

Materiality 4

Promoting Resource Circulation



Goals for the Fiscal Year Ending March 2030 (What Nikon Intends to Achieve)	What Nikon Needs to Do	Related SDGs	Targets for the year ended March 2022	Scope	Results
<ul style="list-style-type: none"> Achieve zero emissions level 1 or better at all manufacturing companies Reduce total amount of waste generated by 10% or more compared to the fiscal year ended March 2019 Reduce freshwater consumption by 5% compared to the fiscal year ended March 2019 70% or above reuse rate for abrasive agents Expand 3R products 	<p>By the fiscal year ending March 2031, formulate company targets in response to the issue of resource depletion, and aim to realize these targets</p> <ul style="list-style-type: none"> Reduce waste through streamlining processes from development to manufacturing 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, 12	<ul style="list-style-type: none"> 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 country 	Nikon and Group manufacturing companies	<ul style="list-style-type: none"> Nikon and Group manufacturing companies in Japan: Achieved level S (final landfill disposal rate of 0.09%) Group manufacturing companies in China: Achieved level 1 (final landfill disposal rate of 0.52%) Group manufacturing companies outside Japan: Conducted disposal in accordance with respective national laws and regulations
			<ul style="list-style-type: none"> Reduce the total amount of waste generated from operations by at least 1% year-on-year 	Nikon and Group manufacturing companies	<ul style="list-style-type: none"> Total amount of waste generated from operations: Reduced by 2.2% year-on-year
			<ul style="list-style-type: none"> Determine water risk measures based on survey result Reduce water withdrawal year-on-year (compared to 3,640,000 m³ in the previous fiscal year) Improve the water reuse rate year-on-year (compared to 6.6% in the previous fiscal year) 	Nikon and Group manufacturing companies	<ul style="list-style-type: none"> Confirmed measures at some facilities and completed incorporation into medium- to long-term plans Water withdrawal: Reduced levels year-on-year (by 2.6%) Water reuse rate: Improved year-on-year (by 0.6%)
			<ul style="list-style-type: none"> Complete deliberation on measures for reducing the airborne emission volume of solvent-type detergents Reduce abrasive usage volume year-on-year 	Nikon and Group manufacturing companies	<ul style="list-style-type: none"> Shared Group internal survey results and extracted reduction measures in related industries with each facility Though reduction in the number of types of abrasives used led to lower costs, increased usage counteracted this effect and left targets unachieved due to higher production
			<ul style="list-style-type: none"> Promote the reuse and recycling of products, parts, and materials 	Nikon Group	<ul style="list-style-type: none"> Continued sales of used semiconductor lithography systems Used recycled materials for new product materials and packaging materials

3R Initiatives for Products and Packaging

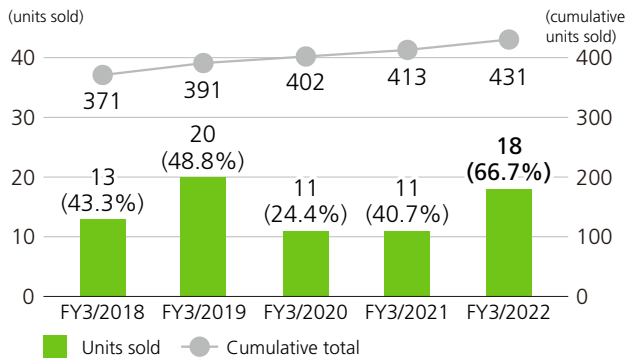
Sales of Refurbished Semiconductor Lithography Systems and Reuse of Projection Lenses

Activities and Results

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 is an example of the Nikon Group's practice of reusing its own products within the Group. As of the fiscal year ended March 2022, the Nikon Group had sold a cumulative total of 431 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

Activities and Results

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

Activities and Results

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

Activities and Results

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. Many of these frameworks have adopted the Green Dot system*. In the EU, the Nikon Group pays recovery and recycling fees to recycling organizations in each country, and displays the Green Dot symbol on its product packaging. In this way, the Nikon Group cooperates in the promotion of the recovery and recycling of packaging materials.

* Green Dot System

A recovery and recycling system for packaging waste adopted by domestic legislation in EU Member States in accordance with the 1994 EU Packaging and Packaging Waste Directive.



Green Dot symbol

Reducing Resource Usage in Relation to Packaging and Instruction Manuals

Activities and Results

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 has implemented a number of measures, such as switching to paper-based materials and reducing the amount of plastic used in its packaging. The Nikon Group is also working to standardize its packaging materials not just for its cameras and other consumer products, but also for industrial products, by promoting the uniform use of a single type of corrugated paper, including cushioning materials. This makes packaging easier to sort and also helps to reduce plastic waste.

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. 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. For the Z 6II and Z 7II models that were launched in 2020, the paper user's manual was reduced from 270 pages to around 80 pages, and for the Z fc model that was launched in 2021, we reduced this further to 60 pages, facilitating significant cuts to paper resources used. In addition, by providing the most up-to-date information on the Nikon website, customers can 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. We have also taken similar resource-saving action for user's manuals provided with Nikon lenses, reducing paper resource usage by approximately 40% for the manual provided with the NIKKOR Z DX 18-140mm f/3.5-6.3 VR, launched in 2021, and by approximately 60% for the NIKKOR Z 100-400mm f/4.5-5.6 VR S and NIKKOR Z 400mm f/2.8 TC VR S, launched in February 2022. These initiatives not only help with reducing paper usage, but also contribute to cutting CO₂ emissions associated with printing and product transportation. We plan to continue the expansion of this initiative to also cover the user's manuals for upcoming products.

Initiatives Aimed at Reducing Waste, etc.

Towards Zero Emissions*

System and Framework

The Nikon Group has introduced level-specific targets into its zero emissions initiatives.

In the fiscal year ended March 2022, Nikon and Group manufacturing companies in Japan once again achieved Level 5. Outside Japan, Hikari Glass (Changzhou) Optics Co., Ltd. (China), Nanjing Nikon Jiangnan Optical Instrument Co., Ltd. (China), and Optos Plc (UK) achieved Level 1, and other Group manufacturing companies are also making further efforts with the aim of achieving Level 1 by the fiscal year ending March 2031.

* The concept of zero emissions was 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 5: 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%

* Final landfill disposal rate = Final landfill amount / (waste + valuable resources)

* The final landfill amount is the amount of waste disposed of by landfill at the final disposal site.

Waste Reduction Performance

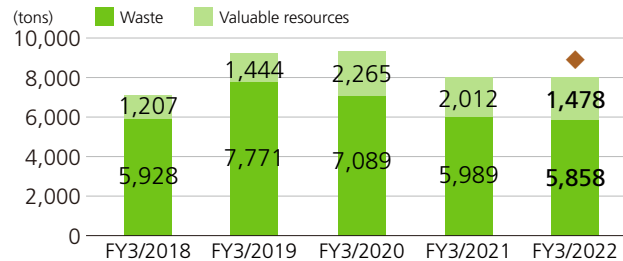
Activities and Results

The amount of waste (excluding valuable resources) generated by the Nikon Group in Japan and by the Group manufacturing companies outside Japan during the fiscal year ended March 2022 was 5,858 tons. This figure represented a year-on-year reduction of 2.2% (131 tons), achieving the Group's target of reducing the total amount of

waste generated from operations by at least 1% year-on-year (at least 59.9 tons). The total amount of final landfill waste generated was 813 tons♦, with 6,524 tons of waste recycled. In the fiscal year ending March 2023, we will continue our efforts to reduce total waste generated.

♦:Values in Data Index assured by third party

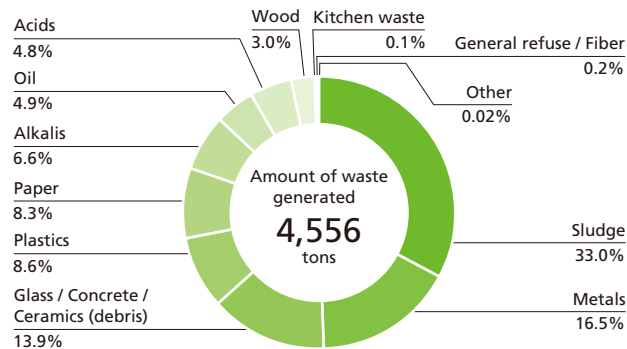
● Changes in the Amount of Waste Generated (Waste Plus Valuable Resources) by the Nikon Group in Japan and Group Manufacturing Companies Outside Japan



* Added Nikon (Thailand) Co., Ltd. and X-Tek Systems Ltd. from the fiscal year ended March 2019, and Nikon CeLL innovation Co., Ltd., Nikon Lao Co., Ltd., Optos, Inc., and Optos Plc from the fiscal year ended March 2020.

♦:Values in Data Index assured by third party

● Breakdown by Category of Waste (Waste Plus Valuable Resources) Generated by the Nikon Group in Japan (Fiscal year ended March 2022)



Waste Reduction and Resource Circulation Measures

Activities and Results

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. In the fiscal year ended March 2019, the Nikon Group established a method to reuse these abrasive agents, 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

TARGETS

ACTIVITIES AND RESULTS

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. From the fiscal year ended March 2022, the Group also introduced a new freshwater consumption indicator*¹, 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.

In the fiscal year ended March 2022, the Nikon Group's water withdrawal as a whole was 3,546,000 m³, achieving its goal of reducing water withdrawal on a year-on-year basis as part of its Environmental Action Plan. In addition, the Group's freshwater consumption under its new indicator was 1,723,000 m³.

*1 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

SYSTEM AND FRAMEWORK

ACTIVITIES AND RESULTS

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 components, etc., a proper understanding and awareness of water risk is vitally important. Therefore, we carry out water risk appraisals at each facility and strive to monitor the situation effectively. During the fiscal year ended March 2021, we conducted water risk surveys targeting 31 Group facilities in and outside Japan. In the fiscal year ended March 2022, we explored measures to address the water risks identified from the results of this survey, and some of our facilities have already begun to implement these measures. Specifically, at facilities where leak risks due to aging facilities and equipment were identified, these measures were incorporated into medium- to long-term repair plans.

Appropriate Wastewater Treatment

ACTIVITIES AND RESULTS

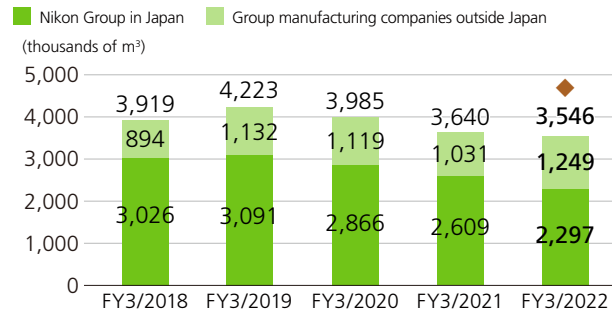
The Nikon Group uses large amounts of water in its manufacturing processes. When discharging water used, the Group applies appropriate wastewater treatment to minimize the environmental impact on waterways in each region. Specifically, we have established voluntary standards that are even stricter than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

Water Withdrawal and Discharge

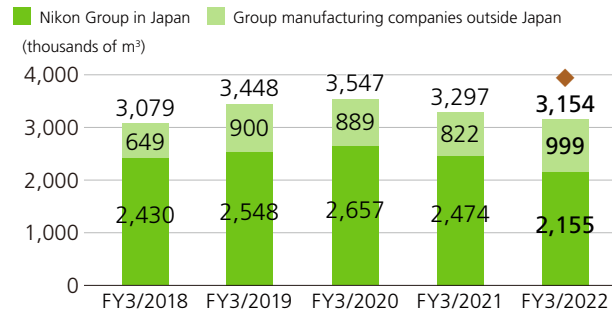
Activities and Results

The Nikon Group's water withdrawal in the fiscal year ended March 2022 was 3,546,000 m³ (with the Nikon Group in Japan accounting for 2,297,000 m³, and Group manufacturing companies outside Japan accounting for 1,249,000 m³). The Group's total wastewater discharge was 3,154,000 m³ (with the Nikon Group in Japan accounting for 2,155,000 m³, and Group manufacturing companies outside Japan accounting for 999,000 m³). The Nikon Group thus achieved its target of reducing water withdrawal compared to the fiscal year ended March 2021 (3,640,000 m³). 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. The Nikon Group's water reuse rate in the fiscal year ended March 2022 was 7.2%, representing an increase of 0.6% compared to the fiscal year ended March 2021. Specifically, new reuse initiatives launched at the Nikon Kumagaya Plant in October 2020 increased reuse by approximately 15,000 m³ compared to the fiscal 2020. The Nikon Group will keep striving to increase its water reuse rate further.

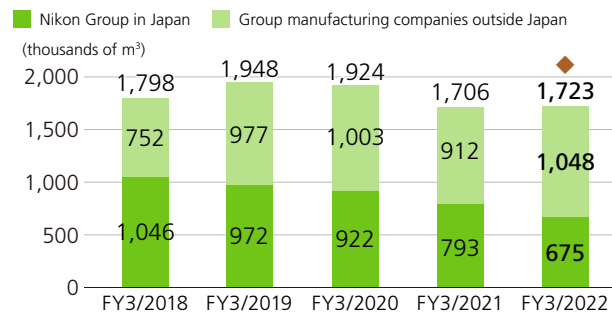
Changes in Water Withdrawal



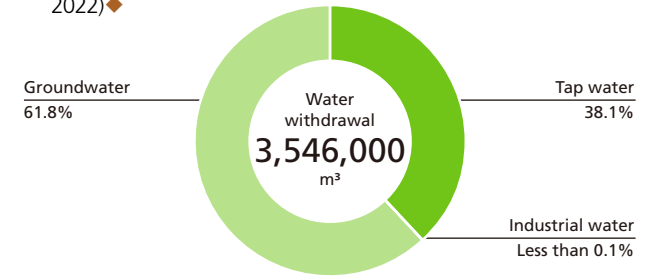
Changes in Water Discharge



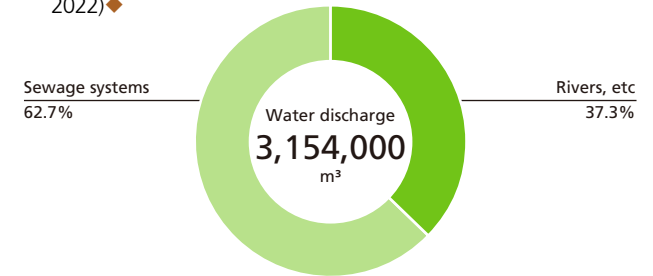
Changes in Freshwater Consumption



Breakdown of Water Withdrawal (the fiscal year ended March 2022) ◆



Breakdown of Water Discharge (the fiscal year ended March 2022) ◆



◆:Values in Data Index assured by third party

Water Reuse Measures

Activities and Results

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. As such, in March 2019, the Nikon Shonan Branch implemented a mechanism to reuse the wastewater from the cleaning process. As a result, over the course of the fiscal year ended March 2022, the Nikon Shonan Branch was able to reuse approximately 14,000 m³ of water discharge. As a result, we were able to reduce the amount of water withdrawal at the Nikon Shonan Branch by approximately 13%.

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 the fiscal year ended March 2019, Nikon adopted a process to effectively reuse this concentrated water 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 the fiscal year ended March 2022, the Nikon Kumagaya Plant was able to reuse approximately 40,000 m³ of concentrated water as supplementary water for cooling towers. This reused water accounted for approximately 12% 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.

