Helping to Prevent Global Warming

We have set “Conserving resources and energy, and promoting the introduction of renewable energy” as a materiality action plan. The plan includes a KPI of achieving a 50% reduction in CO₂ emissions by fiscal 2030 compared to fiscal 2013, and we are proactively working towards this.

Concrete measures undertaken by Maxell Group as part of plant electricity-saving measures include visualizing electricity consumption patterns to reduce wasteful electricity usage, improving operational efficiency through demand management at facilities, updating air conditioning systems, switching to LED lighting, and planting of green walls. In fiscal 2022, the Kobuchizawa Works, Kyoto Works, and Ono Works began solar power generation for in-house consumption. The Kyoto Works started generating 109 MWh from September, and the Ono Works started generating 114 MWh from January. Furthermore, in fiscal 2022, we started purchasing non-fossil certificates. These efforts allowed the Group to exceed the “Renewable energy ratio of 10% by fiscal 2030” KPI in fiscal 2022, and we therefore set a target of “Renewable energy ratio of 15% by fiscal 2030” as a new KPI.

Additionally, we have contracted with electricity companies we selected based not only on price but also on CO₂ emission coefficient trends in order to reduce our CO₂ emissions.

In fiscal 2022, domestic CO₂ emissions decreased 26% compared to the previous fiscal year, and overseas emissions decreased by 1.2%, resulting in an overall 17% reduction for Maxell Group as a whole (a 47% reduction from fiscal 2013). Note that the activities of Maxell Izumi, Ube Maxell Kyoto, and Maxell Kureha have been included in the calculations from fiscal 2022 onwards.

In addition to solar power generation for in-house consumption, the Ono Works is also selling electricity generated with its solar power facilities. In fiscal 2022, 1,428 MWh of electricity was generated, contributing to the prevention of global warming.

Ascertaining Transport-related Energy Intensity Per Production

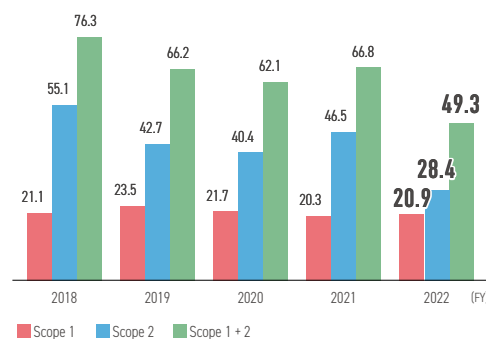
Since Maxell Group offers a wide range of products, we monitor the transport-related energy intensity per production at each manufacturing base.

In fiscal 2022, the total for all manufacturing bases increased by 5.7% compared to the previous fiscal year.

	Production amount (million yen)	Usage (thousand ton-km)	Intensity (ton-km/million yen)
FY2020	60,112	909.9	151
FY2021	58,186	1014.0	174
FY2022	51,919	958.0	184

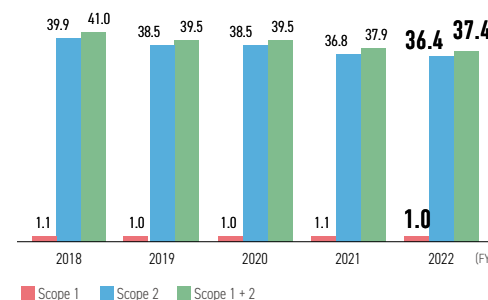
CO₂ emissions (Scope 1 and 2¹)

Domestic
(kt-CO₂)



*1 Scope 1: Direct emissions due to fuel combustion, etc. at business sites
Scope 2: Indirect emissions from purchased electricity, etc.

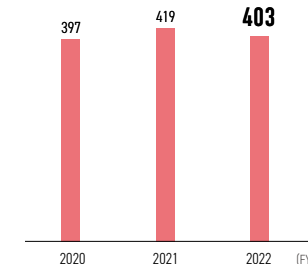
Overseas^{*2}
(kt-CO₂)



*2 Electricity/CO₂ conversion coefficient: UK 0.19, Malaysia 0.65, China 0.61, Indonesia 0.77 (unit is t-CO₂/MWh for all countries)

Energy intensity per production

Domestic + overseas
(kL/million yen)



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Waste Reduction and Recycling

Regarding the conservation of resources, which we have set as a materiality's action plan, in light of the recent emphasis on addressing the environmental issue of plastic waste, we plan to set KPIs for reducing plastic waste generated at our business sites. We are currently exploring chemical and material recycling, and intend to establish concrete targets for this in our next medium-term management plan.

Furthermore, at Maxell Group, we are working towards "Zero emissions"^{*1} by ensuring thorough waste separation, promoting the monetization of valuable waste through information sharing at each business site, and expanding and enhancing in-house intermediate processing. For example, in the lithium-ion battery manufacturing process, we separate waste such as end cuts generated in each production step and deliver these to the recycling companies to recycle copper, aluminum and rare metals such as cobalt from waste materials (43 tons in fiscal 2022). At the Ono Works, we also recycle silver oxide (2.6 tons in fiscal 2022). The amount of valuable waste generated domestically in fiscal 2022 was down 9% compared to the previous fiscal year. As a result of our intensified recycling efforts, domestic manufacturing bases achieved zero emissions for the 22nd consecutive year.

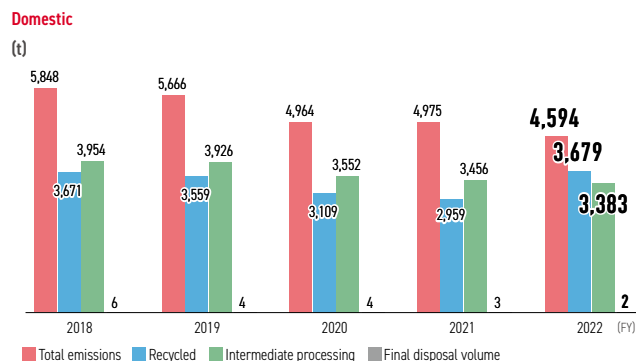
^{*1} Criteria for zero emissions (criteria for each business site): Final waste disposal volume less than 5 tons/year and final disposal ratio less than 1%/year

Water Consumption Reduction Initiatives

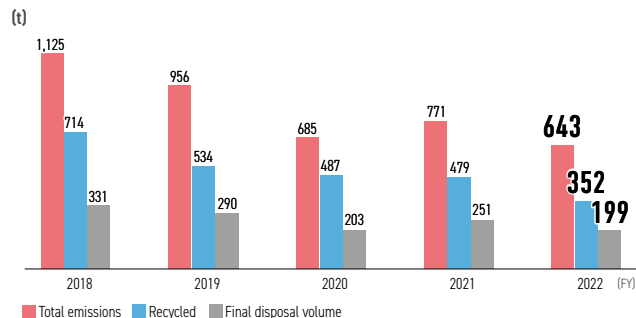
Maxell Group strives to reduce water consumption in manufacturing processes and conserve water resources through reutilization and other practices. For instance, at the Kyoto Works, a system to recover and reuse 100% of drain water was introduced in fiscal 2019 in response to increased steam usage due to the increased production of lithium-ion battery electrodes. This resulted in a saving of 40 km³ of water annually. In Maxell Group's domestic business sites, there was a 17% reduction in water usage compared to the previous fiscal year, and at overseas Group's business sites where water risk^{*2} is particularly high, there was a 5% reduction compared to the previous fiscal year. Overall, Maxell Group achieved a 15% reduction in water usage compared to the previous fiscal year.

^{*2} Water Risk Atlas (Aqueduct) by World Resources Institute (WRI)

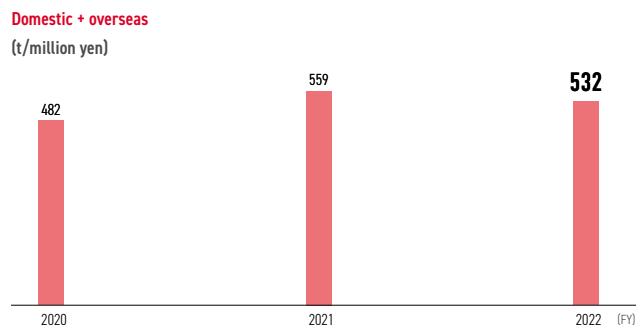
Situation of wastes, etc.



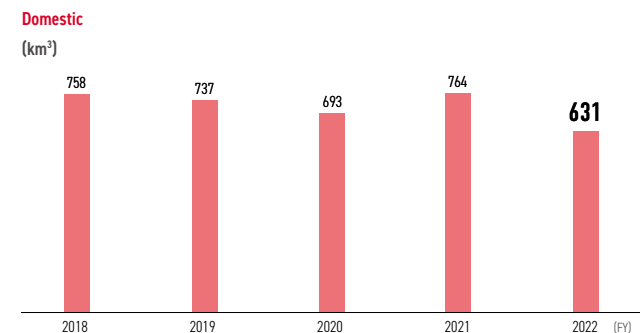
Overseas



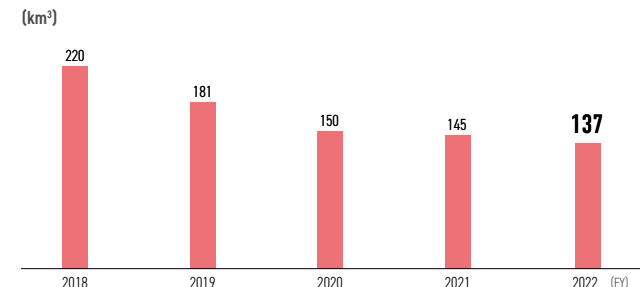
Waste intensity per production



Water consumption



Overseas



Water intensity per production

