

Realizing a Resource-circulating Society

The Nikon Group is focusing on initiatives through its business activities such as waste reduction and the effective use of water resources while striving to save resources through efforts such as reducing both the size and weight of products as well as the volume and weight of packaging.

Product Reuse and Recycling

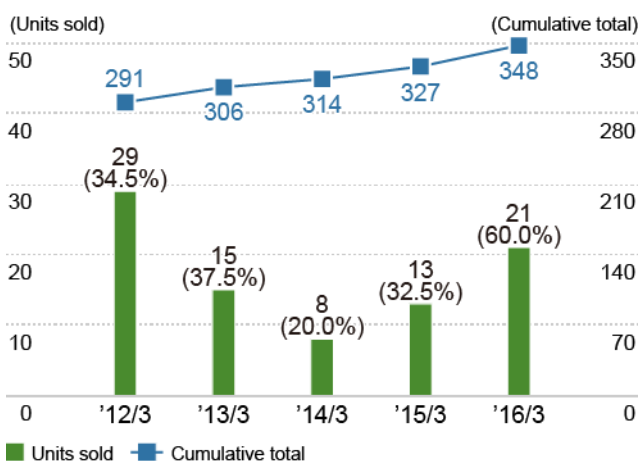
As a supplier of products to all over the world, the Nikon Group is working tirelessly to reduce the total environmental impact of its products and services by reusing and recycling used products.

■ Sales of Refurbished Steppers and Scanners

In the year ended March 31, 2001, the Nikon Group launched a commercial service for collecting used Nikon steppers and scanners from customers, reconditioning them, replacing parts, reconfiguring them, and installing them for new customers in and outside Japan.

This business is an example of Nikon's practice of reusing its own products. As of the year ended March 31, 2016, Nikon had sold a cumulative total of 348 refurbished steppers and scanners.

Sales Trends of Refurbished Steppers & Scanners (for IC)



* Number shown in () refers to percentage of total units sold

■ Battery Recycling

In Japan, Nikon Corporation has been cooperating with JBRC* and a number of other companies to collect end-of-life secondary batteries, including those used for Nikon digital cameras, from users for recycling since 2001.

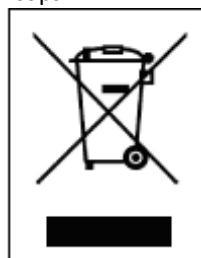
* Japan Portable Rechargeable Battery Recycling Center (JBRC)

JBRC is a general incorporated association. This association promotes the recycling of small rechargeable batteries based on the Act on the Promotion of Effective Utilization of Resources.

■ Recycling of Used Nikon Products

Under the WEEE Directive*¹, European countries have been developing national laws in relation to the collection and recycling of used electrical and electronic equipment. In response to these laws, we have been working to fulfill our responsibility for the collection and recycling of Nikon digital cameras and other products. We have established a collection and recycling system in more than 30 countries while registering with local collection organizations. The Nikon Group will continue taking appropriate measures in the future for the collection and recycling of used products.

We are also implementing assessments at the design stage of products and promoting easy-to-dismantle design, the reduction of the type of raw materials to use, and the active use of recycled resources to comply with the Act on Promotion of Recycling of Small Waste Electrical and Electronic Equipment*² in Japan.



Symbol for recycling in the EU.

*¹ WEEE Directive (Waste Electrical and Electronic Equipment)

Under legislation enacted in the EU in 2003, Member States are required to collect and recycle waste electrical and electronic equipment. The WEEE Directive was revised in 2012.

*2Act on Promotion of Recycling of Small Waste Electrical and Electronic Equipment

Act enforced in April 1, 2013. This legislation stipulates the duty of entities from the government and local public authority to business operators and manufacturers for the purpose to promote recycling that include 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 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 developed a packaging waste collection and recycling system* in accordance with its national laws. Many of those frameworks adopt the Green Dot system*. In EU, the Nikon Group cooperates in the collection and recycling of packaging materials in those countries that participate in the program by paying a collection and recycling fee to recycling organizations in each country and by displaying the Green Dot mark on its product packaging.



Green Dot symbol

* Green Dot System

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

Column

Recycling at Nikon Tsubasa Inc.

We are disassembling and recycling items such as prototypes, products used at exhibitions as well as computers and hard disk drives that are no longer necessary. This is done by Nikon Tsubasa Inc. special subsidiary (hereinafter Nikon Tsubasa Inc.) that was established based on the Law for the Promotion of Employment of Persons with Disabilities in 2000. We previously disposed such items as waste by commercial operators, but we have been able to sell such items as valuables through separation and disassembly. Furthermore, disposing items within the Group has profound significance from the perspective of information security such as confidentiality. Even though the amount is small, we believe recycling efforts that start on the ground are important and we are furthering these types of recycling initiatives for the future.



People in charge disassemble the products to the smallest possible units by hand and separate to 15 types according to the materials such as glass, metal, plastic and so on. The complex product can take more than one day to disassemble one unit.



An instructor shows how to do in front of the person in charge before start working. The instructor makes a final confirmation to realize correct separation. We are also paying close attention to the safety. For example, we require protective glasses and gloves to be worn while the work is conducted.

The results of these disassembly operations indicated below.

Results for the Year Ended March 31, 2016

Crude iron (ferrous metals)	563kg
Nonferrous metals (copper/aluminum, etc.)	921kg
Plastic	314kg

Please see Vigorous Activities Demonstrated by Diverse Employees > Supporting People with Disabilities for more information about Nikon Tsubasa Inc. (P125)

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Packaging Measures

■ Volume and Weight Reduction of Packaging

The Nikon Group makes efforts to improve the recyclability through the reduction of the use of hazardous materials as well as efforts to save resources by reducing both the volume and weight of packaging.

We formulated Nikon Packaging Assessment for the purpose of improving the environmental compatibility of our packaging materials in 2001 in order to assess and confirm the items below while evaluating the designs of packaging when developing new products in each business division.

Moreover, we are revising the Nikon Packaging Assessment to be in-line with the relevant laws and regulations.

[Primary Assessment Items]

- Restriction of hazardous substance use
- Clear identification of materials/quality
- Reduction of volume and weight
- Easy separation (improvement of the availability to separate and disassemble)
- Improvement of transport efficiency (standardization of geometry, etc.)



Product boxes of compact digital camera

The cubic volume of the subsequent model (left: A900) is reduced roughly 13% compared to the previous model (right: S9900).

■ Reduction of Paper Resource Consumption for User's Manuals

Digitalization of User's Manuals for IC Steppers and Scanners

IC steppers and scanners have complex structures and operations and are yet necessary for many adjustment operations. This means that its user's manuals contain a very large number of pages. The part of the manuals that explain early model IC steppers and scanners released in 1990 had as many as 3,100 pages. Thereafter, the volume of the user's manuals continued to grow as higher precision was demanded for steppers and scanner.

The Nikon Group began digitalizing and distributing electronic user's manuals in the form of CD-ROMs in 2008. This allowed us to save approximately 100,000 sheets of paper each year, which is the equivalent to the user's manuals published on paper. The digitalization of user's manuals also contributes to not only resource saving but also helped save space in our customers' storage areas and improved user-friendliness.

In addition, we are able to reduce paper resources to complete user's manuals even in the production process of the user's manuals by confirming and revising the documents on computer screens rather than on paper. The Nikon Group takes part in the preparation of guidelines for paperless proofreading of user's manuals in an industry association and is working to move all internal revision work to an electronic format.

We also apply this same activity even in the process of creating user's manuals for FPD lithography systems.



Gathering information for over 6,000 pages on a single CD

Resource-saving in Material in Digital Camera Packaging

The Nikon Group advances resource-saving from the user's manuals and warranties to the packaging for digital cameras. We are also moving forward with our switch from concise paper versions to detailed digital versions of our user's manuals. We provided digital user's manuals for compact digital cameras by CD-ROM starting in 2007 and implemented methods to download user's manuals from our website starting in 2012. In 2014, electronic user's manuals became available online all over the world and we completely eliminated the inclusion of CD-ROMs in the packaging for our compact digital cameras and advanced cameras with interchangeable lenses. Thereafter, we also stopped including CD-ROMs in packaging for digital SLR cameras that still included a CD-ROM and started only providing download digital versions for new models released beginning in 2015. These initiatives connected to not only resource savings but also to user benefits that include improved searchability and timely provision of information in addition to contributing to the reduction of CO₂ emissions in transport. We have also started testing the unification of warranties that had been included in the packaging on paper with the user's manuals. We started with compact digital cameras for Europe and are expanding this effort to other regions and products. We adopted boxes that did not use ink that included hazardous chemicals for a portion of our lens products in 2015 in addition to working to promote miniaturization, save resources, and reduce CO₂ during transport even for packaging. We believe at the Nikon Group in connecting to the reduction of the large environmental impact by accumulating a multitude of small innovations for various materials in packaging from now and into the future.



Our download center. This one place brings together not only up-to-date user's manuals but also firmware and software updates.

Initiatives Toward Waste Reduction

The Nikon Group promotes the reduction of waste and the improvement of recycling rates by defining the five levels of zero emissions*.

* Zero emissions

Zero emissions was proposed by the United Nations University in 1994. The concept takes a view to reducing waste from the whole of society to zero by recycling waste from one industry for use as resources for other industries.

■ Toward Zero Emissions

In the year ended March 31, 2009, the Nikon Group defined four levels of zero emissions according to the rate of final landfill disposal. With the fact that many facilities had already achieved and maintained Level 1, we added Level S according to the existing levels in the year ended March 31, 2014. We are striving to achieve a further reduction in our final landfill disposal rate.

Nikon and all of the Group manufacturing companies in Japan have achieved Level S as Hikari Glass Co. Ltd., the only company that remained Level 1 in the Group manufacturing companies in Japan, achieved Level S in the year ended March 31, 2016.

Nikon Imaging (China) Co., Ltd. (China) maintained Level 1. We are promoting initiatives that aim for Level 1 also at other Group manufacturing companies outside Japan in the future.

Five Levels of Zero Emissions

- Level S: Under 0.5% of the final (landfill) disposal rate (added in the year ended March 31, 2014)
- Level 1: Under 1% of the final (landfill) disposal rate
- Level 2: Under 5% of the final (landfill) disposal rate
- Level 3: Under 10% of the final (landfill) disposal rate
- Level 4: Under 20% of the final (landfill) disposal rate

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**Achievement of the levels of Zero Emissions
(Year Ended March 31, 2016)**

Level	Company name
Level S	Nikon Corporation (All six plants)
	Tochigi Nikon Corporation/Tochigi Nikon Precision Co., Ltd.
	Sendai Nikon Corporation
	Miyagi Nikon Precision Co., Ltd.
	Kurobane Nikon Co., Ltd.
	TNI Industry Co., Ltd.
	Hikari Glass Co., Ltd.
Level 1	Nikon Imaging (China) Co., Ltd.
Level 2	Hikari Glass (Changzhou) Optics Co., Ltd.
	Nanjing Nikon Jiangnan Optical Instrument Co., Ltd.

Results of Waste Reduction

The amount of waste generation (excluding valuable resources) during the year ended March 31, 2016 by Nikon Corporation was 2,831 tons, while that by Group manufacturing companies in Japan totaled 2,314 tons. The amount of landfill disposal of Nikon and Group manufacturing companies in Japan was 4 tons and the recycled amount was 5,141 tons.

Together, Nikon and the Group manufacturing companies in Japan achieved their target of 1% reduction compared to moving average emission* of recent three years. Furthermore, the amount of waste generation from our Group manufacturing companies outside Japan was 2,239 tons.

* Excluding amount of occasional disposal

Progress Made by the Nikon Group in Japan

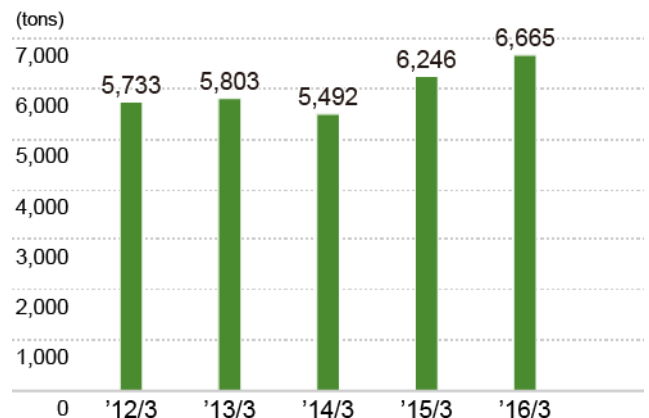
In Nikon and Group manufacturing companies in Japan, we introduced a waste management system, which supports the Electronic Manifest* System (JWNET). This system allows us to unify the waste generation calculation method, enabling rapid data collection regarding waste emissions and increasing data accuracy. We plan to further visualization of data in the future by linking to other systems.

In addition, we will examine the application of the waste management system for non-manufacturing facilities in Japan.

* Electronic manifest

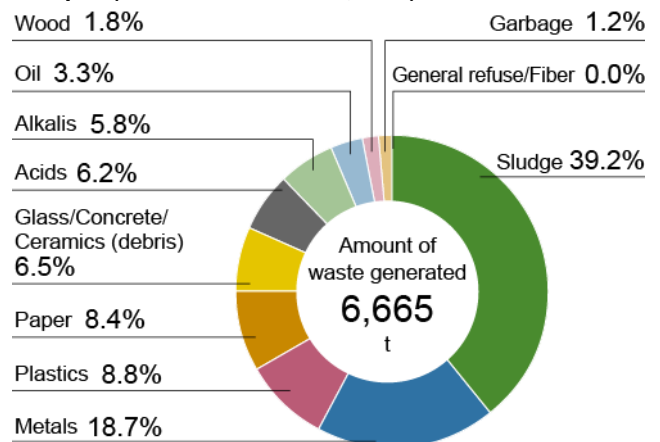
The manifest system was established to prevent illegal dumping of waste. Under the system, companies identify and manage the flow of disposal of their waste by the use of manifests. Electronic manifests are manifests digitized for more advanced and efficient waste management.

Amount of Waste Disposal Including Valuable Resources at Nikon Corporation and Group Manufacturing Companies in Japan



* Including amount of occasional disposal

Breakdown (by category) of Waste Including Valuable Resources at Nikon and Group Manufacturing Companies in Japan (Year Ended March 31, 2016)



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■ Initiative Examples of Group Companies Outside Japan

Achievement of Level 1 Zero Emissions

In China, Nikon Imaging (China) Co., Ltd. commenced activities toward zero emissions since the year ended March 31, 2009. It has assessed the current situation and examined disposal methods besides landfill according to the type of wastes. As a result, the waste disposal companies have been changed to those that are able to offer recycling and other such services. Thanks to its wide-ranging efforts, it achieved level 1 zero emissions in the year ended March 31, 2010. During the year ended March 31, 2016, it retained its level 1 with a final landfill disposal rate of 0.62%. The company is also recycling waste generated from the cleaning process.

Collection of Waste Generation Data

Nanjing Nikon Jiangnan Optical Instrument Co., Ltd. (China) and Hikari Glass (Changzhou) Optics Co., Ltd. (China) began collecting accurate data of the waste generation in the year ended March 31, 2012 and had established the waste management system. Both of them achieved the target of level 2 zero emissions in the year ended March 31, 2016.

Efforts at Non-manufacturing Facilities Outside Japan

In order to save resources, all non-manufacturing facilities outside Japan endeavor to reduce the use of paper cups and other disposable dishes, and to refrain from printing documents. The offices also promote waste separation and raise awareness of resource recycling.

Nikon Instruments (Shanghai) Co., Ltd. (China) and Nikon International Trading (Shenzhen) Co., Ltd. (China) have changed settings of multifunction devices and introduced software to allow the content of documents to be confirmed before printing. This resulted in a reduction to the amount of paper used by allowing confirmation before accidental or unnecessary copying. Nikon India Private Limited uses a service that recycles used paper from the office, turning it into notebooks, which are then once again used in the office.



Paper recycling box (left) and notebook made from recycled paper (right) at Nikon India Private Limited

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Green Purchasing

We promote green purchasing to prioritize the purchase of environmentally-friendly goods by focusing on friendliness to the environment as for various indirect materials to use in business from ballpoint pens to computers.

■ Green Purchasing Policy

We have worked for green purchasing as one of the themes of our environmental conservation by formulating the Basic Policy for the Promotion of Green Purchasing and the Nikon Green Purchasing Standards.

We have standardized the goods for green purchasing at Nikon and Group companies in Japan in the year ended March 31, 2016. Uniform implementation was difficult overseas due to differences in aspects such as social backgrounds, but initiatives for active green purchasing have begun.

Basic Policy for the Promotion of Green Purchasing

Policy

The Nikon Group prioritized the purchase of goods that take into account their effect on the environment from production to distribution, use, and disposal (environmentally-friendly goods) based on the Nikon Basic Environmental Management Policy and Nikon Basic Procurement Policy in mass production, mass consumption, and mass waste social systems.

Basic Approach

- (1) Prioritize purchase of environmentally-friendly goods.
- (2) Sufficiently take into account the necessity and required amount.
- (3) Take into account the life cycle of the goods.
- (4) Switch from purchasing "things" to purchasing "services".
- (5) Take into account initiatives toward the environmental conservation of the supplier.

■ Promotion of Green Purchasing

The Nikon Group sets company-wide targets in an environmental action plan and each business facility of Nikon formulates the targets based on the company-wide targets. Each unit calculates the rate of green purchasing to promote green purchasing. We have striven for green purchasing with different targets set by each Group companies in Japan. We now have adjusted the goods for green purchasing to be the same at Nikon and Group companies in Japan as of the year ended March 31, 2016 to promote activities unified throughout the entire group. We plan to apply this green purchasing from the year ending March 31, 2017.

We are planning to conduct a status survey of our main Group manufacturing companies in China as the first step to expand these same efforts for overseas Group Companies.

Green Purchasing Ratio

	Results for the Year Ended March 31, 2016
Nikon Corporation	98%
14 Group companies in Japan	95% to 100%

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Conservation of Forest Resources

As part of its conservation of forest resources, the Nikon Group is committed to reducing its use of paper.

Furthermore, we recommend the conversion to paper that is friendly for sustainable use of forest resources based on the Paper Procurement Policy formulated in 2013 for the paper resources we use.

Paper Procurement Policy

Established April 25, 2013

Policy:

Nikon shall procure paper with concern given to biodiversity conservation and sustainable use of forest resources.

Operation Policy:

- In procuring paper, Nikon shall preferentially purchase paper made with concern for the environment based on the following principle: We shall preferentially purchase FSC-certified paper or 100% recycled paper (R100).
- In case the paper described in item 1 above is unavailable, we shall purchase the following as a second-best paper:
 - Paper certified by a reliable certification system other than the FSC or recycled paper other than R100.
Ensure that the paper is not obtained from a forest of high protective value, such as those defined as HCVPs or by the FSC; or
 - Paper confirmed to be compliant with relevant laws and regulations.
Raw timber for the procured paper shall be trimmed following an appropriate procedure according to laws pertaining to forests in the country or region where the raw timber is produced.
- We shall avoid purchasing paper materials made by a company deemed to have environmental or social problems in its material procurement and business activities.

■ Conversion to FSC-certified Paper*

Based on the Paper Procurement Policy, we are switching the paper we use to FSC-certified papers in order of priority evaluated by the usage amount and impact to the society.

All papers used for the catalogs of the Imaging Business products have been completely switched to FSC-certified papers in Japan. Also, our corporate envelopes and name cards given to external stakeholders by the corporate departments of Nikon have been switched to FSC-certified paper as of the year

ended March 31, 2016.

We will work on the transition to FSC-certified paper for paper used in our business divisions as our environmental action plan for the year ending March 31, 2017.

* FSC-certified paper

Paper certified that it is made by using timber of appropriately managed forests.

■ Participating in the Consortium

We frequently hear reports of numerous problems involving the decline in the world's natural forests, but the proper paper procurement performed by only a single company has limited impact. Therefore, Nikon has participated in the Consortium for Sustainable Paper Use (CSPU) since June, 2014. The consortium was established jointly by the corporations who do their efforts on paper use actively, World Wide Fund for Nature (WWF) Japan, an international environmental conservation NGO, and Response Ability, Inc. Its objective and goal is to encourage and expand sustainable use of paper throughout society. Nikon is developing its own initiatives through exchanges of information with member companies, and also contributing to informing society as a whole of the appropriate use of paper. We have participated in a dialogue with paper companies and supplier companies in the year ended March 31, 2016. It has been a good opportunity to gain specific keys to promoting the transition to FSC-certified paper while deepening our understanding of the current supply chain by exchanging ideas with eight paper manufacture companies, printing companies, and suppliers that sell office supplies such as copy paper.



CSPU's logo

■ Conversion of Usage of Paper

In the year ended March 31, 2016, Nikon and its Group companies in Japan have set a target to reduce the amount of copy/printout paper purchased by 5% compared to the amount of the year ended March 31, 2015. Due to large reduction in the year ended March 31, 2015 (20.6% compared to the previous year) through introducing central management system of amount of copy paper used, there were only minor chance for reduction and the target was not achieved. We will introduce the same system to overseas Group companies going forward.

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Protection of Water Resources

The Nikon Group recognizes the importance of water resources and endeavors to protect water resources. Because the risk related to water resources is different according to the regions, the Nikon Group grasps the amount of water and the way of use, and manages appropriately at each facility and Group manufacturing companies. Among all of the Nikon Group products, especially optical components require large quantities of water resources in the manufacturing process. Therefore, the facilities and Group manufacturing companies that produce optical components treat the wastewater from the manufacturing process properly and promote its reuse actively. Also, the reduction of water usage is strictly managed through water conservation activities.

The amount of water used for the year ended March 31, 2016 was 2,769 thousand m³ in Nikon and Group manufacturing companies in Japan and 1,098 thousand m³ in Group manufacturing companies outside Japan.

■ Examples of the Circulative Use of Water

The quantities of water resources used by Nikon Corporation's Sagami-hara Plant, which is responsible for an integrated process to manufacture optical materials and process optical components, accounts for about 50% of use by the Nikon Group in Japan. The waste gas cleaning equipment at the plant uses a large quantity of water. This equipment removes acid components contained in gas leftover from the glass manufacturing process by using water as an adsorbent. Therefore, the Sagami-hara Plant recovers, recycles and reuses the water used for the waste gas cleaning equipment. As a result, the use of circulated water accounts for approximately 60% of the total water used in the cleaning process.

In addition, about 30% of the total water used in the finishing process is circulated at Hikari Glass Co., Ltd., which manufactures optical glasses and optical glasses related components.

Nikon Imaging (China) Co., Ltd. conserves approximately 22,800 tons of water a year through initiatives that include the reuse of concentrated water discharged from RO water* purification process as water for toilets.

* RO water

RO water refers to pure water removing foreign contaminants through Reverse Osmosis (RO).



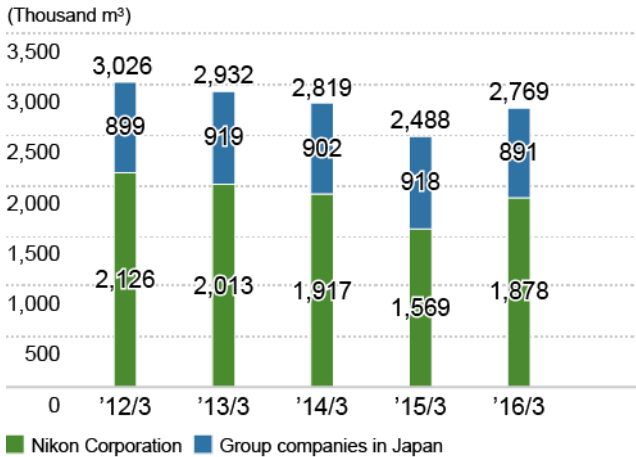
Reuse of concentrated water discharged from the RO water* purification process at Nikon Imaging (China) Co., Ltd.



Concentrated water storage

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Water Use by Nikon Corporation and Group Companies in Japan



* Boundaries (in and outside Japan) was expanded from '16/3.

Breakdown of Water Use by Nikon Corporation and Group Companies in Japan (Year Ended March 31, 2016)

