Environment

Environmental Management

Piolax Global Environmental Policy

The Piolax Group updates its Global Environmental Policy every three years to ensure that it reflects environmental trends. In January 2023, we created a new environmental policy, clarifying that our business activities contribute to natural capital and the SDGs.

Its Action Guidelines refer to risks and opportunities based on the TCFD Recommendations, which we support as a framework for ESG information disclosure, as well as our efforts for carbon neutrality. We will comply with environmental laws and regulations and work to minimize the impact of our corporate activities on the global environment.


PIOLAX
Environmental Policy
Basic Policy
Slogan
We will grow in harmony with the environment.
Action Guideline
<Major Actions>
June 25, 2024
President:

June 25, 2024
Satoshi Yamada, President

Targets, Results and KPIs

The Piolax Group identifies energy, emissions to the atmosphere, and waste as critical environmental issues. We are committed to the 3Rs (Reduce, Reuse, Recycle) in our business operations to achieve our reduction targets for greenhouse gases (GHG*) and waste across the entire supply chain. Our goal is to mitigate and adapt to climate change and to make effective use of resources, including water.

In 2021, we created a roadmap for achieving carbon neutrality by 2050 within our business areas in Japan. In 2024, we expanded the target areas to include overseas business operations, setting medium- to long-term greenhouse gas reduction goals for the entire Group to drive our business activities forward.

Medium- to Long-Term Goals and Roadmap for Carbon Neutrality

Carbon neutrality goals and achievements	
Long-term goal	Achieve carbon neutrality for Scope 1 and 2 CO_2 emissions by FY2050.
Medium-term goal	Reduce Scope 1 and 2 CO_2 emissions by 46% from FY2019 by FY2030.

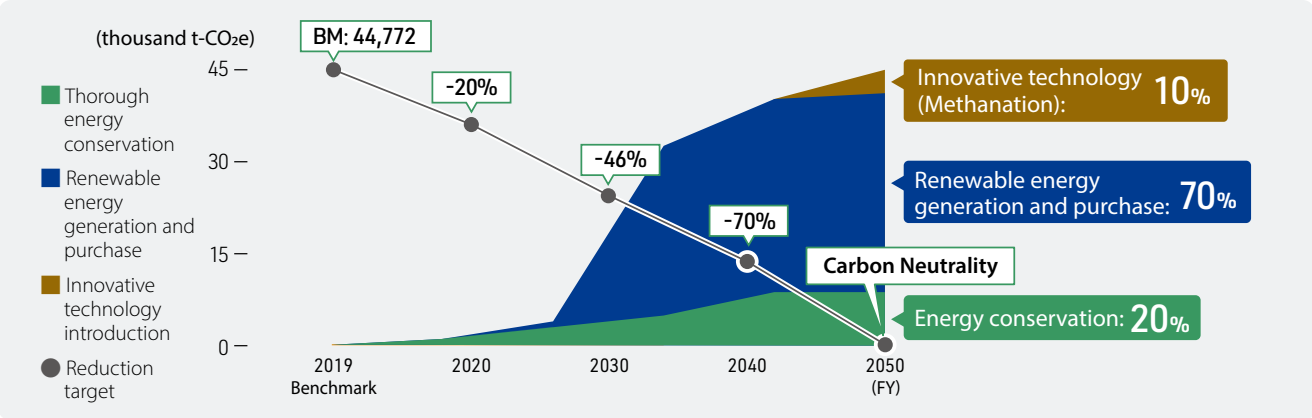
Entity to work on: Piolax Group

Our medium- to long-term goals are to reduce Scope 1 and 2 emissions from Japanese and international business operations by 46% by FY2030 and achieve 100% reduction by 2050, using the FY2019 emission's level as the benchmark (BM). We plan to achieve this through energy-saving initiatives, the introduction of renewable energy, and the accumulation of innovative technologies. In FY2023, we achieved a 38% reduction in emissions compared to FY2019 (Scope 2: market-based criteria), meeting our target.

We will consider reducing Scope 3 emissions across the supply chain in the future.

Environmental Management

Roadmap for Carbon Neutrality



Entity to work on: Piolax Group

P.29 Activities toward Carbon Neutrality

Medium-Term Environmental Targets and KPIs

As a group, we have set the 8th Medium-Term Environmental Targets for a three-year period starting in 2023. These targets apply to Piolax and its subsidiaries in Japan.

P.34 Progress in GHG Reduction in Business Activities

P.37 Total Waste Discharge and Recycling Rate

P.37 Effective Use of Resources

8th Medium-Term Environmental Targets

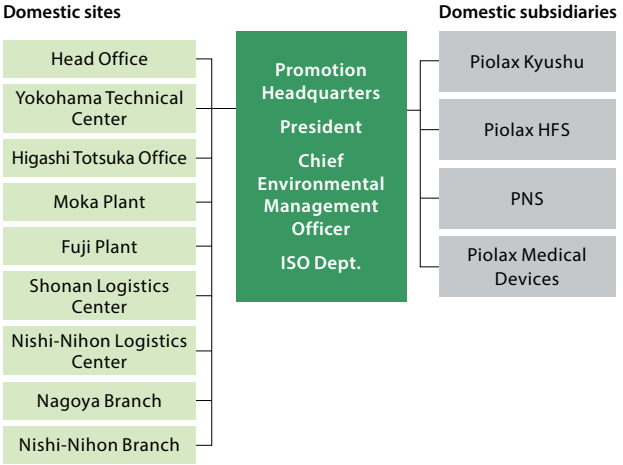
Priority activities	KPIs	Targets by 2025
Thorough energy conservation	Reduction in Scope 1 and 2 emissions	20% reduction (from FY2019)
Activities toward carbon neutrality		
Improvement rate of energy efficiency and efficient use of natural resources	Reduction of electricity consumption per unit production	3% reduction (from FY2022)
Adaptation to a circular society	Reduction of waste emissions	6% reduction (from FY2022)
Waste reduction		
Adaptation to a circular society	Improvement of recycling rate	80%

Entity to work on: Piolax and its subsidiaries in Japan

Environmental Promotion System

Each of our offices and subsidiaries in Japan has a meeting structure led by a person responsible for environment and secretariats to promote environmental measures. This meeting structure oversees and operates the management system.

Environmental Promotion System in Japan



Operation of Environmental Management Based on ISO14001

We operate an environmental management system based on ISO14001, conducting regular internal audits and third-party reviews, with the results reported to management through management reviews.

Piolax obtained ISO14001 certification in April 2002. Since then, as of April 2024, 13 out of our 15 manufacturing sites in Japan and overseas, or 87%, have been certified. We plan to further expand this coverage in the future.

Environmental Management

ISO14001 Certification Status

	As of April 2024
Total number of manufacturing sites	15
Number of ISO14001 certified sites	13
Coverage rate	87%

Organizations Registered for International Certification
https://www.piolax.co.jp/en/company/touroku/

Environmental Patrols

The Piolax Group conducts environmental patrols led by environmental management officers at sites where there have been significant changes in environmental impact. In FY2024, we plan to conduct patrols of the new Plastic Building, which has commenced operations at the Moka Plant.

Environmental Education

We conduct training and e-learning sessions for all employees to deepen their understanding of business activities and environmental issues. This initiative aims to achieve our environmental goals as a united group.

Environmental Education

Types of training	Target audience	Overview
SDGs	New employees	Group discussions and other training centered on "Our Role in SDGs"
Sustainability	Employees of Piolax and its subsidiaries in Japan	E-learning education on trends in sustainability and our company's initiatives
Environmental awareness	All employees	Awareness raising of environmental policies and each site's environmental activity plans
Biodiversity awareness	Employees of Piolax and its subsidiaries in Japan	Classroom-style education on biodiversity and its impact on business activities

Compliance with Environmental Laws and Regulations

In 2022, one of our subsidiaries in China received a notice from the Dongguan Environmental Protection Bureau regarding the reporting of the disposal amount of metal container waste. A fine of 190,000 yuan was paid following the administrative penalty notice. The issue was promptly corrected, and the reporting is now being handled appropriately. Apart from this incident, there have been no significant legal violations, fines, penalties, or spills at our business sites in Japan or overseas in the past three years. No legal complaints regarding environmental issues have been filed against us.

We will continue to ensure strict compliance with environmental laws and regulations.

Green Procurement

Our Group's Green Procurement Guidelines are intended to reduce environmental impact throughout the entire product lifecycle, from raw material procurement to manufacturing, sales, use, disposal, and recycling. We promote the procurement of environmentally friendly products, components, raw materials, and auxiliary materials.

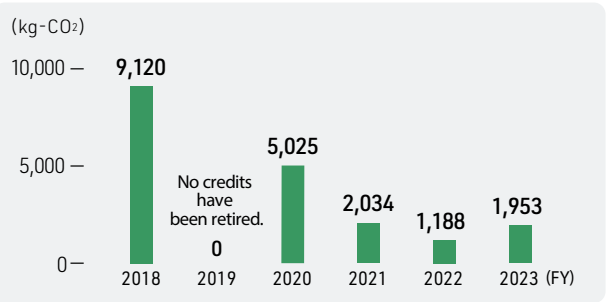
Outline of Green Procurement Guidelines

1) Procure products that comply with the laws and regulations of the countries and regions where we operate as well as the Piolax Environmental Policy.
2) Procure products with low environmental impact.
3) Prioritize procurement from companies that actively engage in environmental considerations.

Green Procurement Guidelines
https://www.piolax.co.jp/resources/pdf/csr/green_guideline_2024.pdf

In recent years, we have been purchasing carbon offset uniforms. The carbon credits for this purchase in FY2023 were generated by the fuel cell project of Green Linkage Club, an entity commissioned by the Ministry of Economy, Trade and Industry.

Carbon Offset Amount for Uniforms



Environmental Management

Collaboration with External Organizations

As part of our efforts to reduce CO_2 emissions, we are exploring the use of biomass materials and expanding the recycling of resin materials. Food packaging bags and detergent containers, which have a silver aluminum inner layer and a plastic outer layer, have been posing a significant recycling challenge to the industry due to the difficulty in separating the metal from the plastic.

The Advanced Material Recycle and Innovation Alliance was established in 2022 as a joint industry-government-academia effort to find solutions to such difficult-to-recycle plastic materials and implement them in society.

Piolax is participating in this project and considering the use of factory waste as packing materials for daily necessities (PIR[*1]). We are also considering the use of recycled materials from discarded automobiles (PCR[*2]). To realize a resource recycling society, we will continue our research in collaborating with other industries.

*1 PIR (Post-Industrial Recycle): Recycling and reusing materials generated in the manufacturing process of products before they are released on the market

*2 PCR (Post-Consumer Recycle): Recycling and reusing products or materials discarded by consumers after use.

Prototypes utilizing waste materials from packaging manufacturing process

Environmentally Friendly Products

The Yokohama Technical Center plays a central role in developing products that contribute to the environment. Our criteria for eco-friendly products include "light weight, reduced number of components, integration, and selecting materials that are compatible with a recycling-oriented society."

We are advancing initiatives aimed at realizing a sustainable society across all processes, including reducing CO_2 emissions during the manufacturing process, reducing work load during part installation, and designing for easier disassembly.

Development of Fasteners

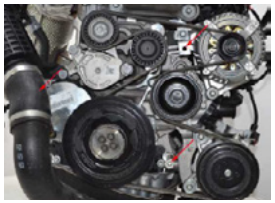
Insulator Clip for New Exterior Noise Regulations

To encourage product recycling, we are reviewing the materials we use to select easy-to-recycle ones.

A loud noise is generated by the rotation of a belt and pulleys, and insulators compliant with the new exterior noise regulations are used to control the noise. We have developed clips to attach such insulators to irregular-shaped engines. They use recycling-promoting materials and are designed for easy disassembly.

We will continue to promote a recycling-oriented society from the material level.

Conventional product



Developed product

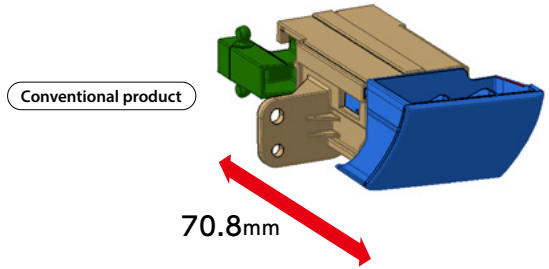
Development of Open & Close Mechanism Parts

Downsizing of Open-Close Operation Parts (Saving Resources Through Reducing Size, Weight and Workload, as Well as Through Components Standardization)

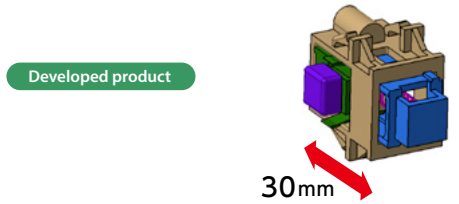
This part is used to open and close storage boxes, such as glove boxes. The conventional product size was 70.8 mm, but we have developed a new product that is 30 mm, less than half the size. Additionally, standardizing components eliminated the need to produce molds with slightly different shapes, leading to resource savings. The product can also be attached with a single touch. This product reduces size, weight, and workload.

Schematic

Conventional product



Developed product

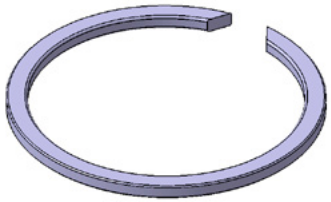


Environmental Management

Development of Powertrain Parts 1

Snap Ring (Reducing Material Waste)

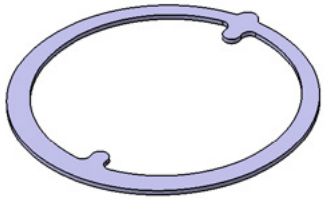
Snap rings used in reduction gears were conventionally manufactured by pressing. However, a change to a coiling production method, along with an adjustment of the part specifications, was proposed and adopted. This eliminated scrap, resulting in an 80% reduction in material waste.



Development of Powertrain Parts 2

Shim (Reducing CO_2 Emissions)

Shims used in reduction gears were conventionally made of spring steel. Instead, the use of high-tensile steel plate was proposed after adjusting the part specifications. This proposal is expected to undergo some testing before it is adopted. Switching to steel plates will eliminate the heat treatment process, contributing to a reduction in CO_2 emissions.

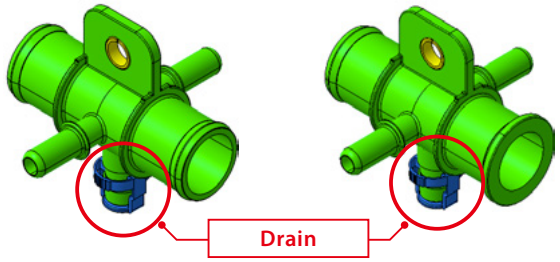


Development of Fluid Control Parts

Drain-Equipped Joint for Battery Cooling Pipes (Reducing Weight and Workload)

We replaced conventional heavy metal pipe fittings with resin ones, ensuring the required strength and optimizing the thickness for productivity. This resulted in weight reduction.

The conventional metal screw cap of the internal coolant drain mechanism for maintenance was replaced with a plastic quick connector. This has not only reduced weight but also improved operational efficiency. Multiple shapes can be molded with a single mold by replacing components, reducing the use of mold materials.



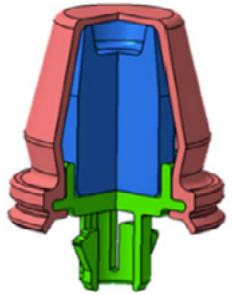
CASE Products — Light weight

Damping Stopper

Our efforts to create new value pursuing weight saving are not limited to our product level. We are making such proposals to customers at the "vehicle level," too.

As a solution for muffled noise in the low-frequency band in vehicles, we are developing a damping stopper which uses a material with a damping function.

Using materials with damping functions in the stopper rubber, this product will make the dynamic damper unnecessary, achieving a weight reduction of 0.3 kg to 1.8 kg per vehicle.



CASE Products — Reducing material waste

Bus Bar

Recent mobility devices, including EVs, use many electronic and electrical units. Bus bars are attracting attention as conductive functional parts for these units. Compared to conventional wire harnesses, they are believed to be space-saving and highly efficient.

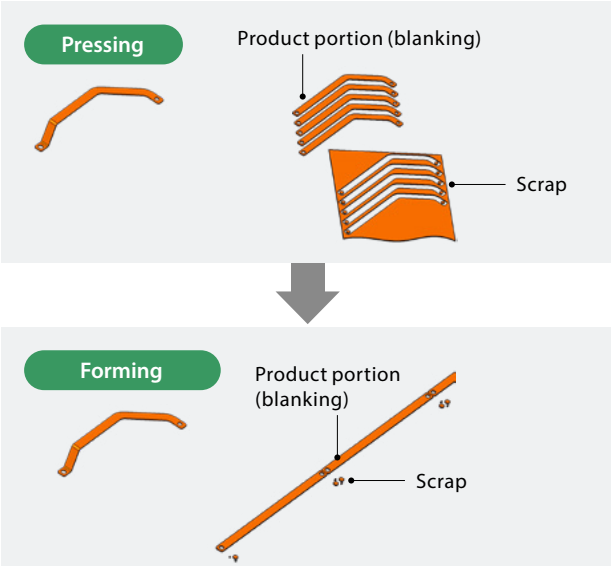
Bus bars are primarily made of copper due to its excellent conductivity. However, most bus bars are punched out from copper plates using a press, generating a significant amount of scrap. To use materials thoroughly, we have started producing them with forming machines.

By bending plates in the direction of the plate width, which

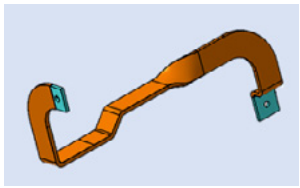
Environmental Management

would be impossible with a press, we have successfully reduced the scrap generated from the base material to less than 5%.

Forming Bus Bars



Bas bars produced with a forming machine



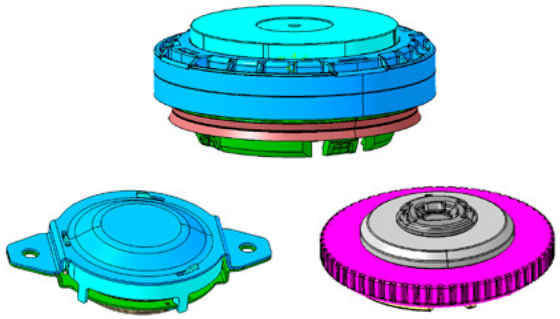
CASE Products

Light weight / Simplified assembly

Gas Vent Valve for EV Battery

In the rapidly expanding EV market, automobile manufacturers are paying close attention to battery safety and researching safety devices.

To meet this demand, we have developed gas vent valves for EVs, leveraging our long-cultivated fuel valve technology. Conventional valves are bolted to the battery casing, but our new valves can be installed without bolts, reducing weight and simplifying assembly work. Additionally, we are developing variations that will withstand higher gas flow and higher temperatures, to meet various needs.



Gas vent valves for battery

Activities toward Carbon Neutrality

Basic Approach

As the Piolax Group, we recognize that climate change is such a serious social issue that it is our responsibility to address this global problem through collaboration with suppliers and customers. We work to mitigate and adapt to climate change, protect the environment, and prevent environmental pollution in all our business areas. We are committed to improving environmental performance and continuously enhancing our environmental management system.

Response to TCFD Recommendations

In line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), we conducted scenario analyses for Japan, North America including Mexico, China, and the medical device business. Our business strategies are based on various scenarios for future climate change predictions.

Recognizing the uncertainties in each scenario due to changes in various factors, we believe that clarifying the risks and opportunities of each scenario will enable sustainable corporate management. We have clearly articulated our strategy towards the electrification of the automotive industry. We are working on infrastructure development to enhance the resilience of our business sites and are trying to reduce risks and create opportunities for further product development.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Overview of Our Efforts on Each TCFD Recommendation

Requirements of TCFD Recommendations and Piolax's Responses

	Governance	Strategy	Risk management	Metrics and targets
Requirements of TCFD Recommendations	The organization's governance around climate related-risks and opportunities	The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	How the organization identifies, assesses, and manages climate-related risks	The metrics and targets used to assess and manage relevant climate-related risks and opportunities
Piolax's responses	● The Sustainability Committee, chaired by the President and composed primarily of Directors, deliberates on sustainability issues, including responses to climate change. ● After deliberation, the company-wide policies and objectives, as well as specific measures to address the risks and opportunities related to climate change, are finalized by the Board of Directors.	● We identified risks and opportunities for our core business related to automobiles on a timeline extending to 2050. ● We announced goals for achieving carbon neutrality by 2050 within our business areas in Japan and overseas.	● The Sustainability Committee identifies risks and opportunities related to climate change that may impact our business activities, formulates response plans based on their significance, and monitors progress. ● We work to manage risks and opportunities related to climate change appropriately by considering and constantly reviewing medium- to long-term response plans.	● We aim to achieve carbon neutrality for Scope 1 and 2 CO_2 emissions by FY2050. ● We will reduce Scope 1 and 2 CO_2 emissions by 46% compared to FY2019 levels by FY2030. ● Our reduction targets for Scope 3 emissions are under consideration. (Entity to work on: Piolax and its subsidiaries in Japan and overseas)

Information Disclosure Based on the Recommendation of TCFD (Updated on April 23, 2024)
https://www.piolax.co.jp/resources/pdf/csr/PIOLAX_TCFD_2024_EN.pdf

Activities toward Carbon Neutrality

Scenario Analysis and Risks/Opportunities

Automotive Parts

Category	Procurement				Manufacturing and logistics				Development and sales			
	Impact on business		Impact	Time frame	Impact on business		Impact	Time frame	Impact on business		Impact	Time frame
Transition risks	• Soaring raw material and transportation costs due to the introduction of carbon taxes and energy conversion at suppliers	1.5℃	Large	Medium to long term (China: short to medium)	• Rise in capital investment and improvement cost related to manufacturing process decarbonization	1.5℃	Medium to large	Short to medium	• Review of product development and sales strategies in response to rapid electrification	1.5℃	Large	Medium to long (China: short to medium)
	• Loss of market due to non-eco raw materials				• Rise in energy cost with review of heat sources for manufacturing process decarbonization and use of green electricity				• Drop in orders for existing products with increased electrification			
	• Drop in demand for materials for existing products with increased electrification, rise in material cost and difficulty in procurement				• Rise in wastewater and waste treatment costs with stricter environment-related regulations				• Rise in new product development cost and capital investment to address CASE			
					(US, China) • Increased response costs due to strengthened or changed government environmental policies		Large	Medium to long	• Drop in sales with reduced new car sales due to domestic population decrease and spread of MaaS		Large (China: medium)	Medium to long

Degree of impact Large: A failure to respond has a great impact on the survival and growth of the company and its businesses.
Medium: A failure to respond poses a limited impact and does not affect the survival and growth of the company and its businesses.

Medical Devices

Category	Procurement				Manufacturing and logistics				Development and sales			
	Impact on business		Impact	Time frame	Impact on business		Impact	Time frame	Impact on business		Impact	Time frame
Transition risks	• Soaring raw material and transportation costs due to the introduction of carbon taxes and energy conversion at suppliers	1.5℃	Large	Medium to long term	• Increased capital investment and improvement costs related to decarbonization of manufacturing processes	1.5℃	Large	Short to medium	• Increase in R&D and commercialization costs for a recycling-oriented society	1.5℃	Large	Medium to long
	• Increased costs associated with purchasing restrictions and securing procurement routes due to restrictions on raw materials used				• Increased cost of reforming hydrophilic treatment due to set targets for reducing chemical use				• Review of sales strategies to meet customer demands for environmental responsiveness			
	• Material cost increase and procurement difficulties due to raw material change in response to resource recycling								• Damage to brand image due to delays in climate change action		Medium	

Degree of impact (on our medical device business, not on the entire Group)
Large: A failure to respond has a great impact on the survival and growth of the company and its businesses.
Medium: A failure to respond poses a limited impact and does not affect the survival and growth of the company and its businesses.

Activities toward Carbon Neutrality

Automotive Parts

Category	Procurement	Manufacturing and logistics	Development and sales
Opportunities	• Review raw materials (change to eco-friendly or recycled materials), suppliers, product designs, and others to strengthen our response to decarbonization and resource recycling, thereby differentiating ourselves from our competitors. (US, China) • Increase local procurement of raw materials to strengthen competitiveness. (Realize cost reduction and stable procurement.)	• Accelerate efforts to improve productivity through factory automation and decarbonize domestic facilities.	• Promote and accelerate co-creation activities with customers to increase sales of products for CASE. (US, China) Strengthen sales expansion to non-Japanese OEMs and increase market share focusing on fastener parts, etc., which are less affected by electrification
Measures	• Resin materials: Use of bioplastics • Metal materials: Replacement with low-CO_2 materials • Cost reduction through procurement of locally produced goods • Reduction of energy used for transport • Purchase of decarbonized energy sources	• Moka Plant renewal to improve productivity • Thorough energy conservation • Reduction of energy consumption by replacing utility system • Improvement of thermal efficiency of injection molding machines • Gas replacement in heat treatment furnace (LPG → LNG)	• Development and sales of new products for CASE • Increase of existing market share mainly in fuel and powertrain system components (Short-term response to demand for ICE vehicles)

P.24 Roadmap for Carbon Neutrality

P.13 Case Initiatives

Medical Devices

Category	Procurement	Manufacturing and logistics	Development and sales
Opportunities	• Review raw materials (change to eco-friendly or recycled materials), suppliers, and others to strengthen our response to decarbonization and resource recycling, thereby differentiating ourselves from our competitors.	• Shift operations and manufacturing sites to more eco-friendly practices quickly to improve competitiveness.	• Develop and market eco-friendly products that capture the growing environmental awareness of customers, thereby improving competitiveness and differentiating ourselves from our competitors.
Measures	• Select and secure manufacturers to sustainably procure raw materials and supplies for eco-friendly products.	• Shift to renewable energy. • Create synergies through co-creation activities with companies that lead the way in environmental responsiveness.	• Promote the development and design of packing materials that reduce waste (smaller, thinner, optimized shape) and new products that do not use regulated materials. • Develop innovative products that, for example, can shorten procedure time and reduce the burden on patients as well as energy consumption in the medical setting. • Develop high value-added products that contribute to "standardize procedures," which directly relates to the success rate of surgery.

Activities toward Carbon Neutrality

Automotive Parts

Category	Chronic risk				Acute risk			
	Impact on business		Impact	Time frame	Impact on business		Impact	Time frame
Physical risks	Rise in air conditioning cost with temperature rise and health hazards to employees	4℃	Medium (China: medium to large)	Long term (Mexico: short)	Delays in responding to increased disruptions in the transportation process Impact on plant operations due to supply chain disruptions caused by increased natural disasters	4℃	Medium (US: large)	Short to medium
	Degradation of raw material and product quality with temperature and humidity rise				Decrease in orders due to delay in responding to changes in performance requirements from automakers as a result of rising temperatures Market shrinking and decrease in orders due to new pandemic-related behavioral restrictions			
	Shutdown of operations and vessels due to inundation of coastal sites by rising sea levels				Delay in reviewing procured materials in response to performance requirements from automakers due to rising temperatures		Medium to large	Medium to long
					Increased procurement/logistics costs due to increased natural disasters			
					Shutdown of plants and warehouses due to abnormal weather and increase in repair cost			
	Suspension of operations due to decrease in available water resources caused by rapid drop (or depletion) of groundwater level		Medium (Mexico: large)		Destabilization of energy supply due to abnormal weather		M to L (CHN: L)	
Measures	• Infrastructure development to strengthen plant and warehouse resilience • Improvement of work and material storage environment through thermal management (room temperature and humidity) • Introduction of water circulation system through water management • Review of risk assessment with BCP database including supply chain				• Reduction of inventory cost through increased use of locally produced goods • Stable procurement through supply chain diversification and raw material standardization • Infrastructure development to strengthen plant and warehouse resilience (US, China) • Promote local production and consumption, and enhance cooperation with business partners in view of geopolitical risks.			

Activities toward Carbon Neutrality

Medical Devices

Category	Chronic risks				Acute risks			
	Impact on business		Impact	Time frame	Impact on business		Impact	Time frame
Physical risks	• Rise in air conditioning cost with temperature rise and health hazards to employees	4℃	Medium	Long term	• Delays in responding to increased disruptions in the transportation process • Impact on plant operations due to supply chain disruptions and traffic infrastructure disruptions as well as difficulty in securing labor force, caused by increased natural disasters	4℃	Large	Short to medium
					• Market shrinking and decrease in orders due to new pandemic-related behavioral restrictions		Medium	
	• Degradation of raw material and product quality with temperature and humidity rise				• Increased procurement/logistics costs due to increased natural disasters		Middle to large	Medium to long
					• Shutdown of plants and warehouses due to abnormal weather and increase in repair cost			
					• Destabilization of energy supply due to abnormal weather			
Measures	• Infrastructure development to strengthen plant and warehouse resilience • Maintenance of work environment through thermal management				• Reduction of inventory cost through increased use of locally produced goods • Stable procurement through supply chain diversification and raw material standardization • Infrastructure maintenance and improvement to strengthen the resilience of plants and warehouses, including private power generation • Formulation, maintenance, and management of BCP (including its training) • Strengthen logistics in product transportation (improve efficiency, consider alternative routes in case of disaster and secure them in advance)			

P.66 Preparation for Disaster Risks

Activities toward Carbon Neutrality

GHG Emission Reduction Targets and Results in Business Activities

To achieve carbon neutrality in Scope 1 and 2 emissions within our business areas, we aim to reduce CO_2 emissions by 46% by FY2030 and 100% by FY2050, using FY2019 as a benchmark.

As an intermediate step, we are implementing measures to achieve zero Scope 2 CO_2 emissions by 2030 for our Japanese Group and by 2040 for our overseas Group.

To increase our use of renewable energy, in addition to introducing solar panel power generation, we switched to carbon-free electricity contracts at our manufacturing sites in Japan. Furthermore, we have initiated carbon offsetting through green power certificates at three overseas bases (India, Indonesia, and Mexico), expanding our use of renewable energy to 29,371 MWh. As a result, we achieved a 38% reduction in CO_2 emissions for FY2023, surpassing our target of a 13% reduction. Additionally, we are undergoing third-party verification to assess the validity of our Scope 1, Scope 2, and renewable energy quantities.

Notably, since FY2022, we have reported non-energy GHG emissions separately in Scope 1.

As part of our activities towards carbon neutrality, we set a target of a 13% reduction in CO_2 emissions in our 8th Medium-Term Environmental Targets for our business areas in Japan, yet we achieved a 60% reduction. Additionally, we achieved a 3.2% reduction in energy consumption per unit production, surpassing the target of a 1% reduction. We will continue to accelerate our efforts towards carbon neutrality.

Carbon Neutrality Targets

Medium- to long-term targets	FY2023 results
We will achieve carbon neutrality for Scope 1 and 2 CO_2 emissions by FY2050.	38% reduction (from FY2019)
We will reduce Scope 1 and 2 CO_2 emissions by 46% compared to FY2019 levels by FY2030.	

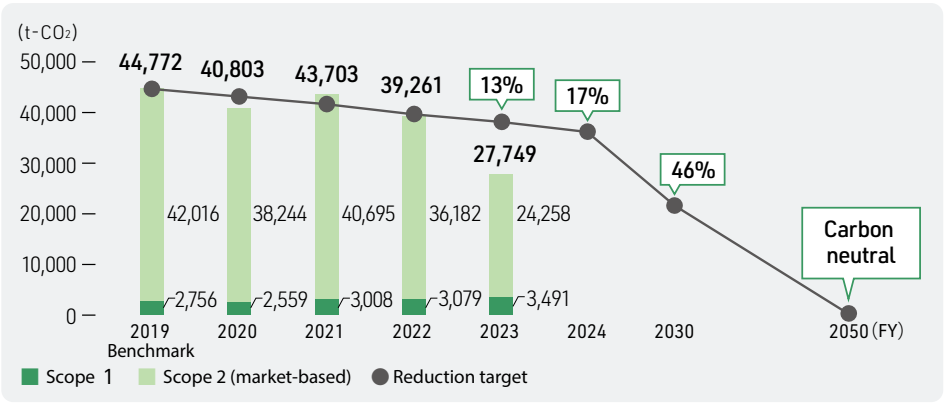
Entity to work on: the Piolax Group

8th Medium-Term Environmental Targets

KPIs	Targets by FY2023	FY2023 results
Emission reduction in Scopes 1 and 2	13% reduction (from FY2019)	60% reduction (from FY2019)
Reduction of electricity consumption per unit production	1% reduction (from FY2022)	3.2% reduction (from FY2022)

Entity to work on: Piolax and its subsidiaries in Japan

Changes in Scope 1 and 2 Emissions



(Unit: t-CO_2)

	FY2019	FY2020	FY2021	FY2022	FY2023
Scope 1[*1]					
Energy-origin emissions	2,756	2,559	3,008	3,064	**3,118**
Non energy-origin emissions	–	–	–	15	**373**
Scope 2[*2]					
Location-based	45,016	40,389	40,676	34,707	**37,800**
Market-based	42,016	38,244	40,695	36,182	**24,258**
Total of Scopes 1 and 2					
Market-based	44,772	40,803	43,703	39,261	**27,749**

Entity to work on: Piolax Group

*1 Scope 1: GHG emissions directly emitted by the Piolax Group's corporate activities, as defined by the GHG Protocol. Since FY2022, data from non-energy sources has been included in the calculation. The scope of calculation for FY2023 was reviewed. The emission factors for FY2023 were calculated based on the GHG Emissions Calculation and Reporting Manual (Ver 5.0) and the Act on the Rational Use of Energy.

*2 Scope 2: GHG emissions indirectly emitted by the Piolax Group's corporate activities, as defined by the GHG Protocol. For indirect emissions from electricity, we have adopted the market-based approach. FY2023 emission factor in Japan: Calculated using emission factors by electricity suppliers (for calculating GHG emissions of specific emitters). The FY2022 result is based on the Ministry of the Environment and the Ministry of Economy, Trade and Industry's publication on December 22, 2023, and adjusted emission factors by contracted electricity suppliers. FY2023 emission factors in overseas: Calculated using the latest emission factors confirmed in each country. For regions where obtaining these factors is difficult, the location-based approach is used (IGES, carbon footprint, 中华人民共和国生态环境部 政府信息公开 环办气候函 [2023]43, Thailand Greenhouse Gas Management Organization Emission Factor).

Activities toward Carbon Neutrality

Changes in Scope 3 *1 Emissions

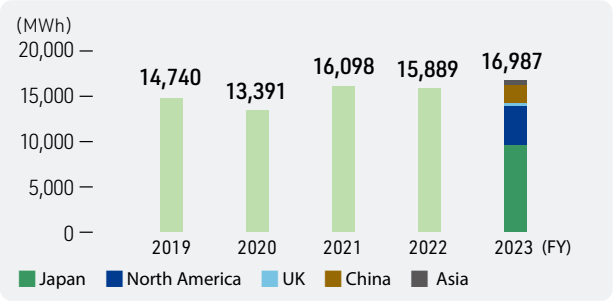
(Unit: t-CO_2)

Category	Content		FY2022	FY2023
Scope 3			82,350	131,047
Category 1	Purchased products and services	Materials procured: Piolax Group Others: Excluding overseas bases	62,708	104,478
Category 2	Capital goods	Equipment and mold investment: Piolax Group	14,552	19,546
Category3	Activities related to fuel and energy not included in Scope 1 or 2	Electricity, gas, and kerosene: Piolax Group	94	97
Category 4	Transportation and delivery (Upstream)	(Ton-kilometer method): excluding overseas bases	1,049	1,332
Category 5	Waste from business operations	Industrial and general waste: excluding overseas bases	234	1,459
Category 6	Business trips	Excluding overseas bases	136	127
Category 7	Employee commuting	Excluding overseas bases	443	443
Category 8	Lease assets (Upstream)	Contract warehouses for production plants in Japan	865	731
Category 9	Transportation and delivery (Downstream)	(Ton-kilometer method): excluding overseas bases	2,249	2,834
Category 10	Processing of products sold	Related but not calculated	NA	NA
Category 11	Use of products sold	Related but not calculated	NA	NA
Category 12	Disposal of products sold	Related but not calculated	NA	NA
Category 13	Lease assets (Downstream)	1F of the Head Office*2	19	0
Category 14	Franchise	Not applicable	NA	NA
Category 15	Investment	NA	NA	NA

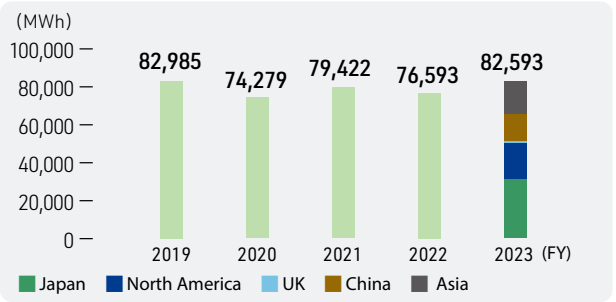
*1 Scope 3: The basic guidelines for calculating GHG emissions through the supply chain (ver. 2.5) are referred to. For emission factors in Japan, the emissions basic unit database (ver. 3.3) provided by the Ministry of the Environment for calculating an organization's GHG emissions through the supply chain, is referred to.
See Emission Intensity Database (Ver. 3.3).
LCI database IDEAv2 (for calculating GHG emissions from the supply chain).

*2 Does not apply after FY2023

Changes in Direct Energy Use



Changes in Indirect Energy Use



Entity to work on: Piolax Group

Activities toward Carbon Neutrality

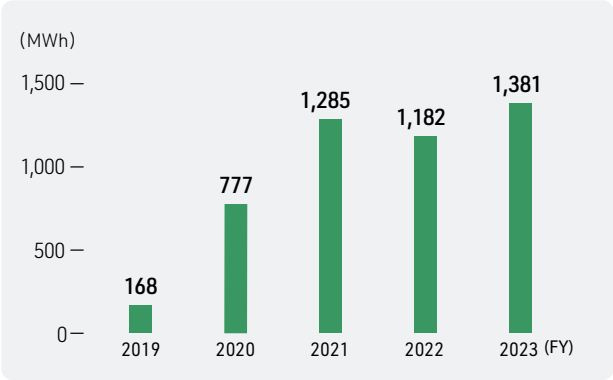
● Introduction of Renewable Energy

Following the introduction of solar panel power generation at Piolax LTD. (UK) in 2017, PIOLAX (THAILAND) LTD. began similar initiatives in 2020. In 2022, Piolax UK expanded solar panels, and in 2023, the first phase of the solar power installation plan at Piolax Corporation (US) was completed. The US project consists of five phases aimed at completion by 2030, with the second phase starting in 2024 and scheduled to be operational by 2025.

In Japan, the installation of solar panels at our new Moka Plant in Tochigi Prefecture was completed at the end of 2023, and power generation began in 2024. The renewable energy generation in FY2023 amounted to 1,381 MWh.

Solar panels at the new Moka Plant

Usage of Renewable Energy (Solar Power Generation)

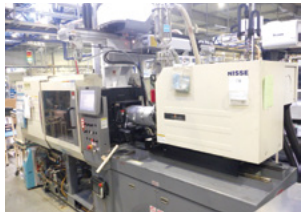


Solar panels in the US

Solar panels in the UK

● Energy-Saving Activities

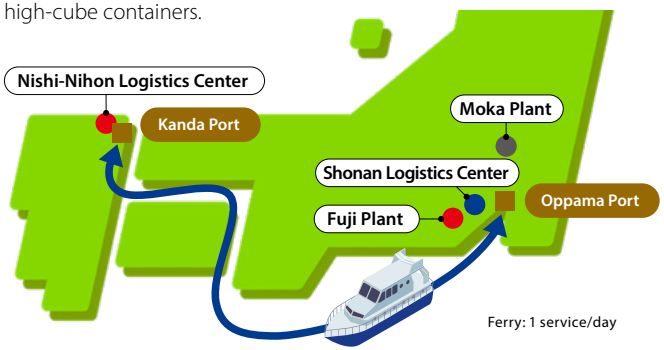
We, including our subsidiaries in and outside of Japan, are engaged in activities to improve energy saving. For example, we have adopted LED lighting, high-efficiency motors and inverter control at our plant facilities and manufacturing equipment.



Energy saving in heating cylinders of injection machines

● Logistics Department Initiatives (Modal Shift)

As part of our efforts to reduce GHG emissions generated during the transportation of products to customers, we have introduced modal shift transportation by ferry in the logistics between our production plants in Honshu and customers in the Chugoku and Kyushu regions. This resulted in a reduction of 425 tons of CO_2 in FY2023. Additionally, we have reduced the number of cargo containers (and thus the number of transport trips) by increasing filling rate of product containers and cargo containers, and by using high-cube containers.



Distance
Kanto⇔Kyushu Approx. 1,100km

Cargo volume
Kanto⇔Kyushu Approx. 28,900 boxes/month (Approx. 790 m^3/month)
Kyushu⇔Kanto Approx. 5,500 boxes/month (Approx. 1,175 m^3/month)

Efforts for Environmental Conservation

Medium-Term Environmental Targets and Results

The 8th Medium-Term Environmental Targets state that Piolax and its subsidiaries in Japan will reduce waste and improve recycling rate aiming to contribute to the creation of a circular society. In FY2023, the total amount of waste generated increased by 0.3% compared to FY2022, falling short of the target. However, the recycling rate reached 81% compared to FY2022, meeting the target.

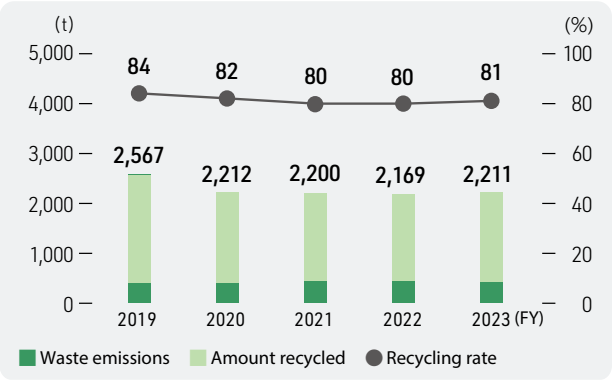
Targets and Results

KPIs	FY2023 targets	FY2023 results
Total waste emissions per unit of production	-2% (from FY2022)	0.3%
Improving recycling rate	80% (from FY2022)	81%

Entity to work on: Piolax and its subsidiaries in Japan

Waste Emissions and Recycling Rate

Waste Emissions (Including Recycled Waste)



Entity to work on: Piolax and its subsidiaries in Japan

Main Initiatives

We have set and are tracking a KPI for reducing total waste emissions as one of our key activities.

We are studying the possibility of monitoring the amount and proportion of recyclable materials within our waste to help us meet future reduction targets.

Handling Hazardous Waste and Air Pollution Prevention

In February 2024, we absorbed and merged with P.M.T. INC., our mold manufacturing and sales subsidiary, and subsequently demolished its building. The asbestos (28 m^3) used in the building was properly disposed of as specially controlled industrial waste. We will continue to strictly comply with environmental laws and regulations.

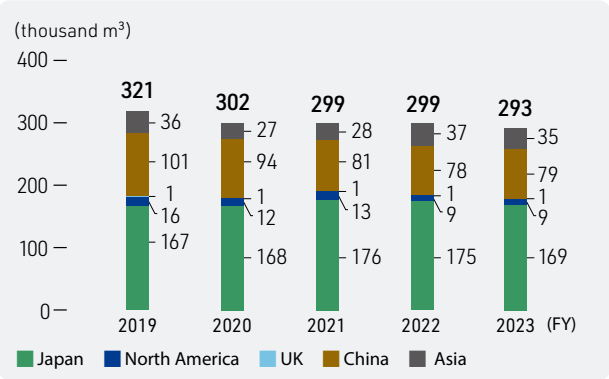
Appearance of P.M.T. INC.

Water Use Management

The Piolax Group monitors water intake data for each water source. The total water intake for FY2023 was 293,000 m^3, a decrease of 2.1% from the previous fiscal year.

The percentage of water intake from third-party water sources and renewable groundwater is approximately 50% each. In FY2024, the scope of water intake data monitoring will be expanded to include our supply chain. Additionally, the water intake data has been subject to third-party verification to assess its validity since FY2023.

Water Withdrawal



Scope: Piolax Group

Water Risks

We assess water risks related to water stress and river flood using both the WRI's Aqueduct Water Risk Atlas (hereinafter referred to as "Aqueduct") and Japan's hazard maps. These assessments are also applied as inputs for physical risks in risk management disclosures based on the TCFD Recommendations.

According to the Aqueduct, our production base in India is in an area with extremely high water stress. Its water intake is limited to industrial water from the industrial park. In FY2023 it took 1,450 m^3 of water, accounting for only 0.005% of the state government's water allocation for the region. The impact was negligible.

Overseas, we have identified high river flood risks at our production bases in India and Indonesia. Accordingly, we have assessed the distance and elevation difference from the nearest rivers. In Japan, the hazard maps indicate risks at the Fuji Plant, which faces the banks of the Fuji River. In light of recent extreme weather events, we are working on measures to mitigate flood risks at these locations.

Efforts for Environmental Conservation

Results of Water Risk Assessment at Production Bases

		Aqueduct		Hazard maps
		Water stress	River flood risks	Estimation of maximum flood depth
Japan	Head Office, Technical Center	M–H	L–M	0.5m
	Moka Plant	M–H	L	No data
	Fuji Plant	M–H	L–M	5–10m
	Piolax Medical Devices	M–H	L–M	No data
	Piolax Kyushu	L–M	M–H	No data
	Piolax H.F.S.	M–H	L	No data
	P.N.S.	L–M	L–M	0.5m
US		H	L	
UK		L	L	
Mexico		H	M–H	
China	Dongguan	L	M–H	
	Wuhan	L	H	
Korea		M–H	L–M	
Thailand		H	L-M	
Indonesia		H	EH	
India		EH	EH	

L: Low
L–M: Low–Medium
M–H: Medium–high
H: High
EH: Extremely high

Efforts to Prevent Water Pollution

● Proper Wastewater Treatment (Moka Plant)

As a Group, we recognize the potential impact of our corporate activities on water resources. All of our production bases in Japan and overseas monitor water intake and comply with environmental assessment laws and regulations in each country, including treatment and discharge of wastewater.

At Moka Plant, we upgraded our wastewater treatment facility in response to the environmental standard for nitrate nitrogen contained in wastewater from heat treatment. The facility now employs a biological denitrification process, using microorganisms to remove nitrogen compounds, instead of the previous acid-alkali wastewater treatment.

This saves approximately 170 m^3 of water a day and contributes to environmental protection and biodiversity in the Kinugawa River basin, where the plant is located.

Moka Plant: biological denitrification wastewater treatment

P.69 Environmental Data

Management of Environmentally Hazardous Substances

Initiatives to Reduce Environmental Impact of Chemical Substances

Piolax and its Japanese subsidiaries are actively working to monitor and report the emissions and transfer of substances regulated under the PRTR (Pollutant Release and Transfer Register) system of the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Chemical Substances Control Law), in order to reduce these emissions and transfers.

Emergency Measures

As part of our Environmental Management System, we, as a Group, have established the Regulations for Emergency Preparedness and Response. Based on these regulations, each department that handles chemical substances prepares response manuals to adequately address the risk of environmental pollution from chemical leaks or spills. They also conduct regular drills to ensure swift and proper action in case of such an emergency.

Biodiversity

The Piolax Group thinks that minimizing environmental impact of its products and corporate activities is the greatest contribution to biodiversity conservation and has set "contribution to the Sustainable Development Goals (SDGs)" as one of the key themes of the Piolax Global Environmental Policy.

Biodiversity Risk Assessment

We recognize the importance of understanding the environmental impact of our business activities on the surrounding areas. We use the Integrated Biodiversity Assessment Tool (IBAT)* to assess the impact on biodiversity of flora and fauna within a 50-kilometer radius of all our production bases, headquarters, and technical center in Japan and abroad (16 locations across nine countries).

We use three layers of data: the IUCN Red List of Threatened Species, the World Database on Protected Areas' Protected Planet, and Key Biodiversity Areas (KBA). We confirm the number of species classified by the IUCN as Critically Endangered (CR), Endangered (EN), and Vulnerable (VU). With Protected Planet, we identify areas designated as UNESCO World Heritage Sites, Ramsar Wetlands, and UNESCO Man and the Biosphere (MAB) reserves. With KBA, we spot Important Bird and Biodiversity Areas (IBA) and Alliance for Zero Extinction (AZE) sites.

We incorporate this information into our risk and impact assessments of our business activities to ensure appropriate biodiversity conservation efforts.

*Integrated Biodiversity Assessment Tool (IBAT) is a tool to assess biodiversity risks, developed and provided by BirdLife International, Conservation International, International Union for Conservation of Nature (IUCN) and United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC).

Biodiversity Impact Study of Areas Surrounding Our Business Sites

		IUCN Red List of Threatened Species			Protected Planet			KBA	
		CR	EN	VU	World Heritage	Ramsar	MAB	IBA	AZE
Japan	Head Office, Yokohama Technical Center	11	49	88	0	2	0	2	1
	Moka Plant	2	8	13	0	2	0	1	1
	Fuji Plant	10	51	93	0	0	1	2	0
	Piolax Medical Devices	11	49	88	0	1	0	2	1
	Piolax Kyushu	11	54	96	0	0	0	5	0
	Piolax H.F.S.	1	6	17	0	1	2	2	1
	P.N.S.	0	11	17	0	0	0	1	0
US		4	17	20	0	0	1	0	0
UK		9	16	53	0	5	0	6	0
Mexico		4	11	20	0	0	1	1	1
China	Dongguan	29	64	94	0	1	0	3	1
	Wuhan	3	6	18	0	1	0	1	0
South Korea		6	41	50	0	3	0	11	0
Thailand		28	62	105	0	0	0	0	0
Indonesia		27	78	244	0	0	0	6	1
India		27	46	71	0	0	0	2	0

Protected Planet: protected areas / World Heritage: UNESCO World Heritage Sites / Ramsar: Ramsar Wetlands / MAB: UNESCO Man and the Biosphere
KBA: Key Biodiversity Areas / IBA: Important Bird and Biodiversity Areas /AZE: Alliance for Zero Extinction

Activities

When conducting business activities, we recognize that emissions of greenhouse gases and pollutants are the main factors harming biodiversity. We are also aware that waste, land use, and water use can also impact biodiversity. Therefore, we practice the rational use of energy, the sustainable and effective utilization of resources, and the 3Rs (Reduce, Reuse, Recycle) in line with a circular economy.