Materiality 4

Promoting Resource Circulation

Environmental Action Plan Fiscal Year 2022 Results [Overview]

Self-evaluation ○: Achieved △: Measures started but not yet achieved

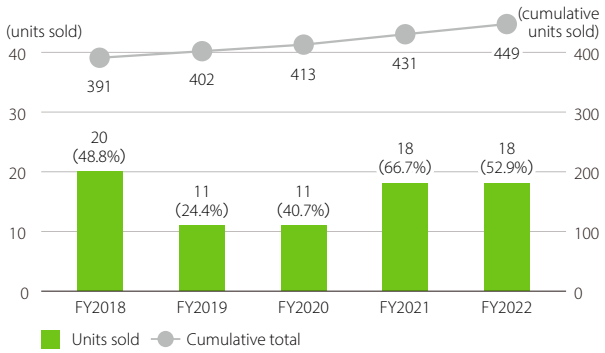
Targets for Fiscal Year 2030	What Nikon Needs to Do	Related SDGs	Scope	Targets for Fiscal Year 2022	Results for fiscal year 2022	Self-Evaluation
• Achieve the following zero emissions levels at all manufacturing companies: Japan: Level S Group manufacturing companies in China: Level 1 Other locations: Levels determined individually • Reduce total amount of waste generated by 10% or more compared to fiscal year 2018 • Reduce freshwater consumption by 5% compared to fiscal year 2018 • Reduce waste by extending product life, reducing size and weight, etc. • Reduce the amount of plastic packaging materials used by 10% compared to fiscal year 2022 • Promote the reuse and recycling of products, parts, materials, and related packaging materials • Use at least 5% recycled materials in products • Ensure at least 10% of plastic packaging materials are recycled or biomass plastics	• Reduce waste through streamlining processes from development to manufacturing • Minimize the amount of abrasive agents used • Promote the 3Rs of water (reduce water consumption, and recycle and reuse water) • Take into account the impacts that products have on the environment from the initial planning phase onwards and promote the 3Rs throughout the product lifecycle	6,11,12	Nikon and Group manufacturing companies	• Nikon and Group manufacturing companies in Japan: Maintain level S • Group manufacturing companies in China: Maintain level 1 • Group manufacturing companies outside Japan: Implement initiatives in line with conditions in each respective country	• Nikon and Group manufacturing companies in Japan: Achieved level S (final landfill disposal rate of 0.06%) • Group manufacturing companies in China: Achieved level 1 (final landfill disposal rate of 0.49%) • Group manufacturing companies outside Japan: Conducted disposal in accordance with respective national laws and regulations	○
			Nikon and Group manufacturing companies	• Reduce total waste emissions from business activities by 2% or more compared to fiscal year 2018 (total waste emissions: 7,616 tons or less)	• Reduced total waste emissions from business activities by 20% compared to fiscal year 2018	○
			Nikon and Group manufacturing companies	• Reduce freshwater consumption by at least 2% compared to fiscal year 2018 (freshwater consumption in fiscal year 2018: 1,877,000 m^3) • Improve water reuse rate compared with the previous fiscal year	• Freshwater consumption: Reduced by 7.4% compared to fiscal year 2018 • Water reuse rate: Goal not achieved; -1.7% compared to the previous year	△
			Nikon and Group manufacturing companies	• Undertake the development of technologies to achieve a 70% or higher abrasive recycling rate	• Technical considerations increased due to a change in the target abrasive material type. Reform systems through team members who have the necessary knowledge and skills; begin considering ways to reduce the amount of abrasives used	△
			Nikon Group	• Reduce the environmental impact from products • Promote the reuse of products, parts and materials • Promote the use of recycled materials in products	• Continued sales of used semiconductor lithography systems • Refreshed and upgraded FPD lithography systems • Promote use of recycled materials for imaging products and packaging materials	○

3R Initiatives for Products and Packaging

Sales of Refurbished Semiconductor Lithography Systems and Reuse of Projection Lenses

The Nikon Group has commercialized a service for collecting and reconditioning used Nikon semiconductor lithography systems from customers, where it replaces and reconfigures parts and installs the refurbished systems for new customers in and outside Japan. This business activity is an example of the Nikon Group's practice of reusing its own products within the Group. As of fiscal year 2022, the Nikon Group had sold a cumulative total of 449 refurbished products.
The Nikon Group is also working on extending the life of lithography systems by using Nikon's latest technology to reuse and replace projection lenses which have deteriorated from long-term use and cannot maintain basic exposure performance.

● Sales Trends of Refurbished Semiconductor Lithography Systems (for ICs)



* Figures in parentheses indicate share of total units sold

Battery Recycling

In Japan, the Nikon Group has been collecting and recycling end-of-life rechargeable batteries used in Nikon digital cameras from users via the JBRC*.

* JBRC: The Japan Portable Rechargeable Battery Recycling Center
An organization that promotes recycling of small rechargeable batteries in accordance with the Act on the Promotion of Effective Utilization of Resources.

Recyclable battery mark

Recycling and Reuse of Used Nikon Products

Under the WEEE Directive[*1], European countries have been establishing national laws in relation to the collection and recycling of used electrical and electronic equipment. In response to these laws, the Nikon Group has been working to fulfill its responsibility for the collection and recycling of Nikon digital cameras and other products.
The Nikon Group has registered with local collection organizations in more than 30 countries, establishing collection and recycling networks in each of these. We are also implementing product assessments at their design stages to promote easy-to-disassemble designs, reductions in the types of raw materials used, and extensive utilization of recycled resources, to comply with the provisions of the Act on Promotion of Recycling of Small Waste Electrical and Electronic Equipment[*2] in Japan.
As to reuse, part of our services includes accepting digital cameras returned from customers, repairing them, and then selling them as refurbished cameras in and outside Japan.

EU recycling symbol

*1 WEEE (Waste Electrical and Electronic Equipment) Directive: Legislation enacted in the EU in 2003 (and revised in 2012) requiring EU Member States to collect and recycle waste electrical and electronic equipment.
*2 Act on Promotion of Recycling of Small Waste Electrical and Electronic Equipment: Enacted on April 1, 2013. This legislation stipulates the responsibilities of various entities, including national and local public bodies, business operators and manufacturers, with respect to the promotion of recycling of small waste electrical and electronic equipment such as digital cameras and game devices.

Recycling of Packaging Materials

The Nikon Group promotes the recycling of packaging materials for Nikon products including digital cameras in Japan by outsourcing the task to the Japan Containers and Packaging Recycling Association.
In Europe, under the EU Packaging and Packaging Waste Directive, each country has established a packaging waste recovery and recycling system in accordance with its national laws. In the EU, the Nikon Group pays recovery and recycling fees to recycling organizations in each country, cooperating in promoting the collection and recycling of containers and packaging materials in various countries. In addition, we facilitate sorted collection by providing recycling marks and material indications on product containers and packaging materials as specified in each country.

Examples of recycling marks in each country

Reducing Resource Usage in Relation to Packaging and Instruction Manuals

Saving Resources by Downsizing Packaging Boxes

The Nikon Group is working to reduce the amount of materials it uses, such as paper and plastic, by reducing the size of individual packaging boxes.
For the AX/AX R confocal microscope system, in addition to reducing the size of its packaging box in keeping with the miniaturization of the product itself, the Group was able to reduce the overall volume of the packaging box by 20% and the weight of packaging materials by 35% by changing the bottom pallet of the packaging box from steel to paper. The use of paper pallets has also greatly reduced environmental impact on disposal.

Reducing Plastics in Packaging

In recent years, marine pollution from plastic waste has become a global problem. In response, the Nikon Group implements a number of measures that include reducing the amount of disposable plastics used in product packaging and at production sites, using paper-based materials instead of plastics, etc.
For example, the Nikon Group began using recycled PP bands made from recycled materials as transportation packaging between production sites in Japan.

Reducing the Amount of Paper Used for User's Manuals

The Nikon Group is working to save resources in the user's manuals packaged with Nikon products.
For example, in recent years, the amount of paper used for user's manuals for mirrorless cameras has tended to increase as the range of functions that these cameras provide has grown, thus requiring more pages in these manuals. Paper use has also increased with the need to provide replacement manuals or supplementary materials when upgrading firmware. In response to this situation, we have been taking steps to substantially simplify user's manuals provided with our cameras, while providing more detailed information in a timely manner through the Nikon website. Customers now access the latest information whenever they need it using their preferred device, whether it be their laptop, tablet computer or smartphone. This helps to enhance customer convenience. Further, this initiative not only helps with reducing paper usage, but also contributes to cutting CO_2 emissions associated with printing and product transportation.

Initiatives Aimed at Reducing Waste, Etc.

Towards Zero Emissions

The Nikon Group has introduced level-specific targets into its zero emissions* initiatives.
Nikon and Group manufacturing companies in Japan maintain level S status. In fiscal year 2022, Nikon X-Tek Systems Ltd. (UK) and Hikari Glass (Changzhou) Optics Co., Ltd. (China) achieved level S status.
In addition, Optos Plc (UK) and Nanjing Nikon Jiangnan Optical Instrument Co., Ltd. (China) achieved level 1 status, while other Group manufacturing companies are making further efforts to achieving Level 1 by fiscal year 2030.

*Zero emissions: First advocated by the United Nations University in 1994. It embodies an approach that seeks to reduce waste from the whole of society to zero by recycling waste from one industry for use as a resource in other industries.

Zero Emission Level-Specific Targets
Level S: Final landfill disposal rate of less than 0.5%
Level 1: Final landfill disposal rate of less than 1%
Level 2: Final landfill disposal rate of less than 5%
Level 3: Final landfill disposal rate of less than 10%
Level 4: Final landfill disposal rate of less than 20%

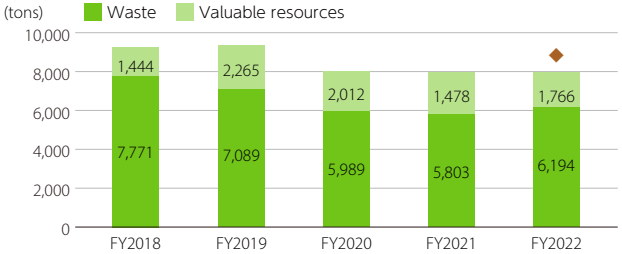
*1 Final landfill disposal rate = Final landfill amount / (waste + valuable resources)
*2 The final landfill amount is the amount of waste disposed of by landfill at the final disposal site.

Waste Reduction Performance

The amount of waste (excluding valuable resources) generated by the Nikon Group in Japan and by the Group manufacturing companies outside Japan during fiscal year 2022 was 6,194 tons. This figure represented a reduction of 20% (1,577 tons), achieving the Group target of reducing the total waste generated from operations by at least 2% compared to fiscal year 2018 (7,616 tons or less in total waste). The total amount of final landfill waste generated was 547 tons◆, with 5,647 tons of waste recycled (not including valuable resources).
In fiscal year 2023, we will continue our efforts to reduce total waste generated.

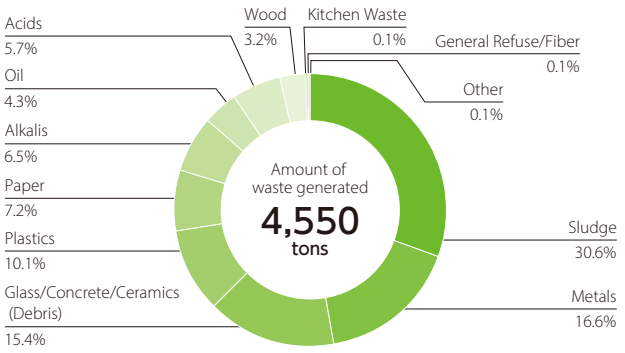
◆:Values in Data Index assured by third party

● Waste Generated by the Nikon Group in Japan and Group Manufacturing Companies Outside Japan (Waste + Valuable Resources)



* Added Nikon (Thailand) Co., Ltd. and X-Tek Systems Ltd. in fiscal year 2018, and Nikon CeLL innovation Co., Ltd., Nikon Lao Co., Ltd., Optos, Inc., and Optos Plc in fiscal year 2019.
◆:Values in Data Index assured by third party

● Breakdown by Category of Waste (Waste + Valuable Resources) Generated by the Nikon Group in Japan (Fiscal Year 2022)



Waste Reduction and Resource Circulation Measures

Initiatives in the Manufacturing Process

Abrasive agents used to polish optical glass are discarded as abrasive sludge after use. Abrasive sludge accounts for around 19% of waste discharged by the Nikon Group in Japan. During fiscal year 2018, the Nikon Group established a method to reuse these abrasives, achieving a 45% reduction in abrasive sludge waste at the Nikon Shonan Branch, which produces photomask substrates. The Nikon Group is currently rolling out this method to the entire Nikon Group in an effort to further reduce abrasive sludge waste.
At Sendai Nikon Corporation, we are taking actions to recycle resources. For example, plastic waste is sorted by material and color, gate parts from molded products are crushed, and heating is used to reduce the volume of extruded polystyrene foam. With regard to metal waste, oil is separated from metal shavings by centrifugal separation, thereby enhancing the value of recycled valuable resources.

Paper Resource Initiatives

The Nikon Group is working to reduce document printing by digitizing meeting materials and encouraging the use of computers and tablets to confirm engineering drawings and forms. We are also working to reduce paper usage by changing the settings on multifunction printers and installing software to reduce accidental or unnecessary copying.

Protection of Water Resources

Water Resource Conservation Measures

Large quantities of water are used in the production processes for optical lenses, part of Nikon's main product category, and for the quartz glass used in these lenses.
For example, during the optical lens polishing process, water has to be added frequently in order to keep the polishing agent at the right consistency. Similarly, in the quartz glass production process, our waste gas purification devices require water to remove acid components from waste gases.
To conserve water resources, the Nikon group monitors the amount of water withdrawal, discharge, and reuse, proactively implementing initiatives for effective water use. Beginning in fiscal year 2021, the Group also introduced a new freshwater consumption indicator*, as we believe it is important that water used should be returned at an equal or better quality than when it was withdrawn. The Nikon Group believes that reducing freshwater consumption will lead to reduced water withdrawal load in each region.
For fiscal year 2022, the Nikon Group water withdrawal was 1,738,000 m^3, achieving the Environmental Action Plan goal for the fiscal year to reduce water withdrawal by at least 2% compared with fiscal year 2022. We did not achieve our fiscal year 2022 target for water reuse rate, which called for an improvement compared to the previous fiscal year.

* Freshwater consumption: Sum of withdrawal volumes A, B, and C, minus returned water volume D (A+B+C-D).
A: Water withdrawal from municipal water supply facilities (tap water, industrial water, etc.)
B: Water withdrawal from surface water (lakes, rivers, etc.)
C: Water withdrawal from groundwater
D: Return water of equal or better quality than the withdrawal source (applicable to B and C only)

Water Risk Assessments

The term water risk is used to refer to the impact that issues relating to water conservation, water-related natural disasters, water pollution, etc., can have on a business enterprise's activities. For the Nikon Group, which requires large quantities of water in the manufacturing processes for its optical parts, etc., a proper understanding and awareness of water risk is vitally important. Therefore, we carry out water risk assessments at each facility and strive to monitor the situation effectively.
In 2019, we conducted a water risk assessment based on Aqueduct*1 for 16 domestic and international business facilities having high water withdrawal levels. As a result, we confirmed that there are no significantly high water stress*2 areas in the regions where the Nikon Group conducts business activities.
During fiscal year 2022, we continued to address water risk, conducting water risk surveys that targeted the 31 Group facilities in and outside Japan identified in our survey conducted during fiscal year 2020. Specifically, we incorporated these procedures into medium- and long-term repair plans for locations in which we identified risk leaks due to aging facilities and equipment.

*1 Aqueduct: A world map and information tool showing global water risks, provided free of charge by the World Resources Institute.
*2 Water stress: A condition in which demand for water exceeds supply.

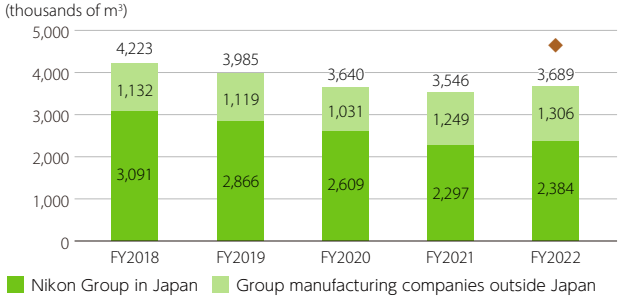
Appropriate Wastewater Treatment

The Nikon Group uses large amounts of water in its manufacturing processes. When discharging water used, the Group applies appropriate wastewater treatment to minimize the environmental impact on waterways in each region. Specifically, we have established voluntary standards that are even stricter than discharge standards found in each region, and we conduct wastewater treatment in accordance with these levels alongside, with regular monitoring of the wastewater discharge situation.

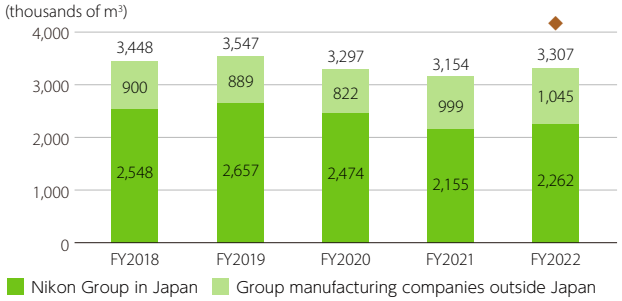
Water Withdrawal and Discharge

Nikon Group water withdrawal for fiscal year 2022 was 3,689,000 m^3 (Nikon Group in Japan accounting for 2,384,000 m^3, and Group manufacturing companies outside Japan accounting for 1,306,000 m^3). Wastewater discharge volume amounted to 3,307,000 m^3 (Nikon Group in Japan accounting for 2,262,000 m^3, and Group manufacturing companies outside Japan accounting for 1,045,000 m^3). Freshwater consumption totaled 1,738,000 m^3, and we achieved our target of reducing freshwater consumption by at least 2% compared to fiscal year 2018 (7.4% reduction).
In addition, at the business facilities and the Group manufacturing companies that make use of considerable amounts of water, we pay special attention to ensuring that wastewater generated in manufacturing processes is properly treated, and endeavor to reuse as much water as possible.
Nikon Group water reuse rate for fiscal year 2022 was 7.0%, falling short of our target to increase water reuse rate compared to the previous year (down 1.7%). The main reason for this result was that the amount of water reused at the Nikon Shonan Branch, where wastewater from the cleaning process is reused as supply water for the pure water production equipment, decreased 58% compared to fiscal year 2021. This decrease was due to a suspension of pure water supply to conserve water when cleaning equipment is not used.
The Nikon Group will continue efforts to reduce freshwater consumption further and improve recycling rates.

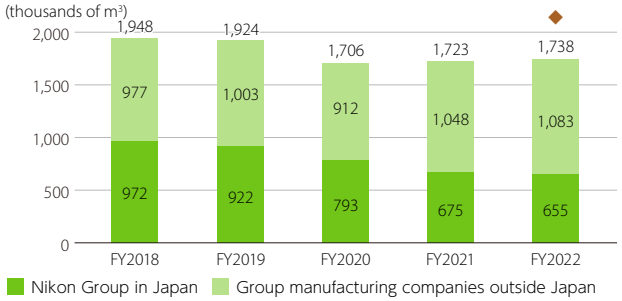
Changes in Water Withdrawal



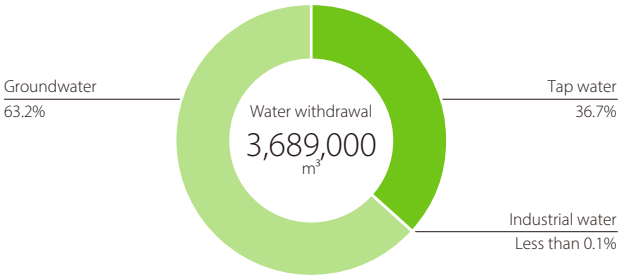
Changes in Water Discharge



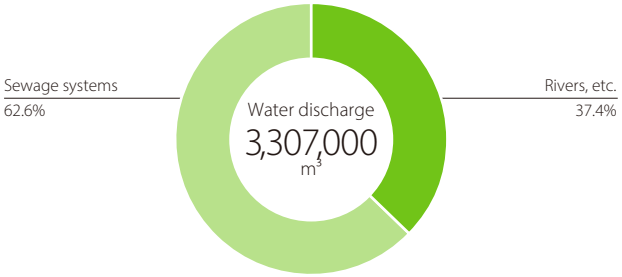
Changes in Freshwater Consumption



Breakdown of Water Withdrawal (Fiscal Year 2022)◆



Breakdown of Water Discharge (Fiscal Year 2022)◆



◆: Values in Data Index assured by third party

Water Reuse Measures

Case Example of Wastewater Reuse (Nikon Shonan Branch)

When manufacturing photomask substrates, the Nikon Shonan Branch uses a large amount of water resources during the polishing and cleaning processes. Accordingly, during fiscal year 2018, the Nikon Shonan Branch implemented a mechanism to reuse the wastewater from the cleaning process as supply water for pure water production equipment. As a result, over the course of fiscal year 2022, the Nikon Shonan Branch reused approximately 6,000 m^3 of water discharge for the year, reducing water withdrawal 5% compared with the period prior to adoption.

Effective Use of Concentrated Water (Nikon Kumagaya Plant)

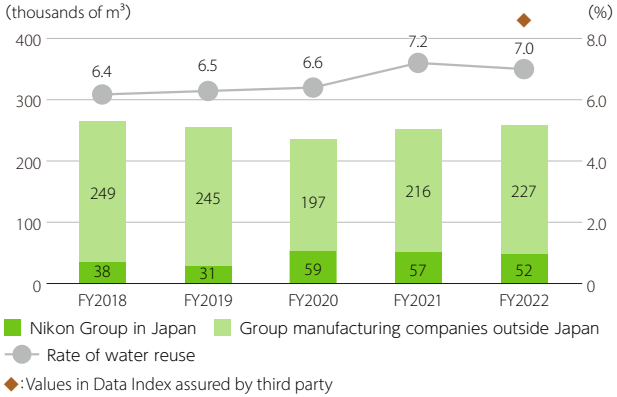
Nikon Kumagaya Plant manufactures semiconductor lithography systems, a process requiring a large amount of ultrapure water. In order to produce ultrapure water, tap water is first fed into the ultrapure water system and separated into pure water and concentrated water by the RO membrane. The pure water is treated further to produce ultrapure water. However, the concentrated water had previously been discharged as wastewater. In fiscal year 2018, Nikon adopted a process to reuse this concentrated water effectively to supplement water used in cooling towers. In addition, we have been increasing the number of cooling towers reusing this concentrated water since October 2020.
As a result, over the course of fiscal year 2022, the Nikon Kumagaya Plant reused approximately 43,000 m^3 of concentrated water as supplementary water for cooling towers. This reused water accounted for approximately 14% of the total water withdrawal at the Nikon Kumagaya Plant.

Reuse of Domestic Wastewater and Treated Water (Nikon Lao Co., Ltd.)

Nikon Lao Co., Ltd. (Laos) is located in a district with only basic water supply infrastructure, and has been actively implementing measures to improve water resource efficiency. From April 2017, the company has been purifying domestic wastewater and reusing it for flushing toilets and for their garden sprinkler system. Since February 2018, they have also been using treated water as coolant.


Wastewater treatment system at Nikon Lao Co., Ltd.

Changes in Water Reuse at the Nikon Group in Japan and Group Manufacturing Companies Outside Japan



◆: Values in Data Index assured by third party