

With the Environment



The Maxell Group views addressing the Earth’s environmental issues, including global warming, as an urgent task. Accordingly, we have introduced a Groupwide environmental management system and are advancing concerted efforts to address these issues.

Our Environmental Management Policy

Amid expectations for corporations to make greater contributions to realizing a sustainable society, as evinced by the Sustainable Development Goals of the United Nations and the adoption of the Paris Agreement, the Maxell Group must make an even greater contribution to preserving the Earth’s environment while continuing efforts to enhance its corporate value.

In accordance with its Environmental Conservation Action Guidelines,*1 the Group will promote efforts to address such issues as the prevention of global warming. Drawing on the opportunities presented by the transition to a holding company structure, the Group has placed the president in charge of operating environmental management systems. The Group is also steadily working to respond to laws and regulations, such as the REACH regulations and RoHS Directive, and strengthen its compliance. At the same time, the Group has been enhancing its focus on activities geared toward achieving environmental results in accordance with ISO 14001: 2015.

*1 https://www.maxell.co.jp/csr/csr2/csr_guideline.html (in Japanese only)

Preparation of the Maxell Group’s Long-Term CO₂ Reduction Plan

The Maxell Group is moving forward with energy-saving initiatives, with the aim of reducing CO₂ emissions 30% compared with fiscal 2013 levels by fiscal 2030. Currently we have established specific action plans through to 2030, and plan to continuously promote steps that will boost the possibility of achieving the target.

Also, in January 2019 we began participating in the Japan Climate Initiative (JCI).*2 Going forward, we will continue to examine the introduction of even more initiatives to achieve essentially zero CO₂ emissions by 2050.

*2 <https://japanclimate.org/english/>

The Maxell Group’s Fiscal 2020 Environmental Action Plan

Based on the idea that business performance and environmental activities are intrinsically linked, we have adopted achievement indices for our environmental activities (per unit of net sales basis: cost/net sales) linked to business operations and performance. By combining these indices with those that demonstrate improvement efforts (production output level basis: amount used/yield), we are working to further increase employee motivation to achieve our environmental targets. In fiscal 2019, we succeeded in carrying out improvement measures as initially planned; however, due to a deterioration in earnings, our performance on a per unit basis declined year on year.

Furthermore, in fiscal 2019 we recorded no major environment-related accidents, fines, or complaints. Also, following the enactment of the Law Concerning the Discharge and Control of Fluorocarbons, we carried out a legal inspection of our fluorocarbon emissions. Through this inspection, we discovered that our fluorocarbon emissions are at a level that does not need to be reported by law.

Quantitative Action Goals*3

Evaluation criteria: Target achieved Achievement rate of 95% or higher Achievement rate of less than 95%

No.	Action Target	Segment*4	FY2019			FY2020	
			Target	Result	Evaluation	Target	
1	Net sales ratio of eco-friendly, CSR/CSV products (%)	Japan / Overseas	95	97		95	
2	Percentage of eco-friendly, CSR/CSV products registered using new assessments (%)	Japan / Overseas	100	100		100	
3	Percentage of eco-friendly, CSR/CSV products brought to market (%)	Japan / Overseas	90	100		90	
4	“Eco mind” education enrollment rate (%)	Japan / Overseas	100	100		100	
5	Maintenance of zero emissions (annual) (target: manufacturing bases) (Quantity of final disposal: fewer than 5 tons; final disposal rate: less than 1%)	Japan	19	19		20	
6	Energy	Per unit of production x 10 ⁻³ (kL/million yen)	Japan / Overseas	379	412		416
		Plants in Japan	355	375		395	
	Per unit of net sales x 10 ⁻² (%)	Plants in Japan	147	163		161	
	Per employee and surface area (kL/person and km ²)	Offices in Japan and overseas	18	16		18	
7	Waste	Per unit of production x 10 ⁻⁴ (t/million yen)	Plants in Japan and overseas	447	497		482
		Per unit of net sales x 10 ⁻⁴ (%)	Plants in Japan and overseas	631	757		789
		Recycle rate (%)	Plants in Japan and overseas	70.0	73.1		70.0
8	Water use	Per unit of production x 10 ⁻² (m ³ /million yen)	Plants overseas	600	618		600
		Per unit of sales x 10 ⁻⁴ (%)	Plants overseas	486	518		540

Overseas factories: MDCN, WME, MTM, MEL (MMS), SLEI

*3 The internal production volume and net sales at overseas factories are converted to yen using a fixed exchange rate.

*4 Figures for Maxell Izumi Co., Ltd., Ube Maxell Kyoto Co., Ltd., and Maxell Kureha Co., Ltd. are not included.

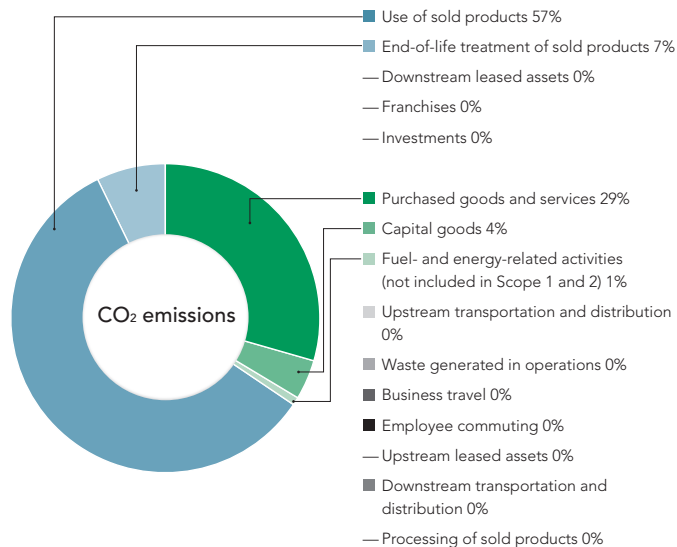
With the Environment

▲ Scope 3

The Maxell Group calculates the CO₂ emissions of its entire supply chain, including Scope 3 emissions. Scope 3 emissions are indirect emissions that are not included in Scope 1 and 2. We calculate our total Scope 3 emissions pursuant to 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.

CO₂ emissions in the use of sold products make up more than half of the total, and we will reduce these by promoting energy-saving designs.

Breakdown of Scope 3 CO₂ Emissions by Category



Accomplishments and Progress of Environmental Activities

▲ Prevention of Global Warming

The Maxell Group is promoting initiatives to conserve electricity, such as turning off lights, growing “green curtains” of plants, upgrading air conditioners and lights, efficiently operating equipment by managing demand, and creating visualizations of power consumption patterns.

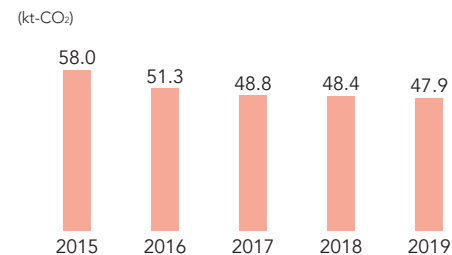
In fiscal 2019, we proposed a plan to systematically renew air conditioners and chillers particularly at Maxell’s Kyushu Works. By upgrading to energy-saving types and adjusting capacity to suit the current situations, we achieved 49 MWh of energy savings.

Furthermore, Maxell’s worksites in Ono, Fukuchiyama, and Kobuchizawa together produced 3,471 MWh of solar power during the year.

Domestically, in fiscal 2019 the Maxell Group’s CO₂ emissions decreased 1.0% from the previous year. Overseas, we achieved a 3.1% reduction, making for an overall reduction of 2.0%.

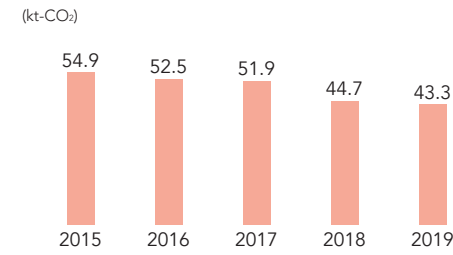
CO₂ Emissions (Scope 1, 2*)

Japan



*1 Scope 1: Direct emissions from burning fuel and other combustibles at worksites
Scope 2: Indirect emissions from purchased power and other sources

Overseas**



*2 Electrical power/CO₂ conversion factor: 0.36 t-CO₂/MWh for Japan, 0.487 t-CO₂/MWh for the United Kingdom, 0.656 t-CO₂/MWh for Malaysia, 0.745 t-CO₂/MWh for China, 0.726 t-CO₂/MWh for Indonesia

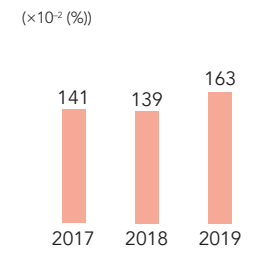


Japan is targeting short-term greenhouse gas reductions of 3.8% by 2020 compared with fiscal 2005 levels, and medium-term reductions of 26% by 2030 compared with fiscal 2013 levels. In fiscal 2019, the entire Maxell Group achieved CO₂ emission reductions of 59.2% compared with fiscal 2005 levels and 25.7% compared with fiscal 2013 levels.

In fiscal 2016, an evaluation system by business classification was added as part of the Energy Conservation Law. Maxell, Ltd. and Maxell Joei Tech Co., Ltd.* received an S rank rating as exceptional business operators, for the third and fifth consecutive years, respectively.

* Currently Maxell Frontier Co., Ltd.

Energy per Unit of Net Sales



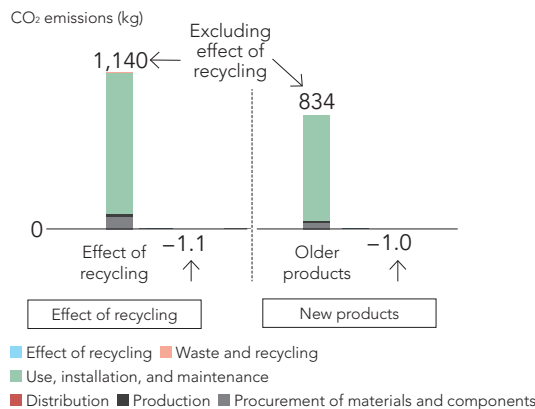


Accomplishments and Progress of Environmental Activities

▲ Visualization of Environmental Performance through LCAs

Based on life cycle assessments (LCAs), we conducted a comparison of projectors that use a laser light source in place of a mercury lamp and a conventional product (laser light source projector) in terms of CO₂ emissions, waste, and water use, and we worked to visualize environmental performance. The results showed that the new projector produced considerably fewer CO₂ emissions over its entire life cycle, from the manufacture of raw materials through production, distribution, use, and recycling. In addition, evaluations of waste and water use showed similar results.

Comparison of New and Older Products' Generation of CO₂ Emissions



Laser light source liquid crystal projector

▲ Reduction of the Environmental Burden through Environment-Friendly Products

Based on the criteria of our environmentally conscious design assessments, we quantitatively assess the environmental burden of products at each stage of their life cycle and register products that meet certain criteria as environment-friendly products. In fiscal 2019, we registered 16 environment-friendly products, such as the Luminous hair dryer, a laser light source liquid crystal projector, an in-car camera lens unit, and various kinds of tape, including double-sided tape and UV-cure type dicing tape.

Product Recycling

Under the Act on the Promotion of Effective Utilization of Resources, Maxell has joined the Japan Portable Rechargeable Battery Recycling Center (JBRC) and displays the recycle mark on lithium ion batteries that it produces to raise customers' awareness about the use of recovery and recycling systems. The amount of batteries recovered by manufacturer is not clear, but the amount of small-sized lithium ion batteries recovered continues to increase year by year. (According to JBRC data, 456 tons were recovered in fiscal 2019, up 56% year on year.)

In addition, we received approval to promote the recycling of projectors from the Ministry of the Environment in April 2019 under the National Permit System. Hair dryers and electric shavers are subject to the Act on Promotion of Recycling of Small Waste Electrical and Electronic Equipment and are collected by municipalities.

▲ Determining Transportation Energy Consumption per Unit of Production

Because it handles a wide variety of products, the Maxell Group determines transportation energy consumption per unit based on the production volume of each production base. Although product lineups changed and production volumes decreased, the total for all bases in fiscal 2019 increased 1.6% from fiscal 2018 due to the lack of change in the amount of energy used. Maxell is not a specified consigner under the Act on the Rational Use of Energy.

	Production (millions of yen)	Use (10,000 ton-kilometers)	Per unit (ton-kilometers/millions of yen)
FY2017	65,251	1,167.3	179
FY2018	58,919	1,138.1	193
FY2019	56,543	1,108.4	196

▲ Chemical Substance Management and Clean Technology

The Maxell Group manages the chemical substances used in its products in response to various international regulations, including the REACH regulations and RoHS directive. Specifically, we incorporate the latest information in our Control Standard for Handling Chemical Substances in Products, Parts and Materials* and promote thorough chemical management activities. Batteries are not subject to the RoHS directive, and as we are taking steps to use zero mercury, all types of primary and rechargeable batteries manufactured and sold by Maxell satisfy the RoHS directive. For oxygen sensors that are excluded from the RoHS directive, we have succeeded in eliminating lead using proprietary technology.

In addition, we manage the storage and processing status of equipment using PCBs. In fiscal 2019, we processed this equipment at the Kyoto Works, the Tsu Plant, and the Kameyama Plant. Going forward, we will gradually process the equipment using PCBs that is awaiting processing.

* https://www.maxell.co.jp/csr/chemical_control/index2.html (in Japanese only)



Accomplishments and Progress of Environmental Activities

▲ Waste Reduction and Recycling

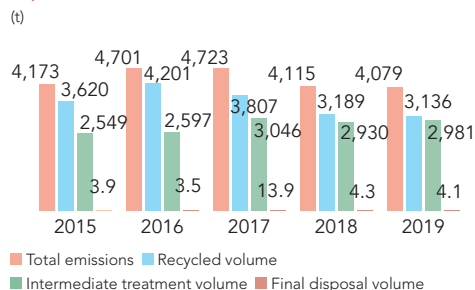
The Maxell Group is taking thorough measures to sort waste, promote the recycling of waste through the sharing of information between worksites, and expand in-house intermediate waste treatment with the aim of achieving zero emissions.*1 For example, in the manufacturing process of lithium ion batteries we separate the electrode material and coating residue emitted in each process and deliver them to appropriate service providers to recycle the rare metal cobalt as well as copper and aluminum, among others (248 tons in fiscal 2019). At the Ono Works, we also recycled silver oxide (2.6 tons in fiscal 2019).

In fiscal 2019, the amount of waste and recyclable materials the Group generated in Japan declined 0.9% compared to the previous fiscal year. However, the Group's manufacturing bases in Japan achieved zero emissions for the 19th consecutive year, thanks to stronger recycling efforts.

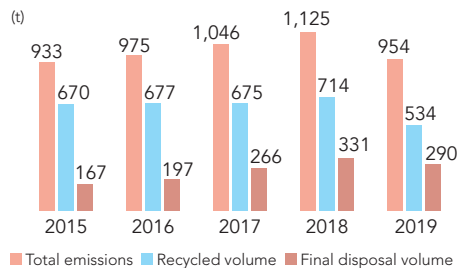
*1 Zero emissions criteria (evaluated by each worksite): a final waste disposal amount of fewer than five tons per year and a final disposal rate of less than 1% per year

Waste Treatment

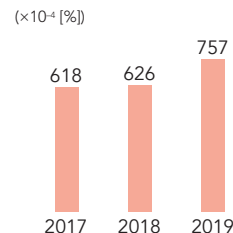
Japan



Overseas



Waste per Unit of Net Sales

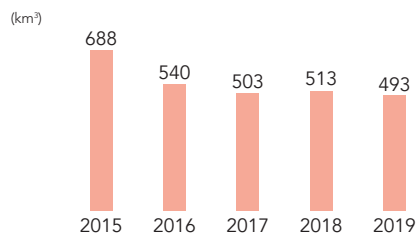


▲ Measures to Reduce Water Use

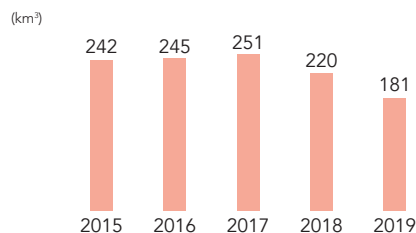
The Maxell Group strives to preserve water resources, including by reducing the amount of water used in manufacturing processes and recycling used water. At the Kyoto Works, we installed a system capable of recovering 100% of drain water in step with an increase in the use of steam with an increase in production of electrodes for lithium ion batteries. This enabled us to save 59 km³ of water annually. Group worksites in Japan decreased their use of water 3.9% year on year, while overseas worksites reduced their use 17.7%, resulting in an 8.1% year-on-year decline for the Maxell Group as a whole.

Japan

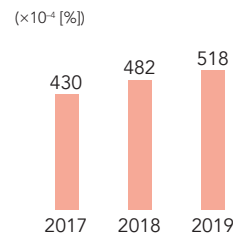
Water Use



Overseas



Water Use per Unit of Net Sales



▲ Biodiversity

The Maxell Group's biodiversity efforts in fiscal 2018 involved the signing of an agreement to enter into the Japan Business and Biodiversity Partnership. In addition, as part of our environmental preservation activities, we participated in a bamboo forest maintenance activity of the Council for Measures against Groundwater Use, in Oyamazaki, Kyoto Prefecture, as well as "Lake Biwa Invasive Species Removal Day," an event supported by the local government in Shiga Prefecture.

In fiscal 2019 we participated in many types of activities, but we restricted activities in fiscal 2020 due to COVID-19. Activities other than cleanups have been suspended for the time being.

Furthermore, as a contribution to achieving the SDGs, we became an affiliated partner of the Blue Seafood Guide, an activity by Sailors for the Sea Japan. As part of this membership, we are working actively to incorporate Blue Seafood*2 items in the menus at our employee cafeterias. Currently, we provide Blue Seafood items at the Kyoto Works, Kawasaki Works, and Kobuchizawa Works. We also promote local food production for local consumption at the Kyoto Works.

*2 Seafood products that are comparatively rich in natural resources <http://sailorsforthesea.jp> (in Japanese only)



Menu featuring Blue Seafood offered at the employee cafeteria of Maxell's Kyoto Works