

Protecting and Conserving the Environment

Environmentally Conscious Management

Canon works to protect and conserve the environment throughout the product lifecycle.

Canon's Approach to Environmental Assurance

Acting on the foundation of its Approach to Sustainability (→P21–22), Canon works to protect and conserve the global environment in line with the Canon Group Environmental Charter and the Canon Environmental Vision.

Canon Group Environmental Charter

Corporate Philosophy: *Kyosei*

Achieve corporate growth and development while contributing to the prosperity of the world and the happiness of humankind.

Environmental Assurance Philosophy

In the interest of world prosperity and the happiness of humankind, pursue maximization of resource efficiency, and contribute to the creation of a society that practices sustainable development.

Fundamental Policies for Environmental Assurance

Seek to harmonize environmental and economic interests in all business activities, products and services (the EQCD concept); offer products with lower environmental burden through innovative improvements in resource efficiency, and eliminate anti-social activities that threaten the health and safety of mankind and the environment.

EQCD Concept

E: Environment	Companies are not qualified to manufacture goods if they are incapable of environmental assurance.
Q: Quality	Companies are not qualified to market goods if they are incapable of producing quality goods.
C: Cost	Companies are not qualified to compete if they are incapable of meeting cost and delivery requirements.
D: Delivery	

1. Optimize the organizations for prompting the Canon Group's global environmental efforts, and promote environmental assurance activities for the Group as a whole.
2. Assess the environmental impact of entire product lifecycles and explore ways to minimize environmental burden.
3. Promote the research and development of technologies and materials essential for environmental assurance and share the achievements with society.
4. Comply with all applicable laws in each country/region and other requirements the Canon Group agrees upon with stakeholders, and promote energy and resource conservation and elimination of hazardous substances in all corporate activities.
5. In procuring and purchasing necessary resources, give priority to materials, parts and products with lower environmental burden.
6. Establish an Environmental Management System (EMS) and establish and periodically review environmental objectives and targets to prevent environmental pollution and damage, and steadily reduce environmental burden.
7. Actively disclose to all stakeholders information on environmental burden and keep them updated on the progress of environmental measures.
8. Raise the environmental awareness of employees and educate them to take the initiative in environmental protection.
9. Maintain close relationships with governments, communities, and other interested parties, and actively support and participate in environmental protection activities.

23 March, 2007
Chairman & CEO
Canon Inc.



Canon Group Environmental Charter

Canon Environmental Vision



Through technological innovation and improved management efficiency throughout all of its corporate activities, Canon aims to achieve sustainable corporate growth while also realizing a society that promotes both enriched lifestyles and the environment.

To this end, Canon offers greater value using fewer resources throughout the entire product lifecycle — Produce, Use, Recycle— to achieve highly functional products with minimal environmental burden. Canon continues to expand these activities with its customers and business partners.

Canon will contribute to a future that promotes both enrichment and the environment through technological innovation.

Canon Environmental Vision

Environmental Targets and Achievements

For 2050

We aim to achieve net-zero CO₂ emissions for the whole product lifecycle* by 2050.

For 2030

By consistently achieving the target of an average annual 3% improvement in the index of lifecycle CO₂ emissions per product unit, including Scope 3 as well as Scope 1 and 2 emissions, we aim to realize a 50% emissions reduction in 2030 compared to 2008.

* Scope 1: Direct GHG emissions (combustion of city gas, LPG, light oil, kerosene, non-energy derived GHG, etc.)
Scope 2: Indirect GHG emissions (consumption of electricity, steam, etc.)
Scope 3: Supply chain-related GHG emissions (production of purchased goods and services [Category 1], upstream transportation and distribution [Category 4], use of sold products [Category 11])

Medium-term Environmental Targets Overall target, product targets, operational site targets and achievements

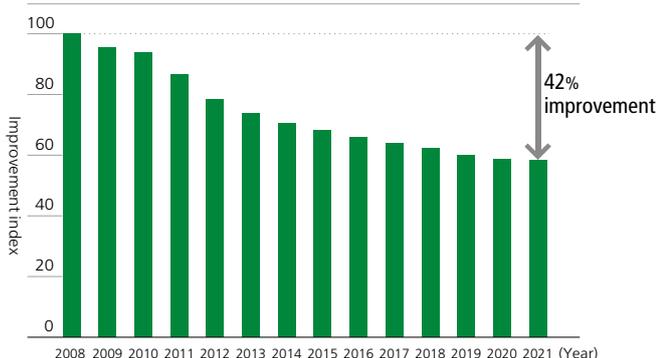
	2021–2023 Medium-term Environmental Targets	2021 Achievements	2022–2025 Medium-term Environmental Targets
Overall (Lifecycle)	3%-per-year average improvement in lifecycle CO ₂ emissions improvement index per product	Avg. improvement: 4.3% p.a. (2008–2021)	3%-per-year average improvement in lifecycle CO ₂ emissions improvement index per product
Products	3%-per-year average improvement in raw materials and use CO ₂ emissions improvement index per product	Avg. improvement: 2.6% p.a. (2008–2021)	3%-per-year average improvement in raw materials and use CO ₂ emissions improvement index per product
	2021 Environmental Targets	2021 Achievements	2022 Environmental Targets
Operational Sites	Improve energy consumption per basic unit at operational sites* (excluding marketing sites) by 1.2% (compared to 2020)	8.0% improvement over 2020	Improve energy consumption per basic unit at operational sites* (excluding marketing sites) by 1.2% (compared to 2021)
	Improve total waste generation per basic unit at operational sites* (excluding marketing sites) by 1% (compared to 2020)	4.9% improvement over 2020	Improve total waste generation per basic unit at operational sites* (excluding marketing sites) by 1% (compared to 2021)
	Improve water usage per basic unit in production* (excluding marketing sites) by 1% (compared to 2020)	5.4% improvement over 2020	Improve water usage per basic unit in production* (excluding marketing sites) by 1% (compared to 2021)
	Improve emissions of controlled chemical substances per basic unit at operational sites* (excluding marketing sites) by 1% (compared to 2020)	1.0% improvement over 2020	Improve emissions of controlled chemical substances per basic unit at operational sites* (excluding marketing sites) by 1% (compared to 2021)

* The basic unit denominator is decided according to the characteristics of each operational site (production volume, effective floor area, workforce, etc.)

Progress Relative to Overall Target

Against the target of a 3% average annual improvement in the index of lifecycle CO₂ emissions per product unit, we realized an average annual improvement of 4.3% between 2008 and 2021 for a cumulative total improvement of 42%. In 2021, we progressed with related activities, including initiatives in both operations and product design to improve energy efficiency based on the whole product lifecycle. Unfortunately, disruption of logistics operations owing to COVID-19 and other factors limited the rate of achievable improvement. However, the disruption is temporary and we expect to return to a path of continuous improvement.

Lifecycle CO₂ Emissions Improvement Index per Product



* Indexed to 2008 = 100

Achievement of Product Targets

We continued with initiatives, including efforts to make products more compact, lightweight, and energy efficient, and achieved an average annual improvement of 2.8% (2008–2021) in raw materials and use CO₂ emissions per product, falling just short of our target of 3%.

Achievement of Operational Site Targets

■ Energy consumption per basic unit at operational sites

We are working to reduce energy consumption at operational sites by consistently meeting our target for reduction of consumption per basic unit. In 2021, energy consumption per basic unit improved by 8.0% over the previous year, exceeding the 1.2% improvement target.

■ Total waste generation per basic unit

We are working to reduce total waste emissions by consistently meeting our target for reduction of emissions per basic unit. As a result of such initiatives as reducing waste at production sites and recycling waste generated internally at production sites, we met our target of a 1.0% improvement with a 4.9% reduction in total waste generation over 2020.

■ Water usage per basic unit in production

We are working to reduce water consumption by consistently meeting our target for reduction of consumption per basic unit. Water usage per basic unit of production declined by 5.4% compared to 2020 on the strength of efforts to improve water management. This means that we successfully met our target of a 1.0% improvement.

■ Emissions of controlled chemical substances per basic unit

We are working to reduce emissions of controlled chemical substances by consistently meeting our target for reduction of emissions per basic unit. We achieved a 1.0% improvement over 2020 in emissions of controlled chemical substances per basic unit, attaining our target of a 1.0% improvement, by reducing chemical substances used in manufacturing processes and reusing materials.

Protecting and Conserving the Environment

Overview of Environmental Impacts

Total product lifecycle CO₂ emissions (Scope 1-3)*1 in 2021 were approximately 7.62 million tons.

CO₂ emissions from raw materials decreased from 2020 due to delays in parts supply caused by COVID-19.

On the other hand, operational site emissions increased due to a recovery in production, and logistics CO₂ also

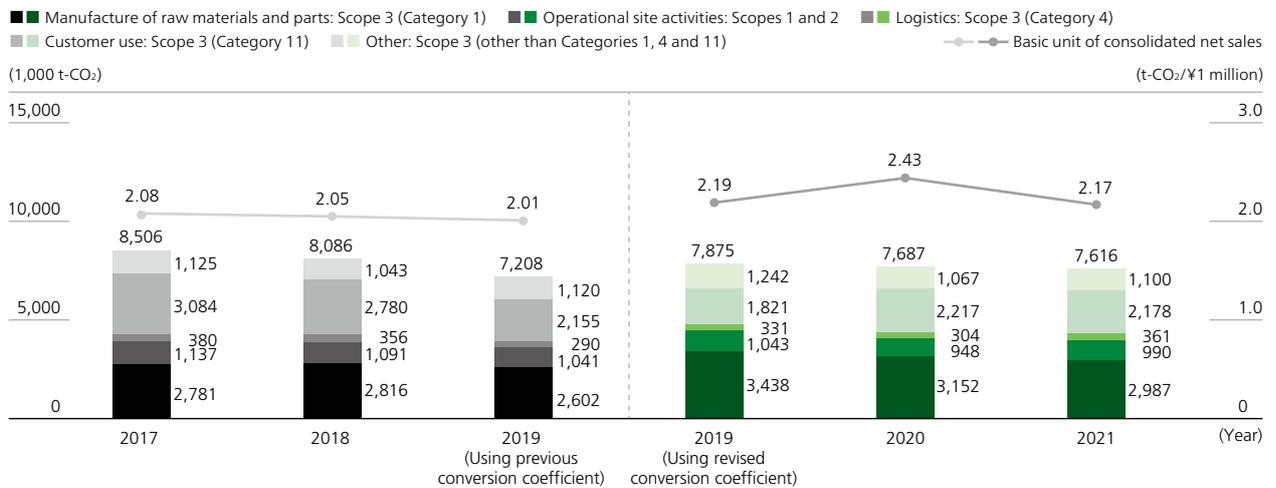
increased due to the impact of logistics disruptions caused by COVID-19. As a result, energy and resource conservation efforts resulted in a reduction of approximately 70,000 t-CO₂ over the entire product life cycle. The resources (input) that Canon used in its business activities over the entire product lifecycle are as shown in the following figures.

*1 Scope 1: Direct GHG emissions (combustion of city gas, LPG, light oil, kerosene, non-energy derived GHG, etc.)

Scope 2: Indirect GHG emissions (consumption of electricity, steam, etc.)

Scope 3: Supply chain-related GHG emissions (production of purchased goods and services [Category 1], upstream transportation and distribution [Category 4], use of sold products [Category 11])

Lifecycle GHG Emissions (CO₂ Equivalent)



* Change in CO₂ conversion coefficient: Following the merging of the Carbon Footprint Communication Program and the Eco-Leaf Environmental Label into the Eco-Leaf Environmental Label Program, from 2020 the CO₂ conversion coefficient used for raw materials and processing is that of the latter program (figures up to 2019 are calculated using that of the former program). The CO₂ conversion coefficient used for logistics operations reflects the changes adopted by the Clean Cargo Working Group (CCWG)

Scope 3 GHG Emissions in 2021

Category	Scope	2021 (1,000 t-CO ₂ e)	Calculation Method
1	Purchased goods and services	2,987	Calculated by multiplying the weight of each material input (including any inputs emitted as waste) by the emission factor for each material/process.
2	Capital goods	525	Calculated by multiplying the total amount of each asset category of purchased capital goods by the emission factor for each asset category.
3	Fuel- and energy-related activities not included in Scope 1 or Scope 2	158	Calculated by finding the total for fuel and electricity usage at each operational site and then multiplying it by the emission factor from fuel extraction to burning and power generation.
4	Upstream transportation and distribution	361	Logistics from the supplier to Canon production sites is calculated by finding the average transport distance and transport volume and then multiplying it by the emission factor for transportation. Logistics from production site to customer's warehouse is calculated by multiplying the emission factor of transportation by logistics performance data.
5	Waste generated in operations	3	The total weight of waste generated by material and disposal process at each operational site is derived and then multiplied by the end-of-life treatment emission factor.
6	Business travel	38	The emission factor for each transportation method is multiplied by the total payment amount for each transportation method. For business travel using a personal vehicle, the total payment amount is converted to fuel usage and then multiplied by the emission factor for fuel consumption.
7	Employee commuting	144	The emission factor for each transportation method is multiplied by the total payment amount for each transportation method. For commutes by private vehicle, total fuel usage is derived from amounts paid and then multiplied by the emission factor for fuel consumption.
8	Upstream leased assets	0	CO ₂ emissions from leased buildings and vehicles are applicable, but both are included in Scope 1 and Scope 2.
9	Downstream transport and distribution	44	Average transport distance and weight of transported products is calculated for each region and multiplied by the emission factor for transportation.
10	Processing of sold products	0	Emissions from production by outsourcing partners of intermediate products used in sale of Canon-branded products are included in Category 1.
11	Use of sold products	2,178	Lifetime energy usage is calculated for each product and then multiplied by the average electricity emission factor.
12	End-of-life treatment of sold products	187	Sold products are categorized by material and then the emission factor of end-of-life treatment is multiplied by each based on the volume of materials used.
13	Downstream leased assets	0	Leased assets such as multifunction devices are included in Category 11 above together with sold products.
14	Franchises	0	Not applicable
15	Investments	0	Not applicable
Scope 3		6,626	

Basic Approach to CO₂ Calculations

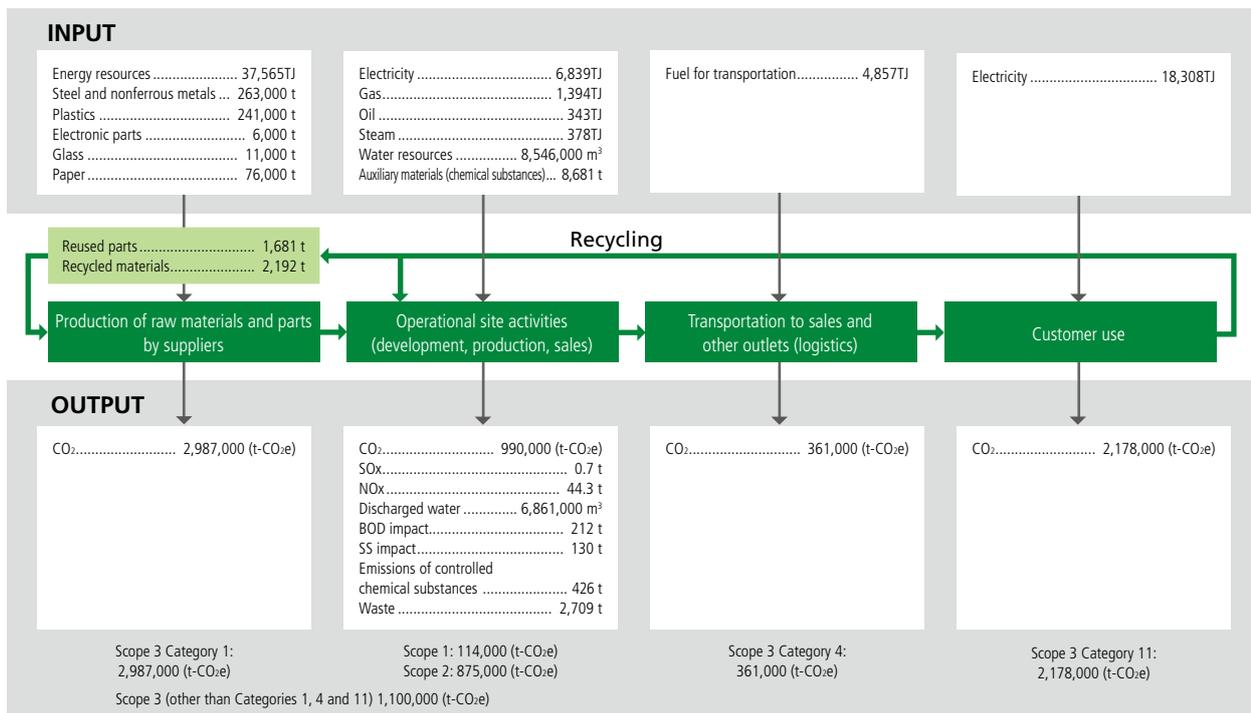
Canon compiles data for greenhouse gas (GHG; energy-derived greenhouse gas CO₂, and non-energy derived greenhouse gases PFCs, HFCs, SF₆, N₂O, methane, and NF₃) designated under the Kyoto Protocol (revised version).

For CO₂ emission factors for electricity, figures provided by individual electric supply companies are used, but publicly disclosed region-specific figures are used when figures are not provided by electric supply companies (Please refer to Operational Sites Covered in the Environmental Section on page 133). As the latest CO₂ conversion coefficients become public after compilation of CO₂ data for the report, the data are adjusted retroactively in subsequent reports. For figures on customer use, electricity consumption of products shipped in a given year is calculated based on the average lifetime and printing volume, and converted to the CO₂ equivalent using CO₂ emission factors for electricity, which are calculated in the same way as the above methods. Past data may be revised due to improvements in the precision of data collection.

Third-party Verification of GHG Emissions (Converted to CO₂)

Third-party verification has been obtained for CO₂ emissions data and basic unit of consolidated net sales appearing in "2021 Material Balance" and "Lifecycle GHG Emissions (CO₂ Equivalent)" in 2020/2021 and for each figure in "Scope 3 GHG Emissions in 2021."

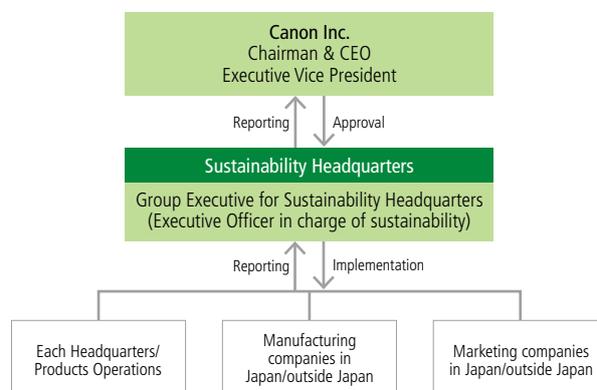
2021 Material Balance



Global Environmental Promotion System

The Canon Group is carrying out environmental assurance activities to achieve our environmental targets and realize the environmental vision. Led by Sustainability Headquarters under the supervision of the Executive Vice President of Canon Inc., we carry out environmental activities in a global system that unites product operations, production sites and marketing companies worldwide. The Group Executive for Sustainability Headquarters, a position occupied by an executive officer of Canon Inc., reports each month to the Executive Vice President on all environmental activities to gain approval. When an environment-related global issue arises, such as climate change, whose impact on the Canon Group businesses needs to be assessed, the Group Executive for Sustainability Headquarters reports it to the Chairman & CEO and Executive Vice President and seeks approval for the direction in response to the associated risks and opportunities as well as related measures to be taken.

Global Environmental Promotion System



Protecting and Conserving the Environment

Environmental Management System

The Canon Group has established an environmental management system (EMS) covering its operational sites worldwide as a mechanism for continually improving the environmental assurance activities according to ISO 14001.

The EMS promotes environmental assurance activities (Do), which are linked with activities of each division (products operations, operational sites, and Group companies). In turn, we set annual and medium-term environmental targets (Plan) and establish action plans and important measures to achieve those targets, which are reflected in our business activities. Moreover, we carry out Environmental audits to check the progress of initiatives as well as any issues to be addressed in each division, and Environmental performance evaluations, to assess our environmental performance (Check). We then work to continually improve and enhance our environmental assurance activities (Act). By implementing the PDCA cycle for environmental assurance activities of each division, we achieve continual improvement and reinforcement and advance the environmental assurance activities of the entire Canon Group.

Sustainability Headquarters ensures the smooth management of this system by gathering information on environment-related laws and regulations, establishing environmental policies and rules for the entire Group, and planning and managing evaluation methods for environmental assurance activities.

Manufacturing and marketing companies worldwide obtain ISO 14001 consolidated certification as an objective third-party evaluation of EMS effectiveness. As of 2021, ISO 14001 certification covers Canon Inc. as well as 123 Group companies (587 operational sites) in 40 countries and regions.* We received the positive evaluation from the accreditation body that “within the context of a business environment undergoing great change, the Canon Group as a whole has identified new risks and opportunities associated with prospective expansion into new business domains, and has incorporated these in its EMS.”

The acquisition of consolidated Group certification has supported strengthening of corporate governance and efficient environmental management. Sustainability Headquarters oversees Canon’s environmental assurance activities and reports on the progress of relevant activities for the approval of the Chairman & CEO of Canon Inc. as well as the Executive Vice President.

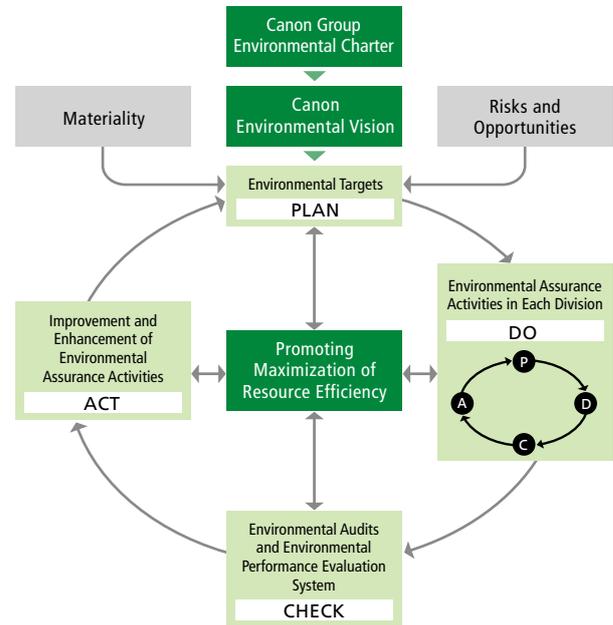
* Details

1. 99.9% of Canon Inc. and consolidated manufacturing companies worldwide (100 or more employees) obtained ISO 14001 certification, based on CO₂ emission volume

2. Certifications Obtained

<https://global.canon/en/environment/data/pdf/canon-list-e.pdf>

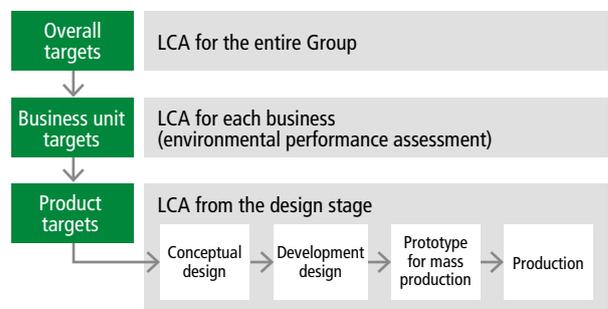
Canon’s Environmental Management System



Product Development System Using LCA Methodology

Canon’s environmental initiatives are undertaken over the entire product lifecycle. Lifecycle assessment (LCA) methodology has been introduced in the product development stage to reduce environmental impacts throughout the product lifecycle. Canon has established an LCA development management system that can centrally manage all processes from product development to information disclosure. This system is seeking to enable calculation of CO₂ emissions from the development and design stages, to be used in developing products to achieve environmental targets.

Flow Chart of Environmentally Conscious Design Using LCA Methodology



Details: Canon’s Lifecycle Assessment

<https://global.canon/en/environment/lca/index.html>

Product Environmental Assessments

Canon conducts an environmental assessment during the commercialization process to check whether a product meets product environmental legal requirements and other requirements applicable for products and has achieved the necessary environmental performances.

We start the assessment by assigning an environmental performance target to the product at the product planning stage. Before the decision is made to commercialize the product and initiate mass production, Canon evaluates whether this target has been met, and ascertains whether the product also satisfies the applicable legal and other requirements.

Confirming the Effectiveness of Environmental Management

Canon uses an internal environmental audit to confirm the effectiveness of its environmental management system. The audits are composed of headquarters environmental audits performed by Sustainability Headquarters, and operational site environmental audits and product environmental audits conducted by the audit divisions of operational sites and products operations. Mutual cross-site audits are carried out in certain locations.

Results of internal environmental audits are compiled by the Group audit management section of Sustainability Headquarters and reported to the Chairman & CEO and the Executive Vice President in management reviews.

In 2021, the audits found no major nonconformity or violations. From the perspective of continual improvement and prevention, we are taking steps to rectify even minor findings in operations management.

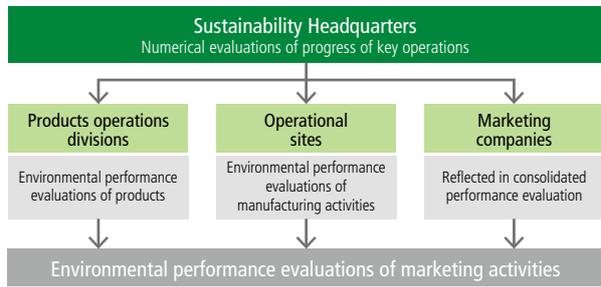
Environmental Performance Evaluations Coordinated with Business Management

Through environmental performance evaluations, the outcomes of the environmental activities at individual Headquarters divisions, operational sites and marketing companies are evaluated and scored twice yearly. Since 2001, these scores have been incorporated alongside business performance in consolidated performance evaluations.

Sustainability Headquarters sets the environmental evaluation criteria and carries out the evaluations, which account for approximately 10% of the overall consolidated performance evaluation. Criteria for environmental evaluation mostly cover compliance with laws and company rules, achievement of environmental targets, improvement in the environmental performance of products, and environmental communication.

The evaluation results are announced within the Group on a half-yearly basis. The results are used in the evaluation of the executive officer in charge of

Environmental Performance Evaluation Process



a Headquarters division and the president of a Group manufacturing or marketing company. In this way, Canon incorporates the environment into its business performance evaluation.

Monitoring of Progress toward Environmental Targets

Each operational site makes a monthly report to Sustainability Headquarters regarding its energy consumption (CO₂ emissions volume), waste generation volume, chemical substance emissions volume, and water utilization volume. The GEC aggregates the data to monitor progress toward environmental targets and reports monthly to the Board of Directors, business department general managers, and the executive management of Group companies. Additionally, the evaluation and the risks identified are subject to the PDCA cycle for environmental assurance activity within the shared framework of the Group's ISO 14001-based environmental management system.

Environmental Awards and Environmental Exhibition

To promote improved staff awareness and activities in relation to the environment, in 2003 Canon started holding an internal exhibition introducing good examples of environmental activities in Japan. The exhibition went global in 2008, when examples of overseas activities were also included. And in 2009, the exhibition developed into the environmental award system, in which top management awarded outstanding environmental activities. The exhibition and the award system have enabled management to identify outstanding examples of good environmental practice and promote their company-wide implementation while also serving as a valuable opportunity to raise the environmental awareness of employees. Started in 2013, the simultaneously held online exhibition on the Group intranet has allowed many Group employees to access the exhibition all year round, helping to hasten the horizontal implementation of good practices across the entire organization.

Moreover, the efforts of the design team and Sustainability Headquarters to together create and

Protecting and Conserving the Environment

distribute posters to Group companies worldwide also help raise employee awareness about the environment globally.

Since 2020, we are making use of the online exhibition and carrying out all other activities online, including judging outstanding examples of good practice, continuing to carry out the Environmental Awards and Environmental Exhibition initiatives even during the COVID-19 pandemic.



Online exhibition website

Environmental Education

Canon's environmental education programs provide basic environmental training to all employees, and specialized training for employees engaged in specific types of work.

The basic environmental training aims to equip employees with an awareness of the importance of environmental assurance activities and an understanding of related policies and targets, while the aim of the specialized training program is to enable employees involved in environmental assurance activities to acquire knowledge and expertise.

The specialized training program consists of product environment, operational site environment and environmental audit sections. Of these, product environment training enables those responsible for product environmental assessments and product surveys to acquire knowledge and expertise.

These educational programs are designed to enable employees to receive needed training at a time that suits their schedule and in the format that best suits the purpose, whether e-learning, group discussion, group work, or other method.

In particular, among the specialized environmental training programs, Canon is focusing attention on risk management education globally, and has been using training materials in English and Chinese since 2016. In 2021 also, we carried out training for employees involved in risk management-related work (total of approximately 8,000 participants).

Since 2017, we have also provided recycling training as part of the hands-on factory training for newly hired technicians and engineers. At Canon Ecology Industry, a recycling site, practical training in recycling is given, including instruction in how to disassemble multifunctional office equipment.

Environmental Communication Information Disclosure to Stakeholders, Education and Awareness

Canon has been vigilant in disclosing environmental information to a diverse range of stakeholders. Besides the publication of this report, Canon actively uses a range of media and platforms to inform stakeholders about its environmental activities, including its official environment website, various exhibitions, and other events.

Canon also promotes environmental education and awareness activities for the benefit of people in regional communities, providing environmental outreach classes for elementary school students and environmental programs run in cooperation with regional organizations. Canon has held a total of over 220 outreach classes on toner cartridge recycling since 2011 for more than about 11,000 participants.

Details: Environmental Outreach Classes
<https://cweb.canon.jp/ecology/delivery-class> (Japanese website only)

Initiatives at Canon Eco Technology Park

The Canon Eco Technology Park, which opened in February 2018, is not only a cutting-edge recycling plant but also serves as a focal point of the environmental activities of the Canon Group. The facility offers tours of Canon's automated toner and ink cartridge recycling systems as well as a showroom introducing Canon's wide variety of environmental activities, such as the Canon Bird Branch Project, through information panels, videos, and hands-on content. Unfortunately, COVID-19 concerns in 2020 and 2021 made opening the Park to the general public difficult, but we are working to enhance operations to deal with the pandemic, such as conducting online environmental education.

Details: Canon Eco Technology Park
<https://global.canon/ja/environment/ecotechnopark/>
(Japanese website only)
(For inquiries on educational visits and related matters, please contact us through the website shown above.)

Online Environmental Education

We are using online media to enhance the environmental education curriculum offered by the Canon Eco Technology Park. Based on the environmental education we have previously offered in face-to-face settings, we are now presenting online demonstrations of the waste sorting methods practiced at the facility. This interactive communication-style program enables children to enjoy learning and thinking about the importance of resource recycling as well as the SDGs and other environmental issues. In 2021, the program was offered to ten elementary schools in the locality of the Park, giving approximately 300 children the opportunity to learn about Canon initiatives and the importance of resource recycling.



Online environmental education

Contributing to a Forestation Project in Ireland

Group company Axis is collaborating in a reforestation project by Cloudforests, a social enterprise that promotes initiatives to address climate change and other social issues. The project, which aims to create 100 forests in Ireland, operates using funds from sponsor companies. A unique feature of the project is the opportunity for sponsors to make a virtual visit whenever they wish to the forest they helped finance to watch it grow. The 4K cameras and Zipstream image data compression technology from Axis make it possible to transmit high-resolution images from remote locations without losing clarity, enabling the virtual visits. The project has already established three forests. We will further strengthen collaboration to expand the project going forward, contributing to the resolution of climate change issues and the protection of biodiversity.



Axis 4K camera

In-house Workshops on the Circular Economy

Group companies in the EMEA (Europe, Middle East, and Africa) region have launched an initiative known as Circular Economy Employee Engagement. The initiative takes a proactive approach, using videos and other information channels to raise employee awareness of the circular economy.

An online workshop titled "Circular Economy Hackathon" was organized as part of the initiative for employees. The 64 participants from the EMEA region broke into teams to discuss more efficient use of resources around themes such as logistics and packaging, generating a number of ideas.

A similar online workshop held in French-speaking countries attracted more than 200 participants, including employees from Canon France and Canon Switzerland, who engaged in lively discussion.

Going forward, Canon aims to put into practice the ideas generated by the workshops.



"Circular Economy Hackathon" online workshop

Environmental Regulatory Compliance and Response to Complaints

As a result of implementing an environmental management system coordinated across the Group, Canon came through 2021 without a single legal violation or accident that seriously impacted the environment, including incidents relating to water quality or quantity permits.

Although there were some complaints about noise at our operational sites, all issues were resolved satisfactorily via appropriate measures.

Contributing to a Carbon-free Future

Canon is working to reduce CO₂ emissions at all stages of the product lifecycle.

Canon's Initiatives and Their Relation to Sustainable Development Goals (SDGs) Targets

<p>Contributing to a Carbon-free Future (Climate Change, Energy)</p> 	• Designing energy-efficient products	Target 13.2*	Target 7.3*
	• Expanding use of renewable energy	Target 13.2*	Target 7.2*
	• Improving energy efficiency at operational sites	Target 13.2*	Target 7.3*
	• Reducing CO ₂ emissions from logistics	Target 13.2*	Target 7.3*

* Target 7.2: Increase substantially the share of renewable energy in the global energy mix
 Target 7.3: Double the global rate of improvement in energy efficiency
 Target 13.2: Integrate climate change measures into national policies, strategies, and planning

Initiatives for a Carbon-free Future

Canon seeks to consistently meet its environmental targets and, beyond that, is working toward net-zero CO₂ emissions from its business activities by 2050. To that end, we quantify emissions during the whole product lifecycle—from the upstream supply of raw materials and parts through operational site activities and logistics to customer use—and use technology to reduce emissions at each stage.

Environmentally Conscious Designs for Office Equipment

The multifunction office device imageRUNNER ADVANCE DX C5860i pursues energy-efficient design through features such as a newly developed low-melting point toner and a motor that optimally controls the electric current, thus achieving an approximately 13% reduction in CO₂ emissions during customer use compared to the previous model. Additionally, optimization of the thickness of the outer frame and the use of a plastic frame on some units contribute to a weight reduction of more than 25% compared to the previous model. This reduces the amount of CO₂ generated by raw material procurement. Moreover, higher output productivity with small paper sizes and a range of adaptations for quieter operation enhance its core performance as a multifunction device. These and



imageRUNNER ADVANCE DX C5800 Series

other upgrades achieve the combined goal of reducing lifecycle environmental impact while also enhancing product performance.

Contributing to Energy Efficiency in the SACL A X-ray Free Electron Laser

SACL A is an X-ray free electron laser facility operated by the Japanese government research institute Riken. It enables real-time observation and analysis of molecular structure, making it highly useful in the development of pharmaceuticals and other materials. The power source for SACL A's electron beam accelerator is provided by klystrons manufactured by Canon Electron Tubes & Devices Ltd. Their product achieves energy savings of approximately 14% compared to the previous klystron product through improved microwave conversion efficiency, which has enabled a yearly saving of approximately 730 tons of CO₂ for the facility as a whole.



SACL A X-ray free electron laser facility

Identification of Carbon Footprint

Calculation of Carbon Footprint

Canon has introduced lifecycle assessment (LCA) methodology to calculate CO₂ emissions for the whole product lifecycle. Additionally, to enable customers to select products with lower CO₂ emissions, we work to disclose relevant information based on our Carbon Footprint of Products (CFP) certification under the CFP Communication Program of the Sustainable Management Promotion Organization (SuMPO).

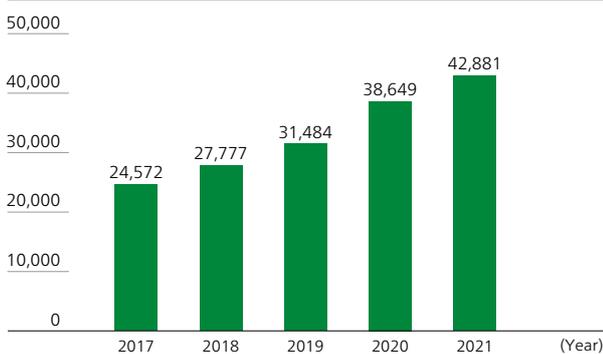
Additionally, by utilizing the Carbon Offset Program making use of CFP* promoted by the Ministry of Economy, Trade and Industry (Japan), we have been able to realize products with practically zero lifecycle CO₂ emissions. With some of these products, such as the imageRUNNER ADVANCE series and imagePRESS production printers, customers can report to the authorities, based on the Act on Promotion of Global Warming Countermeasures (Japan), that they do not produce the CO₂ emissions that would ordinarily be expected from use of the products.

Carbon offsets linked to customer demand from when we began using this system in 2014 until 2021 totaled 42,881 t-CO₂.

* Carbon offset program enables one's GHG emissions that are difficult to reduce to be offset wholly or partially by cuts in emissions or amounts absorbed by other parties

* This offset does not represent an offset by Canon of lifecycle CO₂

Carbon Offsets Linked to Customer Demand (Cumulative) (t-CO₂)



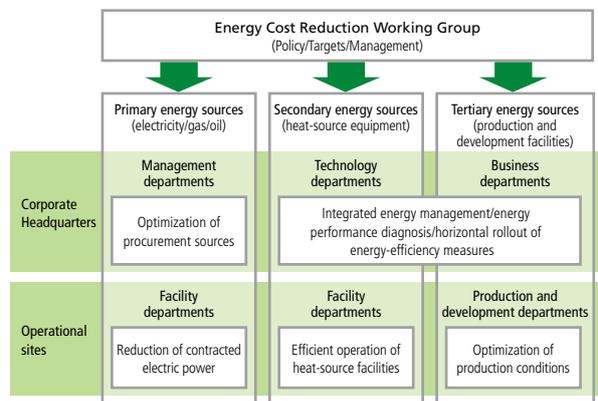
Reference: Products registered for EcoLeaf Environmental Labeling Program (Japanese website only)
<https://canon.jp/corporate/csr/environment/customer/products/cfp/>
 Reference: Products certified under Carbon Offset Program making use of CFP (Japanese website only)
<https://canon.jp/corporate/csr/environment/customer/products/cfp-certified/>

CO₂ Reduction Through Initiatives at Operational Sites

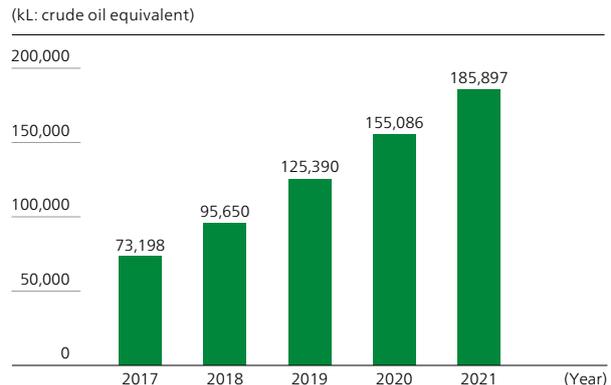
Canon created the Energy Cost Reduction Working Group in 2014 as a horizontally integrated organization to take Group-wide action on reducing energy consumption. The group has worked to reduce energy consumption by undertaking a thorough-going review of operating conditions at production sites, for instance

by cutting out excess use of pressurized air and cooling water and adjusting air conditioner settings. Measures that prove effective are adopted for horizontal rollout to Japan and overseas production sites. Moreover, staff members from our corporate headquarters in charge of this initiative perform a diagnosis of energy performance during visits to production sites all over the world. There, they check the operating status and settings of production equipment and then use their observations to make improvements to the operating efficiency of facilities and equipment and provide staff with relevant on-site training. Since the launch of this initiative, it has resulted in a Group-wide energy saving of 185,897 kL (crude oil equivalent).

Organizational Chart of Energy Cost Reduction Working Group



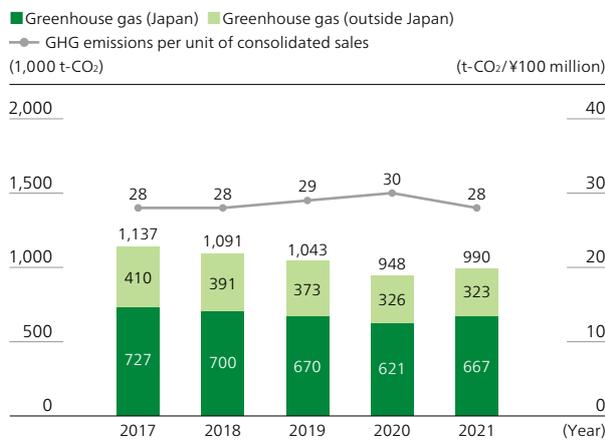
Cumulative Energy Savings Through Working Group Activities (Cumulative) (kL: crude oil equivalent)



We continued to pursue efforts to reduce greenhouse gas emissions at operational sites in 2021, driven by the activities of the Energy Cost Reduction Working Group and other initiatives. However, the rebound in production activities that were hard hit by COVID-19 in 2020 resulted in a year-on-year increase of approximately 4% to 990 kt-CO₂. Still, this represents a decrease of about 5% over 2019 levels.

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Greenhouse Gas Emissions at Operational Sites



* For information on our basic approach to calculating greenhouse gas emissions, please refer to P58.

Effective Energy Utilization Through Joint Project with Outside Operators

In a joint undertaking in Utsunomiya City, Tochigi Prefecture, with the prefectural authorities and three other companies*¹, Canon launched the Kiyohara Industrial Park Smart Energy Project, realizing major energy savings. The project integrates the Kiyohara Smart Energy Center and other sites newly established within the Kiyohara Industrial Park. By sharing use of electric power and heat (steam and hot water) between multiple business sites with differing levels of demand, the project achieved reductions per base unit of approximately 20% in energy consumption and 20% in CO₂ emissions volume*²—which would not be possible for a single business site alone. In recognition of this initiative, Canon jointly received the Ministry of Economy, Trade and Industry Joint Implementation Award under the 2021 Energy Conservation Grand Prize sponsored by the Energy Conservation Center, Japan.

*¹ Calbee, Inc., Hisamitsu Pharmaceutical Co., Inc., and Tokyo Gas Engineering Solutions Corporation

*² Reduction for electricity and heat sent from cogeneration facilities and other energy centers (compared to 2015, actual values measured in 2020)



Energy Conservation Grand Prize award ceremony

Use of Renewable Energy

We are working to expand the use of renewable energy, especially in Europe and Asia, while taking regional renewable energy uptake status and economic efficiency into consideration. The headquarters building of Axis Communications in Sweden is equipped with solar panels and LED lighting. These and other features earned the facility the rating 'Excellent'—the second highest of five possible rating levels—in the Swedish version (BREEAM-SE) of the British BREEAM* environmental assessment standard. Meanwhile, marketing company Canon China, now uses 100% renewable energy for the electric power used at its offices. Also a new office of Canon Europe and Canon UK have obtained BREEAM* 'Excellent' ratings for their use of renewable energy.

As a result of these initiatives adapted to local conditions, total worldwide renewable energy consumption by Canon Group companies was 86,784 MWh in 2021, an approximate 6% increase over 2020. Group companies in Europe sourced about 45% of total energy needs from electric power. Of this electric power, generation from renewable sources accounted for around 82%.

* An environmental sustainability assessment method developed by Britain's Building Research Institute that evaluates buildings under nine categories, including health and wellbeing, energy, and waste.



Solar panels at Canon Production Printing Netherlands

Logistics Initiatives

Efficient logistics operations were challenging in 2021, but Canon undertook activities to reduce emissions to the greatest extent possible. We are working to reduce logistics-related CO₂ emissions at all stages from production through to sales. As one way to lessen environmental impact in this area, we are seeking to achieve a modal shift by switching from road to rail transport. Another initiative targets improved loading efficiency by designing products and outer cartons to best fit the container size. We are also achieving environmental impact reduction by reviewing transport routes and taking other measures to shorten distances, and by promoting "container round use," which means ensuring where possible that export and import

containers are utilized on both their inbound and outbound journeys within Japan.

Reducing CO₂ Emissions Through Shared Logistics (Vietnam)

Our production site in Vietnam is making efforts to reduce logistics-related CO₂ emissions. Canon Vietnam uses trucks to carry imported parts from the port to its site and then to take the manufactured products to the port for overseas export. As the volume of exported products is greater than that of imported parts, there was an issue with containers traveling empty from the port to the site. By teaming up with businesses who had the opposite issue of a greater import than export volume and who were therefore sending containers back empty from their site to the port, Canon Vietnam was able to share import and export containers, thus cutting the total number of truck journeys.

In recognition of Canon Vietnam's initiatives, Vietnam's Ministry of Natural Resources and Environment presented the company with the Vietnam Environmental Award 2020.

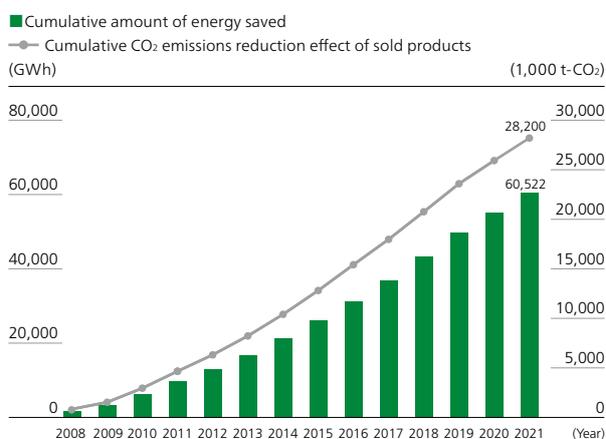


Award ceremony in Vietnam

Contributing to Society by Reducing CO₂ Emissions

Thanks to energy-saving technologies used in office equipment, Canon products achieved cumulative energy savings of 60,522 GWh between 2008 and 2021. This is expected to result in a CO₂ reduction of 28,200,000 tons.

Energy/CO₂-saving Effects of Office Equipment (Cumulative)



- * Covered products: Electrophotographic multifunction devices and laser printers for offices (excluding production printers).
- * Energy-saving effect using the average energy (electricity) consumed by products sold in 2007 as a baseline.
- * Cumulative yearly effect assumes that products sold in each year are used for 5 years.
- * CO₂ emissions factors are calculated by using the weighted average of sales per region based on emission factors published by the Federation of Electric Power Companies (in Japan) and the International Energy Agency (outside Japan).

In addition to reducing lifecycle CO₂ emissions through hardware measures, we are deploying IT solutions to improve the efficiency of work operations, reduce the movements of people and objects, and realize resource and energy savings. This also promotes CO₂ reduction in society as a whole. For example, operations previously performed by personnel can be taken over by image recognition, sensing, or artificial intelligence, allowing staff reductions and eliminating the need for physical movement of objects, which in turn increases operational efficiency, realizes high performance, and reduces CO₂ emissions. By delivering to society a range of IT solutions, Canon will continue contributing to reducing CO₂ emissions not only in its own operations but also in society as a whole.

Contributing to CO₂-reductions Through Infrastructural Inspection Service

Many bridges, tunnels and other components of Japan's present social infrastructure are facing rapid deterioration due to age in the coming years. Conventional regular inspections via close visual examination are demanding in terms of time and labor. From an environmental perspective, they also generate CO₂ from vehicle and inspector movements during examinations. In response, Canon offers an image-based infrastructural inspection service that integrates its wide range of cameras and lenses and its unique image processing technology with AI technology capable of detecting cracks or other defects from images. This service not only resolves issues of cost and safety but is also effective in reducing CO₂ emissions compared to the conventional method.



AI-based detection of structural cracks

Contributing to a Circular Economy

Canon promotes both resource consumption restraint and product-to-product recycling.

Canon’s Initiatives and Their Relation to Sustainable Development Goals (SDGs) Targets

Contributing to a Circular Economy			
 	• Designing more compact, lighter weight products	Target 12.2*	Target 12.5*
	• Reducing waste through prevention, reuse and recycling	Target 12.4*	Target 12.5*
	• Remanufacturing products	Target 12.2*	Target 12.5*
	• Recycling consumables	Target 12.2*	Target 12.5*
	• Using sustainable water resources	Target 6.3*	Target 6.4*

* Target 12.2: Achieve sustainable management and efficient use of natural resources
 Target 12.4: Achieve environmentally sound management of chemicals and all waste throughout the product lifecycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water, and soil
 Target 12.5: Substantially reduce waste generation through prevention, reduction, recycling, and reuse
 Target 6.3: Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, and substantially increasing recycling and safe reuse globally
 Target 6.4: Substantially increase water-use efficiency

Resource Recycling

To maximize the value brought about by resource recycling, Canon pursues product-to-product recycling — in other words, recycling used products into new ones. In particular, we have emphasized such initiatives as closed-loop recycling of toner cartridges and the remanufacturing of office multifunction devices — collecting them post-use and making them into products with good-as-new quality. Currently, Canon has five sites conducting recycling, in Japan, Europe (two sites), the United States, and China. We are continuing initiatives aimed at circulating resources within the same regions where they are consumed.

Flowchart of Circular Economy



Value Created by Resource Recycling

We see initiatives at Canon’s recycling sites as not only contributing to a circular economy but also contributing to a carbon-free future. Through reuse of parts, remanufacturing enables us to reduce the CO₂ emissions generated in raw material procurement and in parts processing and other activities, compared with manufacturing new machines. Closed-loop recycling, in which used cartridges are collected and processed into plastic pellets for reuse as raw material, also results in reduced CO₂ emissions generated by raw material procurement, transportation, and other activities, compared with using new raw materials. Canon Ecology Industry Inc. emitted 2,600 tons of Scope 1 and 2 CO₂ through site operations. We believe that these efforts have resulted in a reduction of approximately 5,000 tons of CO₂ emissions.

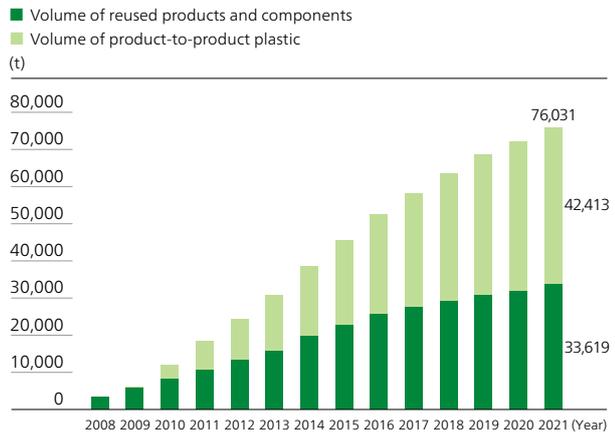
Example of Canon Ecology Industry Inc.

CO ₂ emissions from site operations (t-CO ₂)	CO ₂ emissions from resource recycling (t-CO ₂)
3,000	3,000
2,000	2,000
1,000	1,000
0	0
-1,000	-1,000
-2,000	-2,000
-3,000	-3,000
-4,000	-4,000
-5,000	-5,000
-6,000	-6,000
Approx. 2,600 tons	Approx. 5,000 tons

Reference: Remanufacturing of Multifunction Devices (→P68)
 Ink and Toner Cartridge Closed-Loop Recycling (→P69)

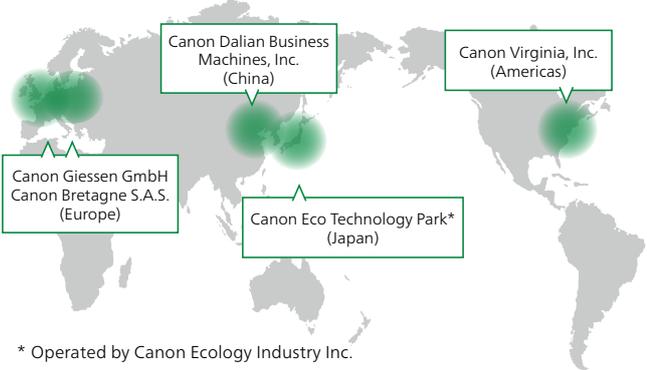
Going forward, we will continue to reinforce product-to-product activities at Canon recycling sites around the world, contributing to both a circular economy and the realization of a carbon-neutral society.

Product-to-product Recycling Volume (Cumulative)



* Product recycling initiatives have been ongoing since before 2007. Data are based on 2008 as the baseline year.

Canon Recycling Sites Worldwide



* Operated by Canon Ecology Industry Inc.

Remanufacturing of Multifunction Devices

Since 1992, Canon has undertaken remanufacturing of used multifunction devices. We collect used devices and break them down into parts, which are washed and cleaned using optimal techniques. Following strict reuse standards, we replace any parts that show wear or deterioration. The production line and inspection processes used are on a par with those for devices made only with new parts. When a remanufactured device is shipped, it is guaranteed to offer the same level of quality as a new product. We market remanufactured devices from the imageRUNNER ADVANCE series under the Refreshed series brand in Japan and under the EQ80 series brand in Europe.

In 2019, Canon launched sales of a new product under the Refreshed series brand, the imageRUNNER ADVANCE C3330F-RG, a special environmentally conscious model with an increased reused parts ratio. Using meticulous washing and cleaning processes, along with sandblast polishing* to remove the smallest imperfections and other special treatments, a reused parts ratio of over 90% has been achieved.

* A technique for polishing resin surfaces by blasting with microparticles



imageRUNNER ADVANCE C3330F-RG

Development of 3D Printer Filaments Using Plastic Recycled from Multifunction Devices

As a new initiative to drive plastic material recycling, Canon Ecology Industry Inc. has developed a filament for 3D printers made with 100% recycled plastic. The recycled plastic raw materials used are PC+ABS and HIPS, which have a record of reliable performance as plastic materials and have been widely used in the outer covers and cassettes of multifunction devices and other applications. Adapting technologies accumulated through recycling of other Canon products, and utilizing optimal technologies to crush and wash the outer covers and cassettes of multifunction devices recovered from the market and then process them through extrusion-molding, enabled filaments with a stable wire diameter to be manufactured even with 100% recycled plastic.



Outer cover of multifunction device



Filament for 3D printer

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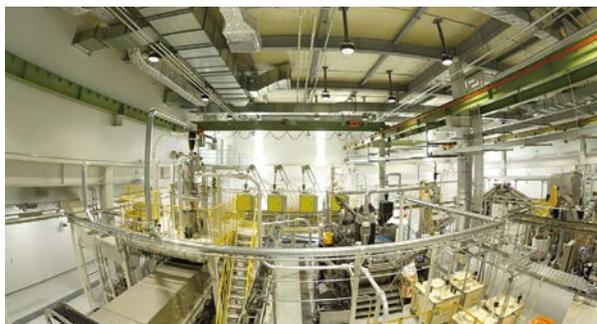
State-of-the-art Automated Recycling Plant at Canon Eco Technology Park

In February 2018, we opened the Canon Eco Technology Park. Based on a “clean and silent” design concept, which overturns the traditional image of recycling operations, the facility has implemented advanced systems to further boost recycling efficiency. The Canon Automated Recycling System for Toner Cartridges (CARS-T) is a process in which used toner cartridges are crushed and the materials automatically separated for recycling of the main component, high-impact polystyrene (HIPS). The sorting purity of the recycled plastic reaches 99% or greater* with the intensive use of various separation technologies at the different stages of the process. With the Canon Automated Recycling System for Ink Cartridges (CARS-I), a camera-based automatic sorting process is used on the used ink cartridges. The process line is automated, yielding an integrated process for the recycling of ink cartridges from disassembly and pulverization to washing. Separated materials are reused for ink cartridge components and packaging, as well as for pallets used in logistics. Any resources that cannot be recycled through product-to-product recycling are diverted to material recycling or thermal recovery processes to help maximize resource efficiency.

* 99% or greater based on Canon’s in-house sorting method



Canon Eco Technology Park



The Canon Automated Recycling System for Toner Cartridges (CARS-T)

Toner Cartridge Closed-loop Recycling

In 1990, Canon launched its Toner Cartridge Recycling Program, the first such program in the industry. The program continues to operate today.

Returned used toner cartridges are brought to Canon recycling sites, where they are sorted by model and the reusable parts are picked out. Washing and maintenance are performed as needed, and the parts are then reused in new products. Parts that cannot be reused are crushed and separated by material using physical characteristics such as electrostatic properties and specific gravity.

The primary material of toner cartridges is the high-impact polystyrene (HIPS) used primarily for the housing. HIPS can be used repeatedly to make new toner cartridges, a unique feature of Canon’s closed-loop recycling process.

We conduct used toner cartridge collection in 23 countries and regions (with a cumulative collection volume of about 444,000 tons as of the end of 2021) for recycling at four sites* worldwide. As of 2021 we have achieved a cumulative reduction in the use of new resources of approximately 314,000 tons.

* Japan: Canon Ecology Industry
United States: Canon Virginia
France: Canon Bretagne
China: Canon Dalian Business Machines

Collection and Recycling of Ink Cartridges

Canon has been collecting and recycling used ink cartridges since 1996. As of the end of 2021, Canon’s collection program was operational in 35 countries and regions worldwide, and the total volume of cartridges that had been collected up to the end of 2021 reached 2,616 tons.

In Japan, Canon is part of the Ink Cartridge Satogaeri (Homecoming) Project, a joint program by printer manufacturers to collect cartridges via boxes placed in post offices, libraries, and other local government facilities. Schools also collect cartridges through activities related to the Bellmark Campaign. Outside Japan, we place cartridge collection boxes in large retail stores, affiliate sales outlets, shopping malls, companies, schools, libraries, train stations, Canon service stores, Canon showrooms, and other locations, depending on the circumstances in each country or region.

Initiatives for Efficient Use of Resources Environmentally Conscious Design

To achieve effective use of our limited resources, environmentally conscious design is a necessary tool. Starting from the design and development stage, Canon gives careful consideration to the whole process through to collection and recycling of end-of-life products.

Our Environmentally Conscious Design Guidance summarizes the considerations that need to be addressed at the product design stage, including

product-related environmental laws and regulations, Green Public Procurement standards, and environmental labeling standards in the different countries and regions where we sell our products. It sets out concrete guidelines covering a range of areas, such as extending product life, making products easier to maintain, disassemble and sort into constituent materials after disassembly, and improving information disclosure.

Action to Reduce Disposable Plastics

There is growing public concern over single-use plastics, which are regarded as a cause of marine pollution. With the aim of reducing plastics, Canon is working to cut the amount of single-use plastic used in product packaging materials and at operational sites.

For product packaging, we are seeking to replace single-use plastics, for instance by switching from polystyrene foam to pulp mold. We are also pursuing initiatives to reduce plastic waste at operational sites worldwide. Canon Hi-Tech (Thailand) has hosted seminars to educate local residents and children on the problem of plastic waste, and organized workshops on how to make eco-bags from used clothing. In Japan, we are taking the initiative to address the issue of disposable plastics used in the straws, cups, and other utensils provided in staff canteens and other places at our operational sites by switching to paper and biodegradable plastics.

Additionally, Canon is a member of the Clean Ocean Material Alliance (CLOMA), a public-private sector alliance that seeks a solution to the problem of marine plastic pollution through accelerated innovation and collaboration among a wide range of interested parties across industry borders. In coordination with CLOMA, we are working on a range of initiatives, including reducing the use of plastics and developing recycle-friendly products, technologies, and systems.



Practical Initiatives to Reduce Product Packaging Materials (Inkjet Printer TR4650)

Initiatives to Reduce Waste at Operational Sites

Reducing Waste

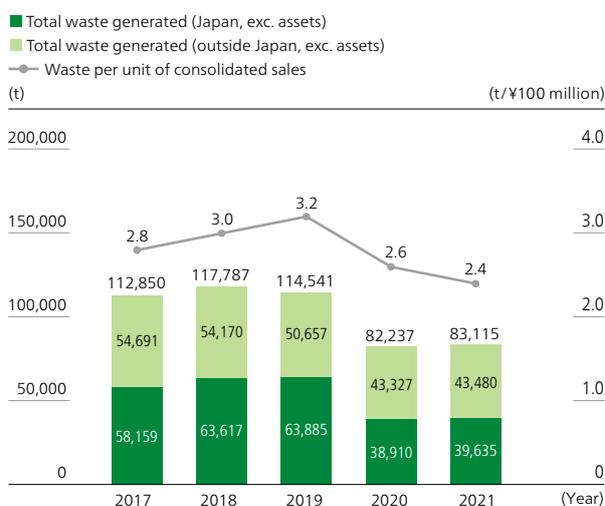
Canon is working hard to reduce the amount of waste it generates. Efforts include increasing recycling through sorting and collection and minimizing initial waste generation.

In particular, we have sought to determine which factors most significantly affect waste generation at production sites for each division and each production

process. Based on these findings, and thorough forecast management, we have implemented a number of ongoing initiatives to reduce waste.

Total waste output in 2021 amounted to 83,115 tons, about 1% year-on-year increase. Although we carried out ongoing activities to reduce waste at production sites, waste increased in line with recovery in production activities and greater in-person office attendance compared to 2020. Compared to 2019, however, waste output was down by about 27%.

Total Waste Generated



* Excludes disposal of products collected after use

Initiatives Related to In-house Waste Recycling and Outside Resource Recovery

Canon actively works to reduce the amount of waste originating from its operations and to reuse or recycle waste where possible, appropriately disposing of any waste that can be neither reused nor recycled in accordance with the law.

Our various operational sites employ a range of in-house recycling schemes, including reprocessing waste plastic from injection molding or recycling it for other items.

Even in the case of waste that must be sent outside the company, we make sure it does not enter landfills*. Rather, we contract with companies that reprocess waste into materials. In 2021, contracted companies processed 80,406 tons of waste from Canon back into materials.

* Except for some general waste generated by business activities that is disposed of under government oversight.

Initiatives for Sustainable Use of Water Resources

Water Risk in Regions Where Production Sites Are Located

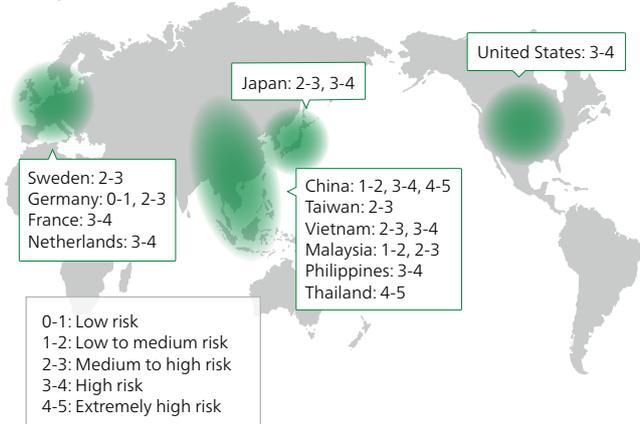
Canon assesses locations to confirm available water intake volume before establishing operational sites and

Protecting and Conserving the Environment

facilities. We use the AQUEDUCT water-risk mapping tool provided by the World Resources Institute* for quantitative evaluation and reconfirmation of water risk in regions where production sites are located, and work to reduce water consumption in response to local conditions. Meanwhile, in some regions, an increase in abnormal weather patterns has increased the risk of flood damage. We have already begun implementing appropriate responses to climate change. In Japan, for instance, we have relocated the Miyazaki Canon site, replacing the former riverside structures with new buildings on higher ground. Similarly, at our Thai production site, we used an elevated site to build Plant No. 2. Going forward, we will continue our progress with the formulation and updating of risk response plans to increase resilience.

* World Resources Institute: WRI is an independent institute based in the United States that conducts policy research and provides technical assistance concerning environmental and development issues around the world.

Water Risk (Quantitative) in Countries and Regions with Major Production Sites



* Result of "physical risk quantity" assessment of production sites (as of end of 2020) using AQUEDUCT water-risk mapping tool (Version 3) (as of February 2022)

Reducing Water Usage

Canon collects water data by intake source (public water system, industrial water system, or groundwater) and manages water resources carefully so as not to exceed intake limits for the different regions in which it operates. We also set and manage targets for the volume of water used in production, and constantly strive to further reduce water usage by improving production processes, raising water-usage efficiency and enhancing the quality of our water management.

The Plant of Canon Hi-Tech (Thailand) is located in an area of high quantitative water risk. As well as taking action to reduce water consumption and preserve water quality, the plant is collaborating with the management of a regional nature park and the local community in a project to construct a small-scale dam. The nature park is

a key water resource for Nakhonratchasima province where the plant is located, and a dam was deemed necessary to prevent erosion by slowing the flow of water and promoting sedimentation, as a measure against floods in the rainy season and droughts in the dry season. Canon Hi-Tech (Thailand) is providing support, such as the supply of construction tools, to the dam project over a four-year period. By conserving water quality and storing water, the dam is improving the local community's access to water.

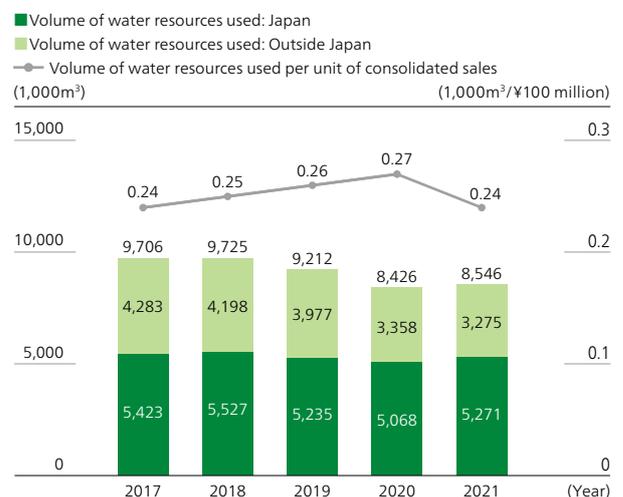
Water Recycling at Production Sites

Canon promotes the recycling of water resources. For example, taking into consideration its impact on the marine ecosystem of nearby Beppu Bay, which abounds with precious natural resources and habitats, the Kitsuki Plant of Oita Canon Materials Inc. employs a closed wastewater system that discharges only rainwater.

We are also working to keep water consumption at our marketing sites to an appropriate level by measuring and monitoring the amount of water used at main sites. To reduce water consumption at its head office building through water recycling, Canon Marketing Japan is cooperating with the Shinagawa Grand Commons Community Development Council, an association of local business enterprises, in a reclaimed water utilization project under which recycled water supplied by the Tokyo Sewerage Bureau is used for flush toilets and other purposes.

In 2021, despite ongoing efforts to reduce water consumption at production sites, water consumption increased from 2020, when production activities were severely affected by COVID-19, to 8,546,000 m³, an increase of approximately 1% from the previous year. On the other hand, this represents a decrease of approximately 7% from 2019.

Use of Water Resources



* Third-party verification obtained for water consumption figures from 2018.

Eliminating Hazardous Substances and Preventing Pollution

Canon thoroughly manages chemical substances in products and those used in manufacturing processes.

Canon's Initiatives and Their Relation to Sustainable Development Goals (SDGs) Targets

Eliminating Hazardous Substances and Preventing Pollution	
 	<ul style="list-style-type: none"> Managing chemicals contained in products, meeting international standards Target 12.4*
	<ul style="list-style-type: none"> Managing chemical substances in production processes Target 12.4*
	<ul style="list-style-type: none"> Reducing discharge into air, water, and soil Target 12.4* Target 6.3*
	<ul style="list-style-type: none"> Green supply chain Target 12.4*

* Target 12.4: Achieve the environmentally sound management of chemicals and all waste throughout the product lifecycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water, and soil
 Target 6.3: Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, and substantially increasing recycling and safe reuse globally

Approach to Managing Chemical Substances

Canon strictly manages chemical substances in products as well as those used in manufacturing processes. Our basic approach to management involves confirming products do not contain regulated chemical substances that exceed the prescribed standard and production sites do not discharge regulated chemical substances that exceed the prescribed standard.

Management of Chemical Substances in Products

Canon has built a Group-wide environmental assurance system for managing chemical substances in products. Taking the laws and major environmental-labeling requirements around the world into consideration, we established in-house standards in line with the most stringent regulations in the world.

Specifically, our management system classifies chemical substances into three categories: "prohibited substances," which cannot be used in products;" use-restricted substances," for which we are working to find alternatives by specific deadlines; and, "controlled substances," the amount of which should be monitored.

Utilization and Development of the chemSHERPA System for Information Sharing on Chemical Substances

To manage chemical substances appropriately, it is important to share information on the chemical substances contained in materials, parts, and products accurately and efficiently along the supply chain from upstream to downstream, and to ensure compliance with all applicable regulations.

In the past, companies each employed their own survey formats to request information about chemical substances in products from suppliers, which meant that suppliers were responding to their customers multiple times in different formats even regarding the same parts or chemicals. This situation incurred substantial burden on and costs to the entire supply chain. Furthermore, using such a variety of survey formats gave rise to concerns about the decreased reliability of data as it was communicated across the supply chain.

Amid such circumstances, the Ministry of Economy, Trade and Industry (Japan) decided to sponsor chemSHERPA (chemical information SHaring and Exchange under Reporting PARTnership in supply chain) as a common platform for sharing information, facilitating the seamless transmission of information between companies to confirm compliance with regulations on chemical substances in products. Applying the IEC62474* international standard, the chemSHERPA data scheme enables the management of compliance verifications for chemical substance regulations for each material and part. It enables more effective verifications as well, since revisions to regulations are updated in a timely manner.

Having previously collected and managed information on chemical substances contained in products in line with IEC62474, Canon completed the introduction of chemSHERPA in 2017. Since its introduction by Canon, more than 99% of survey replies from suppliers have been made through chemSHERPA. This has led to increased workplace efficiency. Some suppliers have also adopted pre-filled survey replies that contain some of the required information. This shift to a

Protecting and Conserving the Environment

more standardized approach contributes further to operational efficiency.

Meanwhile, for suppliers who have difficulty with the reply process, guide manuals in Japanese, English, and Chinese have been prepared to promote the progressive global adoption of chemSHERPA.

* Material Declaration for Products of and for the Electrotechnical Industry. International standards issued by the IEC (International Electrotechnical Commission) in March 2012 aiming to streamline the material declarations on chemical substances and compositions contained in the products of the electrotechnical industry in the global supply chain.

Contribution to Creation of an Industry-wide System for Information Sharing on Chemical Substances Contained in Products

The International Electrotechnical Commission (IEC) is a body that carries out international standardization in the field of electrical and electronic technology. As a member of the TC111 Technology Committee that formulates its environment-related standards, Canon contributes in particular to the formulation of standards for information sharing on chemical substances contained in products. As the rollout of these standards to other industries is now under discussion at IEC, Canon will continue to be involved in initiatives to further standardize information sharing on chemical substances contained in products and to achieve increased efficiency.

Managing Chemical Substances Used in Manufacturing Processes

The chemical substances handled during manufacturing at Canon include “controlled chemical substances” regulated in terms of safety such as negative impact on human health, the environment, and flammable risk. Canon separates these substances into three categories: A) Prohibited substances; B) Emission reduction substances; and C) Regulated substances. In turn, effective measures are in place for each category.

Prohibited substances are defined as those specified by the Chemical Weapons Convention, the Stockholm Convention, the Montreal Protocol and the Convention concerning Safety in the Use of Asbestos, as well as specified greenhouse gases (PFC/HFC/SF₆), other soil and groundwater pollutants, and substances that significantly impact people’s health.

Greenhouse gases other than PFC/HFC/SF₆, greenhouse gases identified by the IPCC as having global warming potential (GWP), volatile organic compounds (VOCs), and other substances specified by Canon are designated as emission reduction substances.

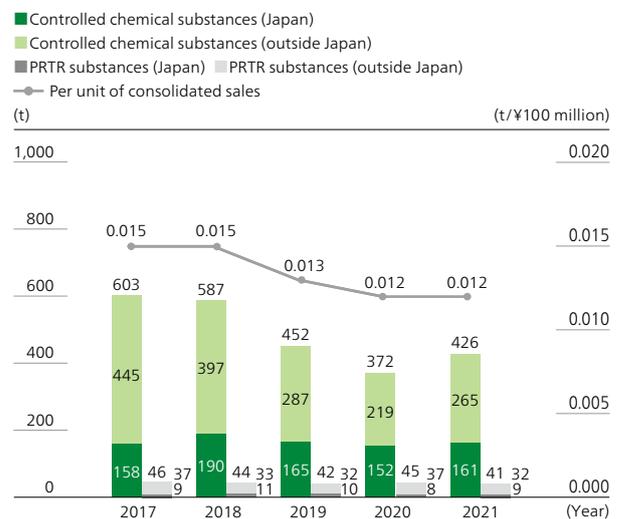
Regulated substances are chemical substances with defined compliance requirements, including compliance with reference values and the ascertainment of usage and storage quantities.

Reducing Use and Emissions of Controlled Chemical Substances

Canon engages in various initiatives at its operational sites to reduce emissions of controlled chemical substances, including reducing the consumption and re-use of them through improvement of production processes.

Total emissions of controlled chemical substances in 2021 amounted to 426 tons, a year-on-year increase of approximately 15%, attributable to a recovery in production activities that were heavily constrained by the pandemic in 2020. Compared to 2019, however, emissions were down by approximately 6%.

Emissions of Controlled Chemical Substances and Amount of Chemical Substances Designated by the PRTR System*



* PRTR System: Pollutant Release and Transfer Register System, a notification system for the transfer and release of chemical substances.

* Controlled chemical substances exclude regulated substances.

Reducing Emissions into the Atmosphere and Waterways and Preventing Pollution

Canon alleviates the environmental impact of its operational sites by reducing emissions of NO_x*¹ and SO_x*², which are major causes of air pollution and acid rain; reducing discharge of phosphates and nitrogen compounds, which cause the eutrophication of water environments; and, reducing BOD*³ and SS*⁴, which indicate an environmental impact in water areas. One example of this is Canon Components, the first member of the Group to introduce a new treatment process to reuse the active carbon contained in waste sludge. By removing the small residue of ink in treated wastewater, this process realizes reduced environmental impact.

- *1 Nitrogen oxides (NOx) A major cause of air pollution, acid rain and photochemical smog, NOx is generated when the nitrogen in fuels is oxidized or when nitrogen in the atmosphere is oxidized during high-temperature combustion.
- *2 Sulfur oxides (SOx) A major cause of air pollution and acid rain, SOx is generated when fossil fuels, such as oil and coal, are burned.
- *3 Biochemical oxygen demand (BOD) BOD is the amount of oxygen consumed when microorganisms degrade organic matter in water. Larger figure indicates worse water quality.
- *4 Suspended solids (SS) A collective term used for substances of less than 2 mm in diameter that float in the air and do not dissolve.

To prevent air pollution, when installing or updating equipment that uses fuel, we opt for fuels that minimize generation of air pollutants (such as sulfur oxide, nitrogen oxide and soot), and have banned the use of heavy oil in principle.

Furthermore, we have designated ozone-depleting substances and persistent organic pollutants cited in the Stockholm Convention on Persistent Organic Pollutants as banned substances.

With regard to wastewater, each operational site sets standard values based on local laws and regulations. Also, control values are set at 80% of the standard values as management standards at each site. We regularly check the status of compliance with management standards.

Soil and Groundwater Management Status

Canon places high priority on soil and groundwater protection. In line with this, we established the Canon Group's Basic Policy on Soil and Groundwater Pollution and implement comprehensive measures based on it. In the unlikely event that soil or groundwater pollution is found at one of our operational sites, cleanup and remedial actions are carried out in close accordance with all relevant laws.

Status of Soil and Groundwater Management Activities

Operational Site	Substances	Measures
Shimomaruko	1,2-dichloroethylene	Injection of treatment agents, water quality measurement
Utsunomiya parking lot 1	Fluorine and its compounds, etc.	Pumping, water quality measurement
Toride	Trichloroethylene, etc. Hexavalent chromium and its compounds	Pumping, water quality measurement
Canon Ecology Industry	Trichloroethylene, 1,1-dichloroethylene	Pumping, water quality measurement
Nagahama Canon	Hexavalent chromium and its compounds	Water quality measurement
Canon Components	Mercury and its compounds	Covering, water quality measurement

* Reports are made to the authorities concerning sites where remediation is in progress.

Also, our standard when acquiring new land is to conduct a preliminary soil examination and carry out any other necessary procedures, such as soil remediation, before making the purchase. We also monitor the chemical substances used at each site and, considering applicable national and regional standards, develop risk countermeasures according to the local situation.

Going forward, we will continue with the above initiatives and carry out monitoring and reporting of operational sites with completed remediation in a timely manner.

PCB Waste Management

In accordance with relevant laws, Canon strictly manages polychlorinated biphenyl (PCB), which damages living organisms and the environment. As of December 2021, 6 operational sites were storing PCB waste. In terms of highly concentrated PCB waste, there are 493 fluorescent ballasts in storage. In Japan, this PCB waste is processed sequentially by Japan Environmental Storage & Safety Corporation (JESCO).

Contributing to a Society in Harmony with Nature

Canon promotes activities worldwide based on the Biodiversity Policy.

Canon’s Initiatives and Their Relation to Sustainable Development Goals (SDGs) Targets

<p>Contributing to a Society in Harmony with Nature</p> 	<ul style="list-style-type: none"> Biodiversity Policy, Basic Policy on the Procurement of Timber Products 	Target 15.2*	Target 15.5*
	<ul style="list-style-type: none"> Canon Bird Branch Project 	Target 15.5*	
	<ul style="list-style-type: none"> Preservation of natural habitats and biodiversity 	Target 15.5*	
	<ul style="list-style-type: none"> Forest conservation, tree-planting initiatives 	Target 15.2*	

* Target 15.2: Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and substantially increase afforestation and reforestation globally
 Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, to halt the loss of biodiversity and, by 2020, to protect and prevent the extinction of threatened species

Biodiversity Policy

Canon recognizes biodiversity as essential for a sustainable society. We carry out various activities to conserve and protect biodiversity under our Biodiversity Policy, which applies to the entire Canon Group.

Reference: Biodiversity Policy
<https://global.canon/en/environment/biodiversity.html>

Initiatives to Support Continuous Use of Sustainable Forestry Resources within Value Chain

To help support biodiversity across the value chain, Canon promotes the use of sustainable forestry resources as the raw materials for the paper used in its products. We have set procurement policies favoring the purchase of paper products derived from sustainably sourced wood pulp. Moreover, the office paper we sell is made under forest certification schemes or using environmentally conscious raw materials.

Reference: Basic Policy on the Procurement of Timber Products
<https://global.canon/en/environment/biodiversity.html>

Group Initiatives to Conserve Biodiversity

At marketing sites and production sites around the world, Canon joins with local stakeholders in activities tailored to local needs.

Canon Bird Branch Project

Biodiversity refers to the way living things interact as they coexist on earth. Within this sphere, birds occupy the top position in a local ecosystem pyramid of plants, insects, and small animals, symbolizing the cycle of life.

Canon promotes the Bird Branch Project, which encompasses a range of bird-centered activities at operational sites in Japan and overseas, as a symbol of the initiatives based on its Group-wide Biodiversity Policy.



CANON BIRD BRANCH PROJECT
 BIODIVERSITY INITIATIVES

Reference: Canon Bird Branch Project website
<https://global.canon/en/environment/bird-branch/index.html>

■ Activities in Japan

Canon’s Shimomaruko headquarters complex in Tokyo is located on a site with greenspace that contains a wide variety of trees. Under the supervision of the Wild Bird Society of Japan, a monthly survey of the migration of wild birds identified 36 species of birds on site so far. At other sites as well, bird baths and nesting boxes have been installed and are cleaned, and measures are taken to protect against bird strikes, creating on-site environments conducive to bird life. We also announce the installment of nesting boxes and otherwise offer opportunities for employees to learn that even familiar spaces can foster the lives of wild birds.



Wild birds migrating to a nesting box installed on site

■ **Overseas activities (France)**

We also promote biodiversity conservation initiatives at overseas sites in the Americas, Europe, and Asia. Canon Research Centre France is situated on a 45,000m² site, of which 82% is greenery. Since 2011, it has worked under the guidance of the French League for the Protection of Birds to protect and enhance biodiversity in its grounds and increase the number of bird species using the site as a habitat. To this end, it has adopted a site improvement policy that includes discontinuing the use of herbicides and pesticides. This initiative has successfully increased the number of wild bird species on the site, which according to the most recent survey has reached 34.



Greenspace cultivated onsite

Canon Canada Branch Out

Canon Canada’s Branch Out Program gives employees at all levels the opportunity to help create green spaces and sustainable environments in their local communities. Branch Out began as a tree-planting program in 2014 but has evolved to include a wide range of sustainability activities, including cleaning up parks, rivers and shorelines, removing invasive plant species, restoring habitats and constructing turtle shelters. All employees from Canon Canada’s 13 offices, from Toronto to Quebec City and Vancouver, are encouraged to participate, sparing a few hours from their work schedule to volunteer. Since the start of the program, employees have volunteered more than

9,700 hours in 68 locations across the country. Their achievements so far include planting more than 36,000 trees and shrubs, removing 7,000m³ of non-native vegetation, and restoring shoreline.

In 2021, the program’s activities were maintained during the COVID-19 pandemic and included online events to teach employees and their families about the importance of biodiversity as well as the collection of donations for environmental protection groups. In recognition of its initiatives, Canon has been named as one of “Canada’s Greenest Employers” under the Canada’s Top 100 Employers project sponsored by *The Globe and Mail*, one of Canada’s leading daily newspapers, for three consecutive years since 2019.



Clean up activities

Environmental Protection Activity in Partnership with Local Communities (Thailand)

Canon Hi-Tech (Thailand) actively engages in environmental protection activities throughout Thailand. In 2021, around 50 people, including employees and outside volunteers, participated in tree-planting activity in an area adjoining the Dong Phrayayen-Khao Yai forest region, which is designated as a UNESCO Natural World Heritage site. As this is an area where forest fires occur frequently in the dry season, our team also cleared leaf fall that can be a fire ignition source, installed firefighting equipment, and worked with the local government to prepare a feeding ground for wild animals.



Participants in environmental protection activities