

TOSHIBA

Toshiba Electronic Devices & Storage Corporation
Environmental Report 2021

東芝デバイス&ストレージ株式会社 環境報告書2021

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Editorial policy

The Environmental Report 2020 of Toshiba Electronic Devices & Storage Corporation Group presents the results of Toshiba Electronic Devices & Storage Corporation Group’s environmental management activities in fiscal 2020.

The object of this report is to present our statement of environmental philosophy, system, achievements and activity plan about reduction of environmental impact of products and in manufacturing, and environmental communication.

This report has been compiled by referring to the Guidelines for Environmental Report (fiscal 2018 version) of the Ministry of Environment, Japan.

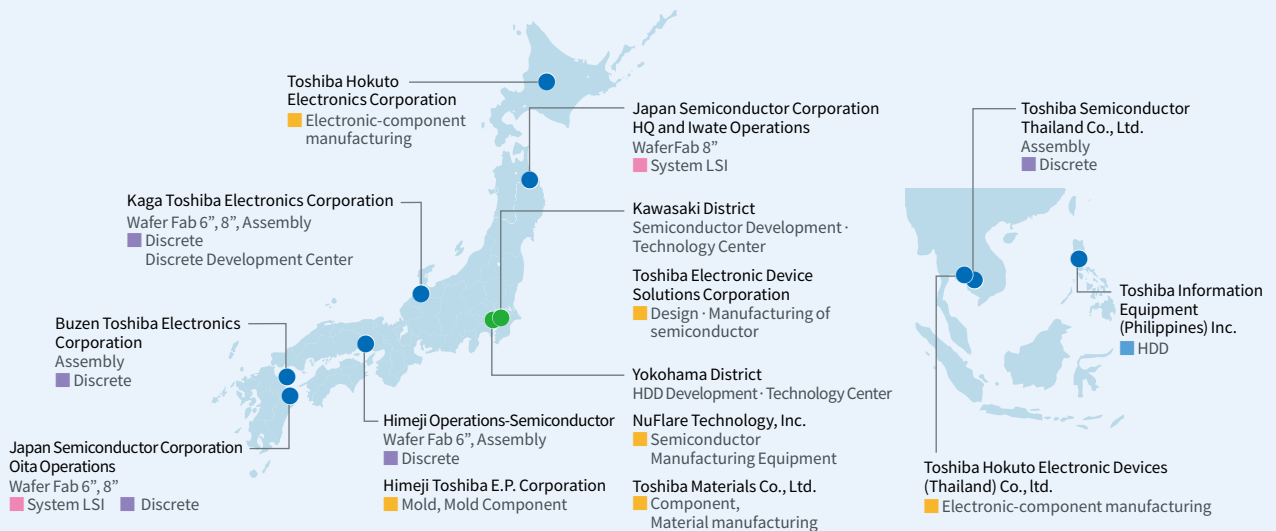
Toshiba Electronic Devices & Storage Corporation Overview

Toshiba Electronic Devices & Storage Corporation gained independence from a corporate internal company at Toshiba Corporation in July, 2017, and started as a separate entity. Toshiba Electronic Devices & Storage Corporation Group of companies are engaged in a wide range of parts and components business operations which includes conventional semiconductor business and storage products business. Experience and knowledge from each respective business area are brought together, in an aim of creating high value added products.

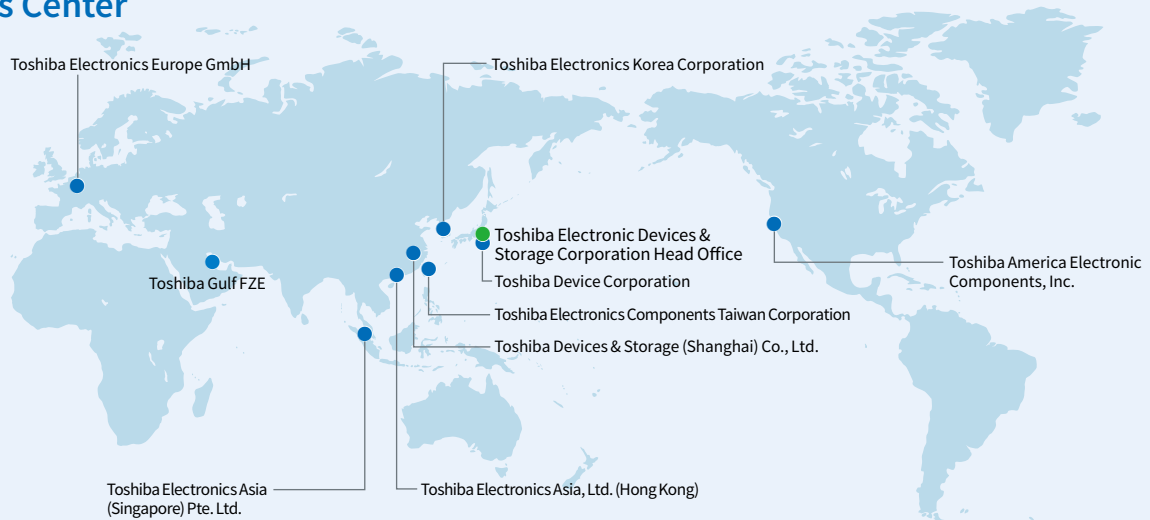
Development • Technology • Manufacturing Center

(May, 2021)

- Development Center
- Component Manufacturing Center

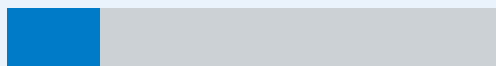


Sales Center



Number of employees

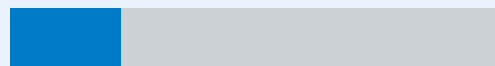
24,494 (Fiscal 2020)



19% of all Toshiba Group

Consolidated sales

745,600 million yen (Fiscal 2020)



20% of all Toshiba Group

- Toshiba Electronic Devices & Storage Corporation Group
- All Toshiba Group except Toshiba Electronic Devices & Storage Corporation Group

Top Commitment



Foreword

The Group positions the environmental efforts as the most important issue among the business activities. All employees work as one in cooperation with stakeholders to deal with the issue. Technologies of the Group compose the foundation of every kind of system and device and become the heart of IoT and 5G. Through being used in various situations, the technologies contribute to the establishment of a sustainable society. As a global company, we will provide more of the Group's technologies to the world to grow on a long-term basis. In order to realize such efforts, we must establish safe and quality value chain from the stages of research and design to procurement of raw materials, building of manufacturing process, as well as packing, delivery, use, disposal, and recycling of products. High-performance power devices are crucial for realizing carbon neutrality. Therefore, we increase the production capacity to fulfill our responsibility for supply. In addition, at our manufacturing bases, we introduce AI to improve productivity.

All employees aiming for a sustainable society

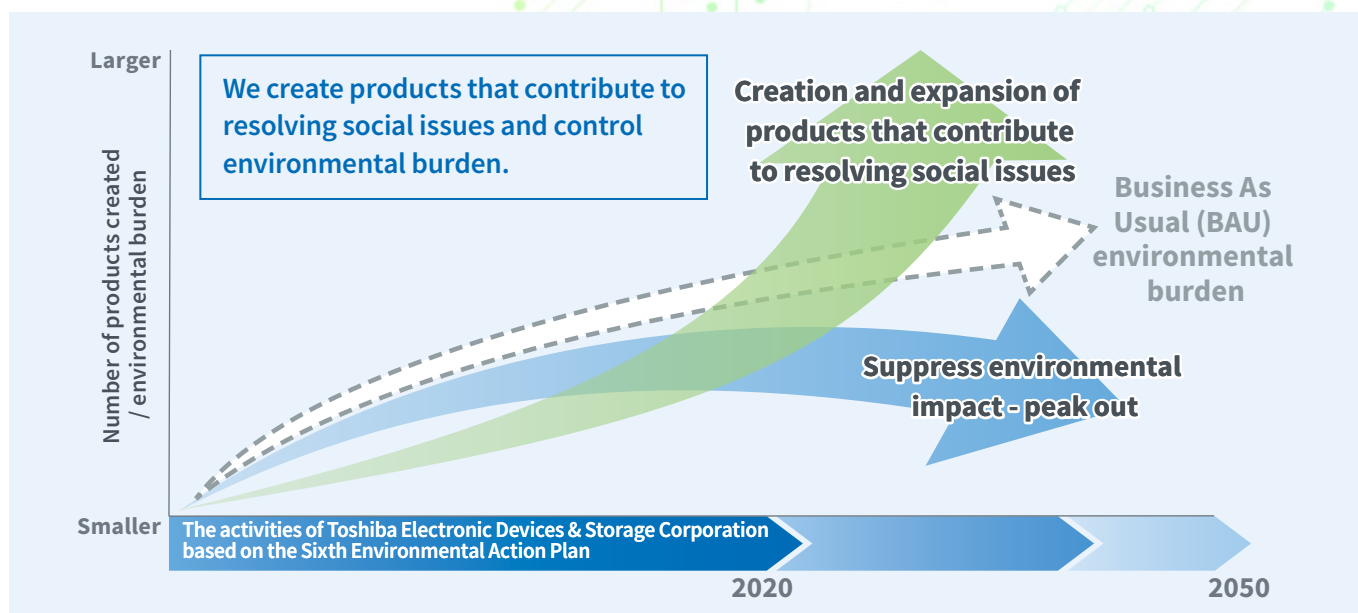
The Group makes efforts to reduce the environmental burden in the manufacturing processes, and achieved the FY2020 environmental performance goals. We will promote the innovation to resolve social problems the world confronts and contribute to achievement of SDGs through all the business activities including provision of products that contribute to development of people's lives and industry. First, Oita Operations of Japan Semiconductor Corporation, a major manufacturing base of semiconductors, and a new manufacturing building of Kaga Toshiba Electronics Corporation, which responds to 300 mm wafer, will achieve 100% renewable energy in advance by FY2026. And, by FY2030, all the manufacturing bases achieve the same goal, and, at the same time, on-site PPA model will be introduced. We provide more energy-saving products and promote growth strategies based on carbon neutrality. Realization of a sustainable society is the responsibility we have for all stakeholders. We promise to keep taking actions that become the "driving force to change the world", which is the Group vision.

Hiroyuki Sato

President & CEO

Toshiba Electronic Devices & Storage Corporation

Toshiba Group The Sixth Environmental Action Plan

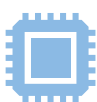


In order to realize an ideal state of the Earth in 2050 envisaged by Environmental Vision 2050, the Toshiba Group has formulated their medium-term goals on the environment as the “Sixth Environmental Action Plan” (Activity Period: FY 2017 to FY 2020), and is currently implementing its activities. In formulating this, various factors were taken into consideration, including external factors such as the adoption of the Paris Agreement at COP 21, adoption of SDGs at the UN summit, and the start of operation of the ESG investment, as well as internal factors such as changes in the company’s business structure, and the successes and points for reflection from the Fifth Environmental Action Plan (Activity Period: FY 2012 to FY 2016).

Activities the Toshiba Group should be focused on for the coming four years were considered next. Regarding the contents, we set a total of 15 items with goals over the two areas of “Business (products /services and manufacturing)” and “Management”. The “Environmental Action Plan” is reviewed every few years and contributes to resolving.



Areas of focus under the Sixth Environmental Action Plan



Business (Improvement of environmental performance for products and services):

We will develop energy-saving products for realizing a low-carbon society through suppression of CO₂ emissions, both at the time of manufacturing of products, and during their use, through resource savings, such as in the miniaturization of products, and through reductions in specified chemical substances contained within the products.



Business (Reduction of environmental impact in manufacturing):

We will seek to achieve highly efficient manufacturing that curbs greenhouse gas emissions, chemical substances emissions, waste production, and water usage at each manufacturing base and simultaneously reduces environmental burdens and costs. And management of greenhouse gas emissions and waste production will continue, both in terms of “primary units” and “total amounts”.



Management:

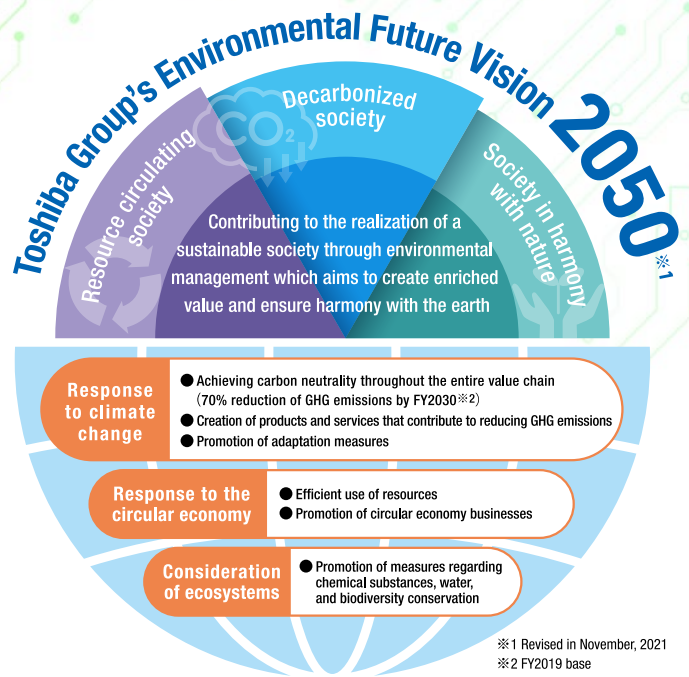
In an effort to improve compliance with laws and regulations throughout Toshiba Group, we established “Thoroughness in environmental risk and compliance” as a new item. We will strive to strengthen compliance with global environmental laws and regulations, foster environmental human resource development, and aim to create a system that can constantly monitor risks.

Response to carbon neutrality

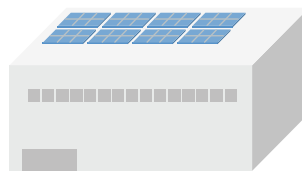


With the goal of “contributing to the realization of a sustainable society through environmental management which aims to create enriched value and to ensure harmony with the earth,” the Environmental Future Vision 2050 aims to realize a sustainable society—in other words, a decarbonized society, a resource circulating society, and a society in harmony with nature. We will promote the implementation of initiatives in three areas: “response to climate change”, “response to the circular economy” and “consideration of ecosystems” so as to realize the ideal situation in 2050.

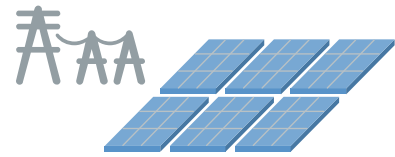
In particular, regarding the response to climate change, we further accelerate the efforts for realizing carbon neutrality in the entire value chain. In order to become the way the Toshiba Electronic Devices & Storage Corporation Group should be in 2050, the Group, as part of the response to climate change, promotes the expansion of creation and provision of products contributing to carbon neutrality, the realization of 100% renewable energy by FY2030, and the shift to on-site PPA model.



Achievement of RE100 in advance
 (Major base → all manufacturing)
 Introduction of on-site / off-site PPA model
 Company-owned power generation facility



Onsite



Offset

Stabilization, standardization

Perovskite solar cell
 (Use of wall of the building)

Floating offshore wind power generation

Next-generation renewable energy



Large-capacity power storage

GaN SiC

Increase in efficiency

Geothermal binary power generation

Small hydroelectric power generation

Undeveloped renewable energy

Toshiba Electronic Devices & Storage Corporation Group's carbon neutrality long term vision

Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)

The table below shows targets and actual results for environmental performance based on Toshiba Group's Sixth Environmental Action Plan. 11 out of 15 items in total were established as our corporate goals.

*The results for FY2017-18 do not include results from Toshiba Materials Co., Ltd. and Toshiba Hokuto Electronics Corporation.

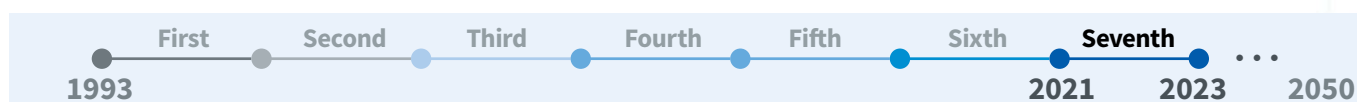
Item	Page	Contribution to SDGs	FY2017	FY2018	FY2019	FY2020		
			Result	Result	Result	Target	Result	Evaluation
1 Increasing the creation of products that contribute to resolving social issues	10	 	3 Products	3 Products	5 Products	5 Products	7 Products	○
2 Reduce energy-originated CO ₂ emissions	15		641kt-CO ₂	634kt-CO ₂	661kt-CO ₂	716kt-CO ₂	641kt-CO ₂	○
3 Reduce PFC emissions	15		138kt-CO ₂	129kt-CO ₂	113kt-CO ₂	128kt-CO ₂	109kt-CO ₂	○
4 Reduce water usage	16	  	14,029km ³	14,023km ³	14,599km ³	15,944km ³	14,338km ³	○
5 Reduce overall waste generation	17		16.6kt	16.1kt	18.9kt	20.7kt	17.5kt	○
6 Reduce waste volume	17		10.3kt	10.1kt	10.8kt	12.2kt	10.5kt	○
7 Reduce chemical substance discharge	18	 	222t	229t	251t	240t	226t	○

Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)

Item	Page	Contribution to SDGs	FY2017	FY2018	FY2019	FY2020		
			Result	Result	Result	Target	Result	Evaluation
8 Promote biodiversity activity	21	    	7 Site implementation	11 Site implementation	Contribution to Aichi target 11 Site promotion	Contribution to Aichi target	Contribution to Aichi target	○
9 Promote social communications	19	 	PR, advertisements, exhibition promotion	PR, advertisements, exhibition promotion	PR, advertisements, exhibition promotion	PR, advertisements, exhibition promotion	PR, advertisements, exhibition promotion	○
10 Promote local communications	19	 	Implement site communications	Implement site communications	Implement site communications	Implement site communications	Implement site communications	○
11 Foster an environment-orientated	24		Improve environmental awareness	Improve environmental awareness	Improve environmental awareness	Awareness improvement measures	Implement awareness improvement measures	○

Toshiba Group The Seventh Environmental Action Plan

In this plan, we specify detailed areas of activity as well as set and manage targets. Based on Toshiba Group's Environmental Future Vision 2050, we have now formulated the Seventh Environmental Action Plan with an activity period covering FY2021 to FY2023. There are 19 targets set in three activity areas, "Response to climate change", "Response to the circular economy" and "Consideration of ecosystems", with the first two being the priority items, and also "Enhancement of the basis of environmental management", which supports the three activity areas. We will further develop and refine our activities in line with these targets to achieve our long-term vision and to help resolve various social issues, starting with climate change.



Toshiba Electronic Devices & Storage Corporation Group's Seventh Environmental Action Plan

The table below shows targets and actual results for environmental performance based on Toshiba Group's Seventh Environmental Action Plan. 11 out of 19 items in total were established as our corporate goals.

Environment purpose and target	FY2021 Plan
Increasing the creation of products that contribute to resolving social issues	In addition to the environmental report and Toshiba Group Environmental Exhibition, appealing in other ways
Reduce CO ₂ emissions	718 kt-CO ₂
Reduce PFC emissions	133 kt-CO ₂
Reduce overall waste generation	21.1 kt
Reduce waste volume	13.2 kt
Reduce water usage	17,791 km ³
Reduce chemical substance discharge	259 t
Promote biodiversity activity	Contribution to Aichi target
Promote social communications	PR, advertisements, exhibition promotion
Promote local communications	Implement site communications
Foster an environment-orientated	Awareness improvement measures

Value Chain Management

Through dialogue with stakeholders, we appropriately identify important environmental issues during the stages of procurement, development, manufacturing, distribution, and use, and build an effective system to prevent and respond to these issues (see the table below).

In addition, in the event a customer requests information on compliance with the Green Procurement policies and the status of compliance, we will explain our compliance policy and the compliance status (see page 13).

Stakeholder	Stage	Stage Responding to Environmental Issues
Suppliers	Procurement	Compliance with Green Procurement Guidelines (p.13)
		Compliance with domestic and overseas environmental laws and regulations (p.13)
Our Group	Development	Verification of chemical substance contents (p.12)
		Miniaturization and weight reduction of products (p.12)
		Lower power consumption design (p.12)
		Reduce number of processes (p.12)
	manufacturing	Reduce greenhouse gas emissions (p.15)
		Reduce water usage (p.16)
		Reduce waste generation (p.17)
		Reduction of chemical substance use, emissions, and waste (p.18)
		Preventing emissions of substances harmful to the atmosphere and rivers (p.24)
	Logistics	Reduce greenhouse gas emissions (Measures such as delivery route optimization)
Customers	Usage	Miniaturization and weight reduction of products (p.12)
		Lower power consumption in use (p.12)

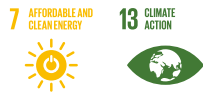
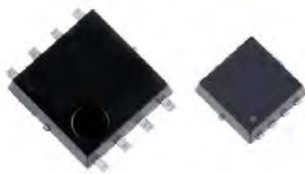
Products that contribute to resolving social issues

Visconti™ Series Image Recognition Processors



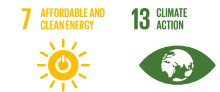
Product outline	This is an image recognition processor for on-board vehicle applications that achieves both high performance and energy saving.
Useful points	Images captured by a camera is instantaneously identified and the driver is notified of any danger.
Contribution to the environment	It contributes to energy saving and preventing climate change with its multi-core and exclusive image processing circuits.

U-MOSX Series Power Semiconductors



Product outline	It adopts a process that reduces loss.
Useful points	It suppresses heat generation and also enables the downsizing of on-board devices.
Contribution to the environment	It contributes to the prevention of climate change by saving energy.

Photorelay



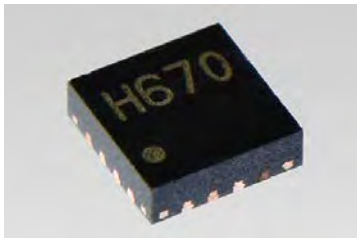
Product outline	This is the relay applying semiconductors to respond to the large current.
Useful points	It consumes less electricity, is smaller, and has longer life than the mechanical relay.
Contribution to the environment	It contributes to the prevention of climate change by saving energy, and downsizing of the devices to be installed.

NL HDD filled with helium



Product outline	An HDD filled with helium, which has smaller molecules than that of air.
Useful points	It is used for servers and so on and supports society's information infrastructure.
Contribution to the environment	By filling with helium, the rotation resistance is reduced, saving energy and increasing the capacity.

High Resolution Stepping Motor Driver ICs



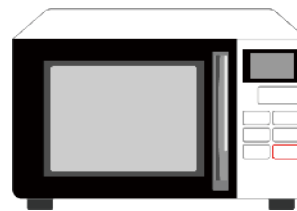
Product outline	It drives the motor that controls position and angle with a surveillance camera, a printer, and a projector.
Useful points	Detailed control becomes possible. In addition, it is highly efficient, produces less heat, and is small.
Contribution to the environment	It contributes to the prevention of climate change by saving energy, and downsizing of the devices to be installed.

Silicon Nitride Ceramic Bearing Balls

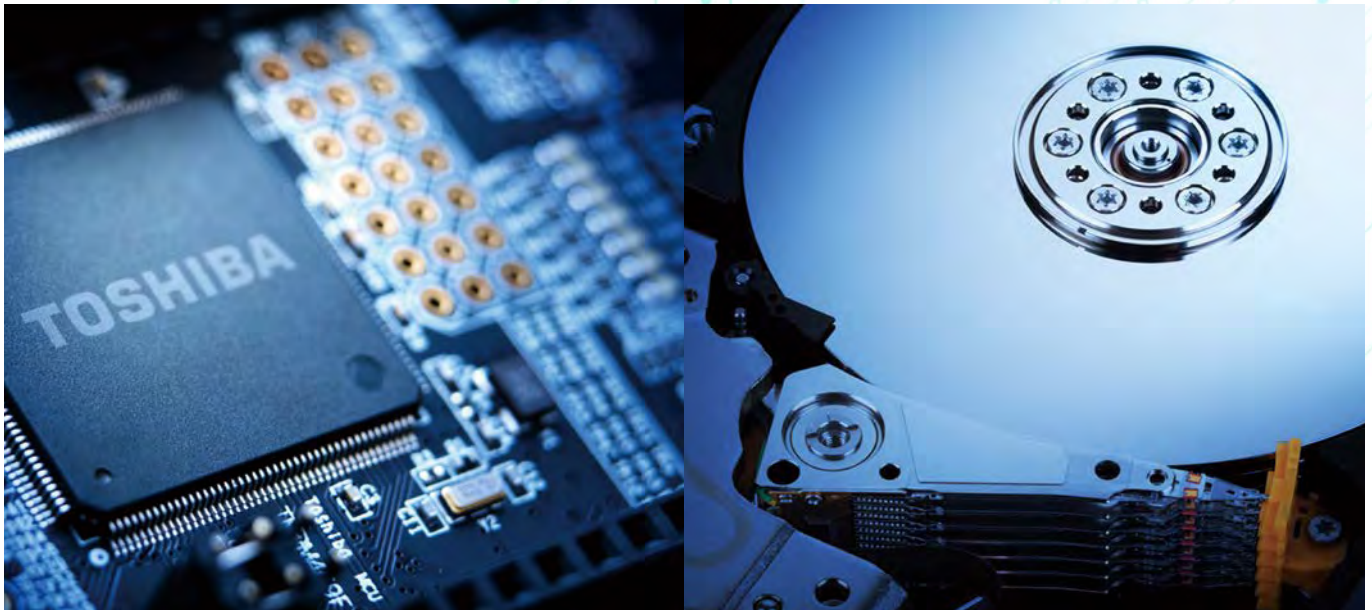


Product outline	These are ball bearings that use silicon nitride ceramics instead of steel.
Useful points	The product is an insulator and free of corrosion or rust, making it suitable for applications in harsh environments.
Contribution to the environment	They have excellent wear resistance, a long service life, and are half the weight of an iron ball bearing, which sees them contribute to saving energy and resources.

Magnetrons



Product outline	It produces the micro wave, and adds heat with friction heat by vibrating water molecules.
Useful points	It has longer life and is more efficient compared with conventional products.
Contribution to the environment	It contributes to the prevention of climate change by saving energy.



Environmental consideration at the stages of product design and engineering



The Group is working on energy savings, and the control of chemical substances in products, through the design and development stages, and through the material procurement stages, creating products that are environmentally friendly.



Verification of chemical substance contents:

Conditions of chemical substances included in raw materials and parts used in our products are verified and materials are selected to avoid restricted substances, while development of technologies, product design and development that have small environmental impact are promoted. Compliance with laws, ordinances and various regulations relevant to products is verified by conducting environmental assessments.



Miniaturization and weight reduction of products:

Product packages are miniaturized and weight is reduced to decrease the amount of raw materials used to miniaturize various electrical devices in which our products are incorporated, as well as resource conservation.



Lower power consumption design:

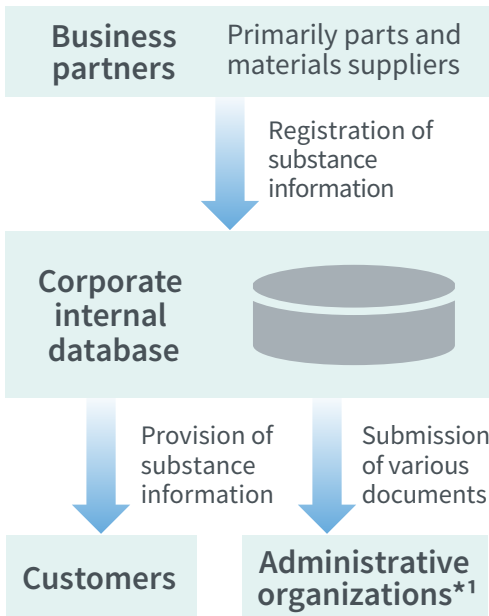
Low power consumption designs are realized by reducing power loss with lowered ON resistance of power semiconductors and power consumption is reduced while products are used. Furthermore, development of devices that far exceed performance limits of conventional silicon devices are being advanced with the use of compound semiconductors such as SiC (silicon carbide) and GaN (gallium nitride).



Reducing number of processes:

Highly efficient mass production system, which starts at design and development stage, is being built. Power consumption is reduced by decreasing the number of processes for manufacturing.

Material procurement with consideration for the environment



*1: European Chemicals Agency, etc.

Toshiba Electronic Devices & Storage Corporation Group has established green procurement guidelines and is developing green procurement activities with consideration to the environment.

In addition to explaining the contents of said guidelines to all business partners, we ask suppliers to submit “Questionnaires on the establishment of the Environment and Product Quality Management System”, and conform Establishment of Environmental Quality System, Establishment of the Management System with Preparation of Rules and Standards and Establishment of the Process Management System when starting the business with business partners.

At the same time, we collect information on chemical substances contained in products from the suppliers, including the content of “Procurement-Prohibited Substances” and “Procurement-Controlled Substances” as specified by the Company, and check the compliance status according to said guidelines. And as shown in the figure on the left, information on substances is registered and stored in our in-house database.

Briefing sessions are held on a continual basis, to promote understanding about our green procurement activities, and business partners are requested to cooperate with our efforts.

Compliance with domestic and overseas environmental laws and regulations



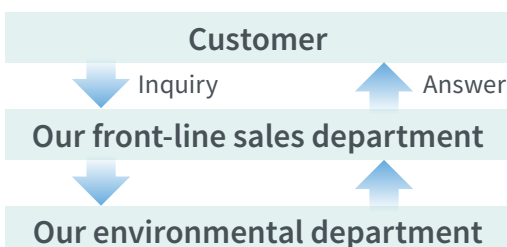
Regulations for chemical substances related to products are enforced or scheduled to be enacted in all countries around the world.

Amongst recent developments relating to substances subject to the EU RoHS Directive, in addition to the six substances currently regulated (Pb, Hg, Cd, Cr 6+, PBB, PBDE), four phthalate esters (DEHP, BBP, DBP, DIBP) were added (July 22, 2019). In response to such developments, the company has already completed substitution for the four phthalate esters. The corporate group will continue to gather information on the latest domestic and overseas trends of policies and regulations concerning chemical substances contained in products, promote alternatives for chemical substances that may become subject to various regulatory restrictions and review our established “procurement prohibited substances” and “procurement controlled substances” to reflect our Green Procurement Guidelines.

Toshiba Electronic Devices and Storage Corporation Group regulations relating to management of chemical substances in products.

- Domestic regulations, etc. : Chemical Substances Control Law, PRTR Law, etc.
- Overseas regulations, etc. : RoHS related regulations for each country, WEEE Directive, European ELV Directive, REACH Regulation, ErP Directive, etc.
- Others : Customer requests, etc.

Responding to Customer Inquiries



We are always ready to respond to inquiries like those below from customers on the environmental quality of our products.

We will promptly respond to inquiries regarding the content of chemical substances in products delivered to customers, the management system for chemical substances contained in products, and other environmental quality of products.

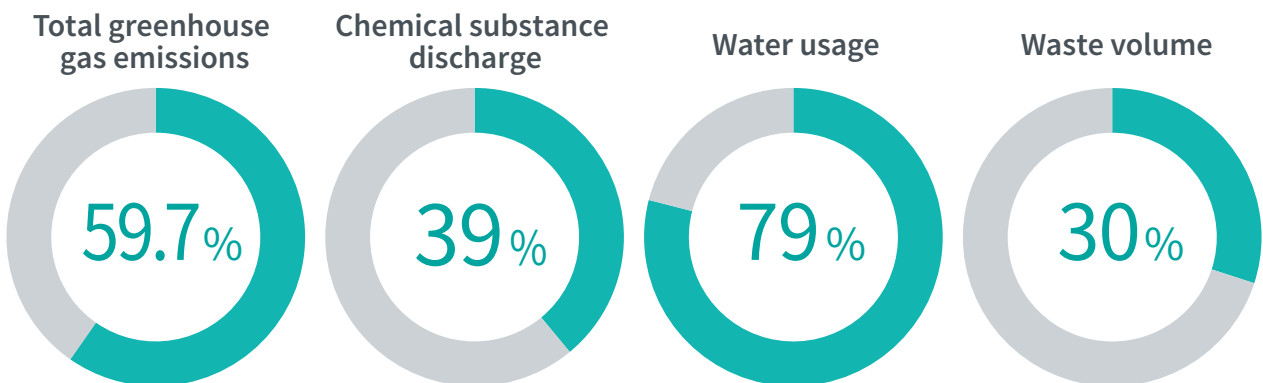
Reduction of Environmental Impact in Manufacturing



The Group is aiming for “high-efficiency manufacturing”, that simultaneously reduces the environmental burden, and the manufacturing costs generated in the production process. In step with progress towards an information-oriented society, we continue to expand and strengthen production capacity for our semiconductor and HDD products in order to meet vigorous demand in the market. Our parts and materials business supply high precision components for a broad range of fields such as industrial medicine and as a result, our environmental burden is expected to increase for the time being. However, by promoting various measures throughout the organization, such as introducing highly energy-efficient facilities, making process improvements, and reviewing the design of product parts, we will work to suppress any environmental burden imposed by the Company. And our group comprise a large portion of the environmental burden produced by Toshiba Group and as such, we continue to implement proactive actions to reduce environmental burden.

Percentage of the Environmental Impact of Toshiba Electronic Devices & Storage Corporation Group in the Entire Toshiba Group

(FY2019 Result)



■ Toshiba Electronic Devices & Storage Corporation Group
■ All Toshiba Group except Toshiba Electronic Devices & Storage Corporation Group



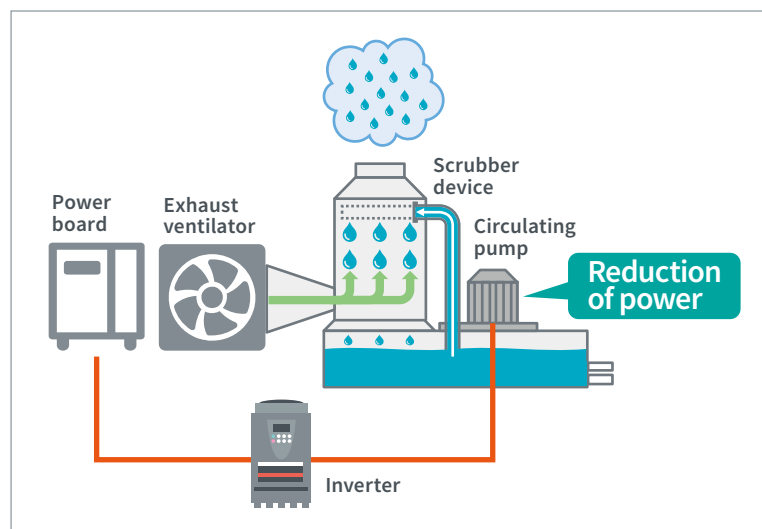
A large amount of energy is constantly used for air conditioning management, operation of manufacturing equipment and producing testing in the manufacturing processes of semiconductor products and HDD products. And PFC (perfluoro compound) gas is used in the etching process of semiconductor manufacturing, and CFC (chlorofluorocarbon) refrigerants such as HFC (hydrofluorocarbon) are used in cooling equipment such as air conditioning systems. Some of these gases also lead to climate change that is thousands of times more severe than CO₂. Our corporate group has therefore launched a project that crosses over corporate organizations in 2004, to reduce greenhouse gases with emphasis on “effects manufacturing”. We consider facilities with greater energy saving effects and refrigerant equipment with low greenhouse effects when upgrading facilities, but at present, a large amount of energy is consumed to operate clean rooms and there are a large number of similar facilities in each process. An understanding and awareness of the process will lead to a significant reduction in the use of energy and gas.

Example case
CO₂ reduction
measures

Reduction of electricity through installing an inverter into the scrubber circulating pump

Kaga Toshiba Electronics corporation

Kaga Toshiba Electronics Corporation reduces excessive circulating water through installing an inverter into the circulating pump of the scrubber device to reduce the energy of the pump that was used for such a purpose.



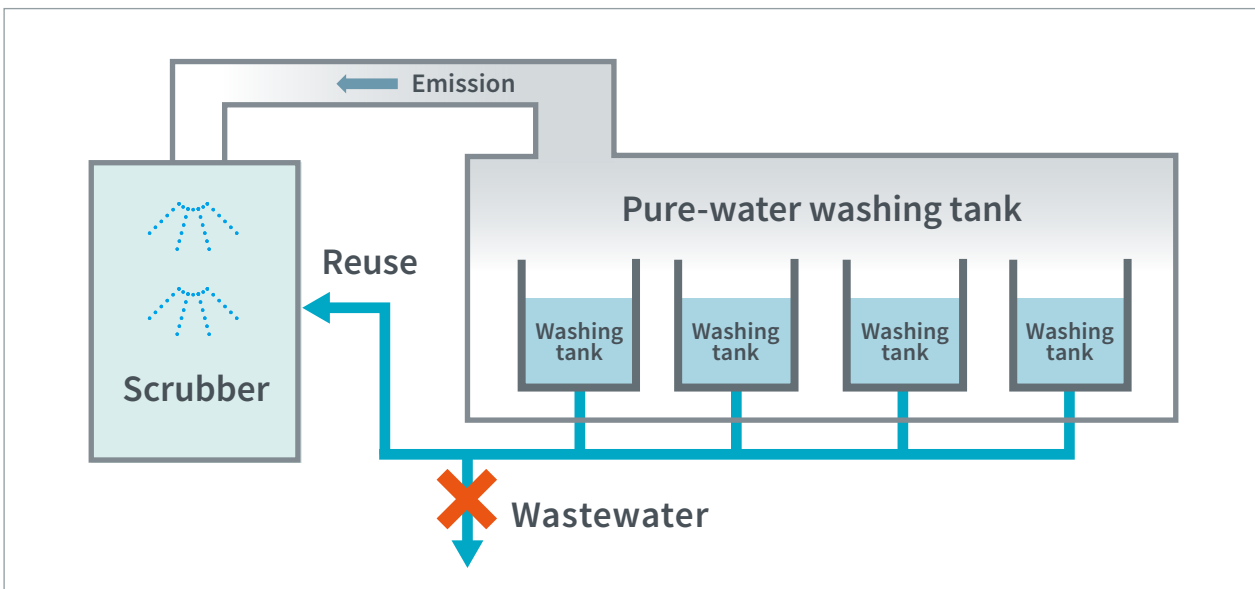
Highly efficient use of water



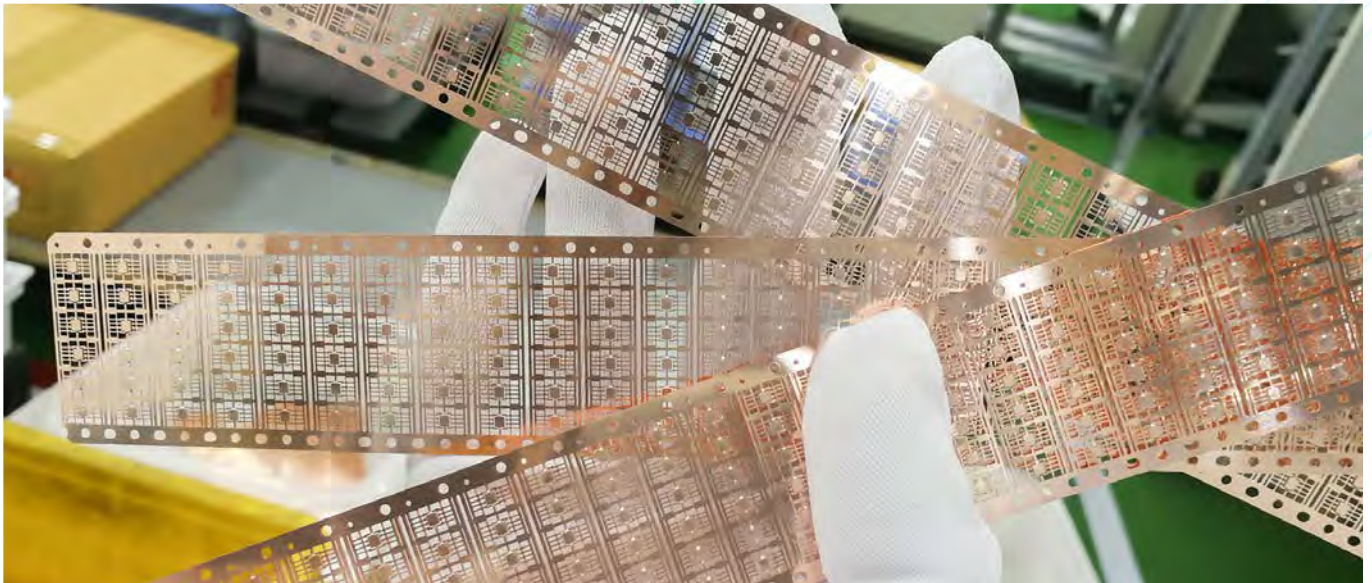
Extremely large quantities of water are consumed during the manufacture of semiconductors and hard disks, such as to dilute chemicals, for cleansing, as cooling water of equipment, etc. Our corporate group has a particularly high volume of water consumption within the Toshiba Group and we are making proactive efforts to use well water, reuse water, as well as recycle water in our day to day efforts to make efficient use of water resources.

Example case Measures to reduce water usage	Reduction of water consumption through reusing washing water	Toshiba Hokuto Electronics Corporation
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We reduce water consumption through, in the pure-water washing tank of the board, reusing the wastewater for sprinkling it on the scrubber (for measure against odor) of the washing tank. (It is the technological achievement made with Toshiba Materials Co., Ltd.)

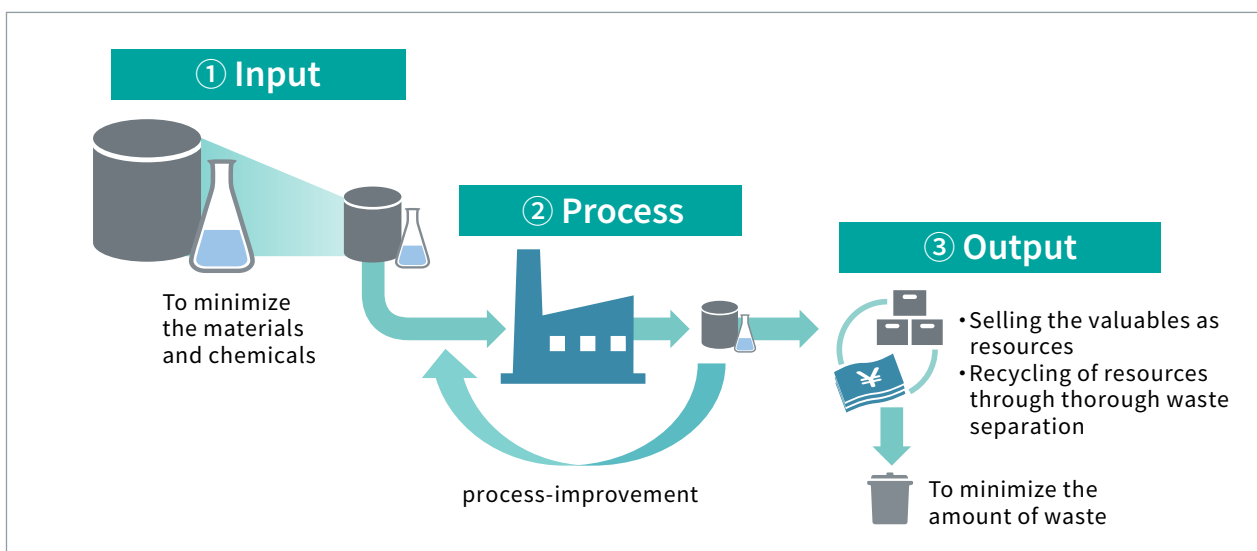


Reduction of waste materials generated and contributions towards resources recycling



Industrial wastes, such as plastic waste, wasted chemicals, and sludge from wastewater treatment arise in manufacturing processes of semiconductors, etc. With the aim of building a recycling-oriented society, the Group is engaged in the measures in each of the following three stages as part of the efforts for reduction of industrial waste accompanied by business activities and for contribution to the resource recycling: 1) Input stage, such as putting materials; 2) Manufacturing processes at each base; and 3) Output stage at each base.

- 1) In the input stage of putting materials, etc., in the first place, it is important to minimize the materials and chemicals used for manufacturing products. Considering the effective use of the resources from the designing process of the products, we try to minimize the input materials and chemicals.
- 2) In the manufacturing processes of each base, we optimize the amount of materials and chemicals to be used through process-improvement activities and reuse some of the chemicals in the same process so as to reduce the amount of wastes produced.
- 3) In the output process of each base, we promote recycling of resources through thorough waste separation, and try to minimize the amount of waste that is brought to the final disposal through selling the valuables as resources and recycling the waste that can be recycled.

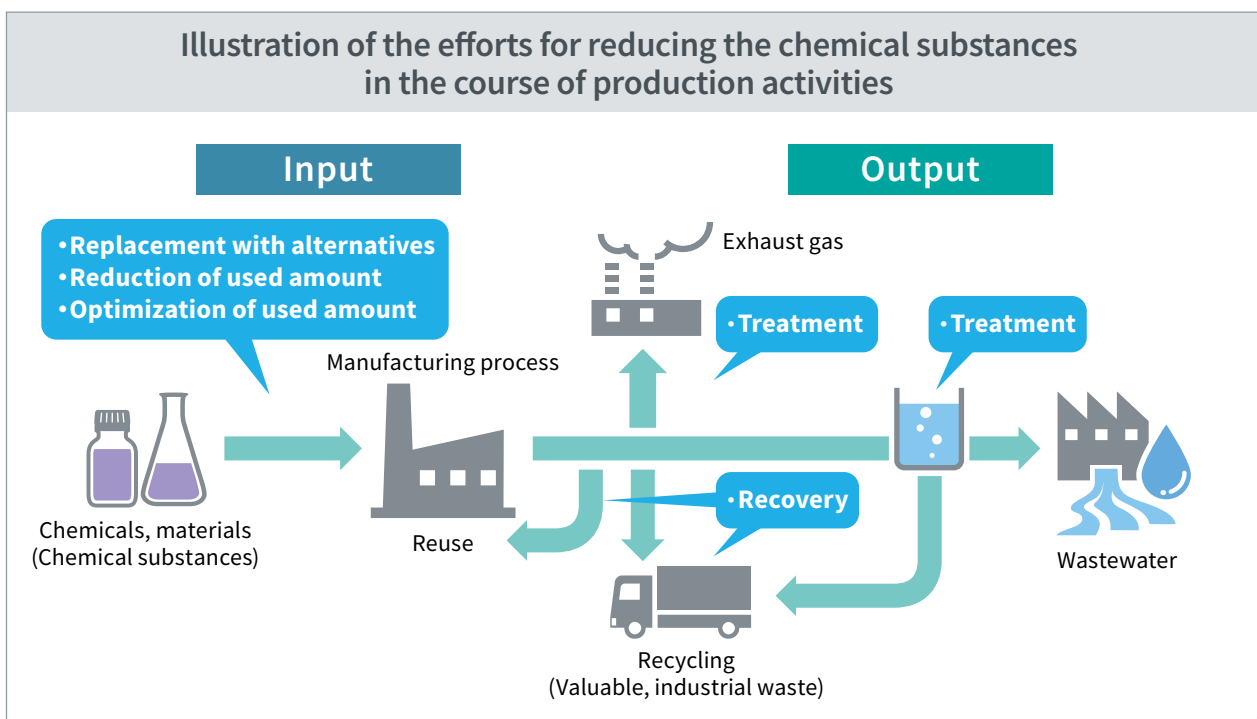


Reduction of chemical substances in production activities



Various chemical substances are used in the process of manufacturing semiconductors and storage products. In the Group, efforts are naturally made to limit the use of harmful chemical substances as much as possible and to find alternative harmless chemical substances, and consumption of chemical substances is reduced (optimization of consumption) by improving productivity through improving the manufacturing process and yield. We are also working to minimize the impact on the global environment of chemical substances by reusing and recycling them after use and detoxifying by way of exhaust gas treatment and wastewater treatment.

As seen above, we promote reduction of environmental risks in the course of business activities and contribute to the protection of global environment through reducing the amount and improving the situations of using (INPUT) and discharging and disposing of (OUTPUT) the chemical substances.



Environmental Communication



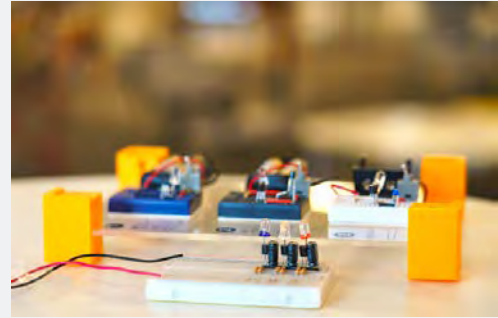
Through proactive environmental communication activities, including biodiversity conservation work at our domestic and overseas bases, we are working to spread environmental information in society, and to improve the environmental awareness of employees

Environmental Education

"Things we can teach because we are a company that manufactures semiconductors that support IoT society"

Our corporate group is conducting a variety of education on the environment, primarily at manufacturing sites both domestic and overseas, to children, who are our future generations. In FY2018, as a new effort, we started environmental education using semiconductors to educate children who live near our manufacturing base nationwide.

Children coming into contact with semiconductor products that are being made at a factory nearby, we hope, would present an opportunity for them to consider environmental issues.



Activity report

"What are semiconductors like?" was the topic of the hands-on class designed to introduce children to semiconductors and to teach them how they are useful to our lives and the environment.

〈Aiming for New Normal on-site lecture on environmental issues〉

In FY2020, the venue was changed from a classroom to the gym. The lecture was held keeping sufficient distance between the participating students. We explained the history of semiconductor development and its role in modern society through having the students touch the silicon minerals, which are the raw materials of semiconductors, and demonstrating the signal control with a model of a front-loading washing machine. The students gave a shout of joy when the small signal made by them was lightened up.

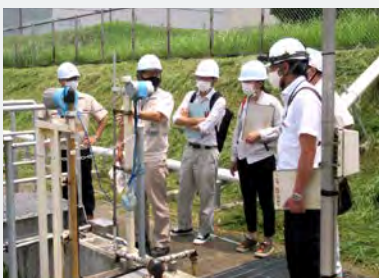


organizer
Kaga Toshiba Electronics Corporation



In the lecture, students also learn the products actually manufactured in the Buzen Toshiba Electronics Corporation plant and their use. We can deepen a relationship of trust with the local community by having them learn the products manufactured in the plant. As a plant that is located closed to the area where children study, we would like to spread the message that semiconductors are helping to enrich our lives and achieve an energy-saving society.

Communication



Kaga Toshiba Electronics Corporation

Responsive actions taken for onsite surveys conducted periodically by administrative authorities

Onsite surveys are periodically conducted by administrative authorities at plants that have concluded the agreement on pollution prevention. Efforts are made to sustain stable operations and to disclose accurate information to sustain manufacturing plants safe for all residents of the local community.

Community symbiosis

Japan Semiconductor Corporation

Creation of environmental karuta playing cards

We wanted to “make a work with all employees without gathering”, though we could not hold the environmental event due to the spread of COVID-19; and we wanted to “convey the importance of environmental activities to children properly”, though on-site lecture for the neighboring elementary school is cancelled.

Those are the reasons we handmade the environmental karuta playing cards.



かるたの「読み札」と「絵札」

Activity report

First, we selected the yomi-fuda reading cards from entries we solicited internally and made efuda picture cards that fit the yomi-fuda. We took it as an opportunity for all employees to consider the importance of environment, and assigned a first hiragana for the yomi-fuda to each department. And, as a result of soliciting the yomi-fuda, there were 2,478 entries, which means roughly all of the employees participated.

Environment karuta we prepared was donated to the neighboring elementary school.

We hope it will be an opportunity for the children to learn the importance of environmental activities.



Community symbiosis



Kaga Toshiba Electronics Corporation

Kaga Toshiba Forest greenery development activities

As an ISO-certified company for developing rural natural areas in Ishikawa, we rented over 8 acres of Tatsunokuchi Kyuuryou Park in Nomi City, Ishikawa Prefecture, and here we continue greenery development activities with employees and their families twice a year in spring and autumn as part of our ‘Kaga Toshiba Forest’.

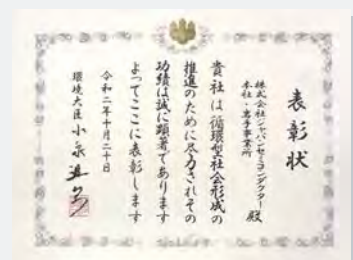
In this fiscal year, the greenery development activity was conducted with small number of participants with the purpose of preventing the spread of COVID-19 infection. However, we are now preparing for resuming the activity

Award activities

Japan Semiconductor Corporation

FY2020 company of merit for recycling-oriented society formation promotion, awarded by Minister of the Environment

Iwate Operations of Japan Semiconductor Corporation have engaged in reduction of the used amount of chemicals in the course of wastewater treatment and manufacturing process and reduction of wastewater sludge through reviewing the semiconductor manufacturing lines and water content ratio of the wastewater treatment. As a result, we succeeded in significantly reducing the annual use of chemicals for wastewater treatment and amount of chemicals used in the course of the manufacturing process, and reducing the generation of sludge by over 20% compared to the FY2019 initial forecast. Because of those achievements, we won the award.



Efforts to biodiversity



Toshiba Electronic Devices & Storage Corporation Group conducts activities to preserve biodiversity at worksites both in Japan and overseas.

Toshiba Information Equipment (Philippines) Inc.

Mangrove Tree Planting Activity



With partnerships from Bulacan State University, TIP planted 1,200 Rhizophora mangrove propagules at Malolos, Bulacan. A total of 78 people participated.

Tree Planting at Angat Watershed



Angat Watershed contains the Angat Dam which supplies water for Metro Manila's needs. TIP adopted one (1) hectare of land, and planted 1,000 endemic trees (Narra, Palosapis, and Guijo). 83 people composed of TIP employees, university staff, government staff, and the philippine army participated.

Sea turtle conservation activities

70 sea turtle hatchlings were released to the sea with the cooperation of Cavite Local Government Unit, and the hatchery staff. After the release of turtles, a coastal clean-up was conducted and on-site lecture on the importance of turtles.



Conservation activities for rivers leading to Manila Bay



An estero or river that is connected to Manila Bay is "adopted" by our, with the goal to improve the water body's condition. This year, we adopted the Imus River at Kawit, Cavite. The activity involved donation of materials for the personnel, awareness campaigns, and coastal and roadside clean-up. By the end of the activity, a total of 1.62 tons of waste were collected.

Biodiversity Park

Within the landscapes of our site premises, a Biodiversity Park or "Biopark" is maintained. It features a wide range of flora species, grouped to each type. Within the Biopark, a small-scale Butterfly house could be observed where different species of butterflies visit daily. Employees are welcome to visit any time of the day.



SPECIES INVENTORY

Species inventory is TIP's flagship program for biodiversity. High species count is an indication of good biodiversity. Annually, TIP collaborates with experts to conduct inventory of flora and fauna species found in its premises. TIP also strives to continually increase this number.

Flora

Endemic species refers to those confined only in the country and nowhere else to be found. The following are in TIP:

LTI Main

62

LTI Annex

21

CIP

47



Igem Dagat



Manila Palm



Palawan Cherry



Isis

Fauna

The following are some examples of fauna observed to visit TIP sites.

LTI Main

19

LTI Annex

15

CIP

22



(1) PIPit; (2) Zebra Dove; (3) Olive-backed Sunbird; (4) Eurasian Tree Sparrow; (5) Diadem Eggar; (6) Skipper Hesperidae; (7) Mottled Elm-giant; (8) Hippolimnize sp.; (9) Carpenter Bee

Species Addition

TIP maintains a record of the number of flora species planted within its sites, and fauna species observed to visit. 62 flora species are planted, and 22 fauna species were observed to visit.



Toshiba Semiconductor Thailand Co., Ltd.

Seed distribution campaign

We distribute local seeds 3 type total 750 Pack to employee in Thai Environmental day and CSR month (Morning Glory 105,000 seeds, Sun Flower 75,000 seeds.)



Japan Semiconductor Corporation

"Hanasaku Michishirube PJ"

The Oita location



The Iwate location



We weeded the flower beds and participated in the flower planting organized by the local community. The Iwate location involved Kitakami-shi's "Kitakami-shi Hana ippai campaign".



Flower garden full of flowers



Rare flower of Kitakami City "Shirayuri"

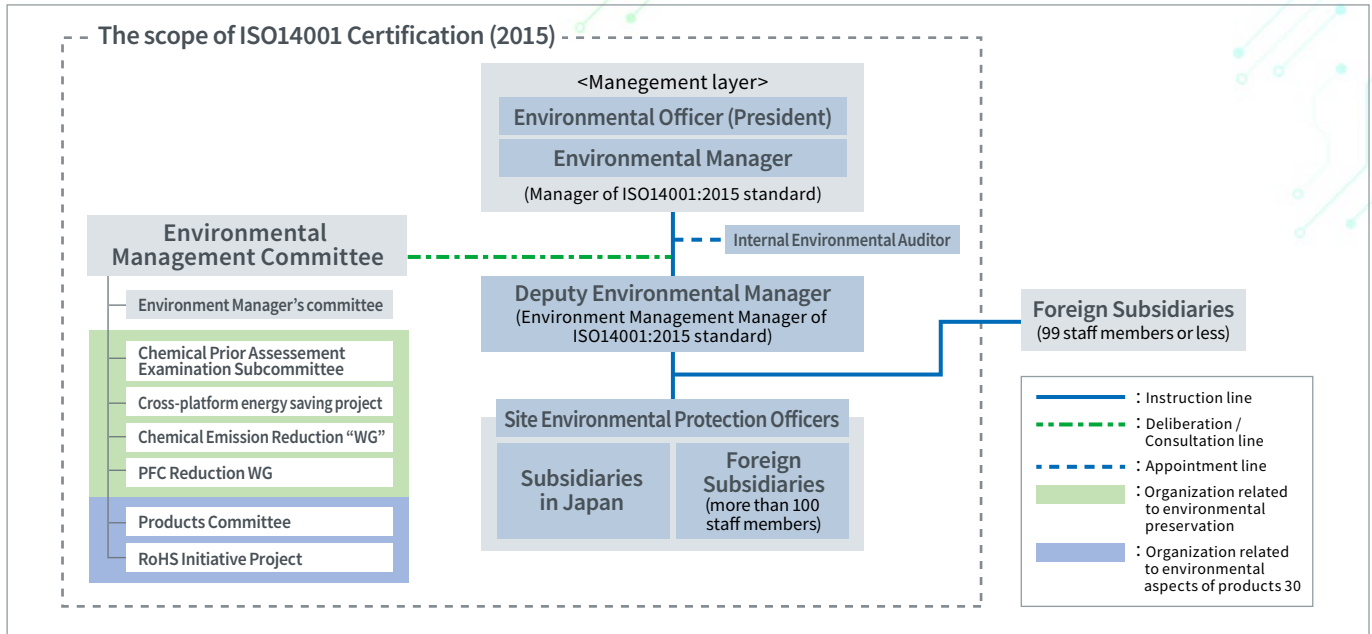


Activities conducted by all sites can be viewed on the Biodiversity Activities Introduction page of Toshiba Group.

Foundations for environmental management

Environmental Management System

We are actively rolling out activities based on an environmental management system that manages and responds to important environmental issues with management at the top of the system's hierarchy.



Activities supporting environmental management

Environmental education

In order to raise awareness of environmental management, the Group conducts environmental education through e-learning for all employees. In addition, based on the Toshiba Group's internal auditor training program, we are conducting Toshiba Comprehensive Environmental Audit System Auditor Training, which consists of written exams and on-site training on environmental laws, ISO14001, internal guidelines, regulations, etc.

*1: All Toshiba environmental education and our corporate group environmental education are respectively conducted annually.

Compliance with Laws and Risk Management

We set voluntary control values stricter than legal regulations *2 in respect of the environmental burden of emissions to the atmosphere, or to bodies of water, and comply with these at each site. In FY2019, however, a total of three problems relating to environmental laws and regulations occurred, including drainage problems at some plants and administrative permits and notification omissions. We will once again strive for flawless legal compliance and thorough risk management with all our employees.

*2: Ozone Layer Protection Law, Chemical Substances Control Law, Water Pollution Control Law, etc.

Environmental Management Committee

With the Environmental Management Officer as chairperson, a global environment conference is held twice a year with executives as the committee members and, in addition to deciding environmental management guidelines, priority measures such as legal compliance, reports on the status of base activities, and other individual environmental issues are discussed. Regarding matters of decisions, employees will be fully notified through base directors or presidents of the affiliated companies.

Implementation of Environmental Audit at Toshiba group

From 1993, the Group conducts periodic environmental audits (Toshiba Comprehensive Environmental Audits) for Toshiba Corporation and separate companies of Toshiba Corporation based on some typical Japanese business practices with associated mnemonics. These translate roughly as: 3 ALLs for management of ALL facilities, in ALL areas, by ALL members; 3 ACTUALs for ACTUAL sites, ACTUAL things, ACTUAL situations; 3 SEEs of visual management for SEEing, being able to SEE, letting others SEE". The audit consists of Environmental management audit, Audit on compliance with laws, and Site audit. Particularly for site audits, in addition to the 19 facilities subject to the law, effectiveness-audits for response training in hypothetical emergencies are also implemented. We will also thoroughly review compliance with laws and regulations, measurement management, organization and orderliness, cleaning and cleanliness, and employee education. With regard to items for improvement extracted during the audit, we will implement measures within half a year, and will link these to further optimization of on-site management and ongoing improvements.

Environmental education for all employees
 Twice a year*¹

Problems relating to environmental laws and regulations
 Zero case

Environmental Management Committee
 Twice a year

Environmental Audit at Toshiba group
 13 Sites

Acquisition of ISO14001 Certification

Toshiba Electronic Devices & Storage Corporation Group is proceeding with the acquisition of integrated certification for all its global business processes, and has renewed ISO14001:2015 certification (at 10 company sites within Japan and 7 sites outside Japan*1) on August 26, 2020.

We will continue our contributions to resolve social issues by the creation and offering of energy and resource conservation and products that are consistent with the business policy based on our global comprehensive environmental management system. We will also strive to minimize impact on the environment by our organization, conduct community outreach according to regional characteristics, and conduct biodiversity preservation activities along with effective environmental management activities. For the business locations and subsidiaries that have acquired certifications and certification numbers, etc., refer to the following table.

Name of the organization	Certified body	Registration date	Approval certificate No.	expiration date
Toshiba Electronic Devices & Storage Co., Ltd. Head Office (Head Office Bldg. and Sales Office Sites)	JACO*2	1996.02.02	EC98J2014	2022.08.07
Toshiba Electronic Devices & Storage Co., Ltd. Head Office Branch (Komukai Branch • Semiconductor System Engineering Center Branch)				
Toshiba Electronic Devices & Storage Co., Ltd. Himeji Operations-Semiconductor				
Kaga Toshiba Electronics Corporation				
Himeji Toshiba E.P. Corporation				
Buzen Toshiba Electronics Corporation				
Japan Semiconductor Corporation Headquarters & Iwate operations				
Japan Semiconductor Corporation Oita Operations				
NuFlare Technology, Inc.				
Toshiba Device Corporation				
Toshiba Electronic Device Solutions Corporation				
Toshiba Semiconductor (Thailand) Co., Ltd.				
Toshiba Electronics Europe GmbH.				
Toshiba Electronics Asia, Ltd.				
Toshiba Devices & Storage (Shanghai) Co., Ltd.				
Toshiba Electronics Asia (Singapore) Pte. Ltd.				
Toshiba Electronic Components Taiwan Corporation				
Toshiba Electronics Korea Corporation				
Toshiba Materials Co., Ltd.				
Toshiba Hokuto Electronics Corporation	JACO*2	1998.09.25	EC98J1066	2022.09.24
Toshiba America Electronic Components, Inc.	DNV*2	2010.06.29	10000244915- MSC-ANAB-USA	2022.06.24
Toshiba Information Equipment (Philippines), Inc.	TÜV Rheinland	2018.11.20	01 104 023260	2021.11.16
Toshiba Hokuto Electronic Devices (Thailand) Co., ltd.	BUREAU VERITAS	2001.03.16	TH012209	2022.04.02

*1 The subjects are the main company and all consolidated companies (manufacturing and non-manufacturing) and overseas consolidated companies (manufacturing and non-manufacturing) with over 100 employees.

*2 Japan Audit and Certification Organization for Environment and Quality

Cooperation for third-party evaluation

Toshiba Corporation receives third-party verifications of greenhouse gas emissions for the purpose of improving the reliability of our environmental performance data, and the Group also cooperates in the said verifications as a member of the Toshiba Group. In FY 2020, Japan Semiconductor Corporation Headquarters & Iwate Operations underwent verification from the Company base in respect of global data, which concerned data collection, aggregation, internal verification processes, etc.



Stakeholder Engagement Status

We aim to further improve our environmental management by actively communicating with stakeholders, identifying important environmental issues, and deciding response policies based on the needs clarified through interacting with stakeholders.

Stakeholder	Engagement Opportunities	Achievements
Suppliers	• familiarizing suppliers with Green Procurement Guidelines	• Implementation of green procurement seminars for suppliers
	• Implementation of audits of parts suppliers	• Audits are conducted once every three years for all parts suppliers.
Customers	• Communication with stakeholder	• Publishing of Environmental Report -Japanese version : Published July 9, 2020 -English version : Published November 30, 2020 • Release of external website "Environmental Activities"
	• Environmental survey correspondence	• We are ready to respond to contact from our customers regarding surveys in relation to our environmental quality control system for products, substances contained in our products, and environmental conservation, etc.
Internal	• Implementation of in-house environmental education	• Conducting environmental education through e-learning for all employees once a year • Implementation of separate education for specific workers • Conducting Toshiba Comprehensive Environmental Audit System Auditor Training • Implementation of education for sales departments on environmental laws and regulations
	• Conducting Environmental Management Committee	• With the environmental manager as its chair and executives as committee members, this meeting has been held twice. • This meeting will also be held at each manufacturing and sales base of the Group.
Local community	• Dialogue between plants and residents	• Implementation of creation of environmental karuta playing cards (p.21)
	• Providing education	• Implementation of environmental education for elementary school students - On-site lecture (p.20)
	• Interaction with the local community	• Implementation of Kaga Toshiba Forest greenery development activities (p.21)

Statement of Environmental Philosophy of Toshiba Electronic Devices & Storage Corporation Group

Vision

Recognizing Toshiba Group's Basic Policy for the Environment that the Earth is an irreplaceable asset and it is humankind's duty to hand it on to future generations in a sound state, Toshiba Electronic Devices & Storage Corporation Group is pursuing creation of new values and symbiosis with the Earth. Also Toshiba Electronic Devices & Storage Corporation Group contributes to the development of a sustainable society by promoting environmental activities designed to contribute to the realization of a world that is de-carbonized, recycling-based and nature-harmonious.

Policy

Toshiba Electronic Devices & Storage Corporation Group considers environmental stewardship to be one of management's primary responsibilities, and with our passion of "Our semiconductor and storage products will always be a driving force to change the world", Toshiba Electronic Devices & Storage Corporation Group strives to take the environment into consideration in its business activities such as development, manufacturing, sales, services, and disposal from life cycle perspective, and aims to contribute to the solution of social issues by its products and manufacturing created by technology and with passion toward the realization of sustainable society.

1. Compliance and sustainability

- 1) Toshiba Electronic Devices & Storage Corporation Group complies with all applicable laws and regulations, industry guidelines it has endorsed, and its own standards concerning the environment.
- 2) Toshiba Electronic Devices & Storage Corporation Group strives to continuously improve and effectively apply its environmental management system through internal audits and reviews in order to enhance environmental activities level and environmental performances.

2. Execution

Toshiba Electronic Devices & Storage Corporation Group strives to assess the environmental impact of its business activities, including with regard to biodiversity, which comprise of development, procurement, manufacturing and sales, set objectives with respect to energy saving and resource saving development and design of products, reduction of environmental impact, pollution prevention, and execute proactive environmental measures including the following:

- 1) Striving to create and supply products that contribute to solving social issues.
- 2) Promoting reduction greenhouse gases generated by our business activities to mitigate climate change.
- 3) Striving to reduce waste and make effective use of water resources by minimizing resources used in business activities and promoting 3Rs in order to build a recycling-based society.
- 4) Striving to manage chemical substances used in our business activities and reduce the amount handled and emitted in order to reduce environmental risk.
- 5) Striving to maintain and restore biodiversity in order to live in harmony with nature.
- 6) Striving to disseminate information and collaborating with local communities and society to facilitate mutual understanding with stakeholders.
- 7) Striving to enhance the environmental awareness with respect to all group members in order to process business activities considering environment throughout Toshiba Electronic Devices & Storage Corporation Group.

Toshiba Electronic Devices & Storage Corporation Group discloses this Statement of Environmental Philosophy to the public, promotes awareness of this Statement of Environmental Philosophy throughout Toshiba Electronic Devices & Storage Corporation Group, and promotes its business activities according to this Statement.

1st April, 2021

Toshiba Electronic Devices & Storage Corporation

President & CEO **Hiroyuki Sato**

Correspondence table with “Environmental Reporting Guidelines 2018” by Ministry of the Environment

Environmental Reporting Guidelines 2018	Toshiba Electronic Devices & Storage Corporation Environmental Report 2021	
Item	Corresponding item	Relevant pages
Chapter.1: Basic information of environmental reporting		
1. Basic requirements for environmental reporting		
Boundary of the reporting entity	Scope of the report	P.28
Reporting period for information provided	Scope of the report	P.28
Reporting standards, guidelines or the like	Environmental Reporting Guidelines 2018	P.28
Overview of the environmental report	Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)	P.05-P.07
	Toshiba Electronic Devices & Storage Corporation Environmental Activities https://toshiba.semicon-storage.com/ap-en/company/about/environment.html	—
2. Trends in key performance indicators		
Chapter.2: Items to be reported in environmental reporting		
1. Top management's commitments		
Top management's commitments on the entity's response to material environmental issues	Top Management Commitment	P.03
2. Governance		
The entity's governance structure	Environmental Management System	P.24
Name of the manager responsible for material environmental issues	Environmental Management System	P.24
The roles of the board of directors and the board of executive officers in the management of material environmental issues	Environmental Management System	P.24
3. Stakeholder engagement		
Corporate policies to stakeholders	Stakeholder Engagement Status	P.26
Overview of stakeholder engagement activities conducted in the reporting period	Stakeholder Engagement Status	P.26
4. Risk management		
Environment-related risk identification, assessment, and management processes	Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)	P.05-P.07
	Reduction of Environmental Impact in Manufacturing	P.14
Positioning of the above processes within the entity's overall risk management	Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)	P.05-P.07
	Reduction of Environmental Impact in Manufacturing	P.14
5. Business model		
The entity's business model	Value Chain Management	P.09
	Products that contribute to resolving social issues	P.10-P.11
6. Value chain management		
Value chain overview	Value Chain Management	P.09
Green procurement policy, objectives, and results	Value Chain Management	P.09
	Material procurement with consideration for the environment	P.13
Status of eco-friendly products and services	Value Chain Management	P.09
	Responding to Customer Inquiries	P.13
7. Long-term vision		
Long-term vision		
Time period covered by the long-term vision	Toshiba Group The Seventh Environmental Action Plan and Toshiba Electronic Devices & Storage Corporation Targets for environmental performance	P.04,P.08
Reasons why that time period was selected		
8. Strategy		
Business strategy of an entity developed for contributing to the achievement of a sustainable society	Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)	P.05-P.07
9. Methodology for identifying material environmental issues		
Procedure by which the entity identified its material environmental issues	Toshiba Group The Sixth Environmental Action Plan	P.04
	Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)	P.05-P.07
List of identified material environmental issues	Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)	P.05-P.07
Reasons that the identified environmental issues were judged material	Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)	P.05-P.07
Boundaries of the material environmental issues	Value Chain Management	P.09
10. The entity's material environmental issues		
Policies and/or action plans	Toshiba Group The Sixth Environmental Action Plan / Toshiba Group The Seventh Environmental Action Plan	P.04,P.08
	Statement of Environmental Philosophy of Toshiba Electronic Devices & Storage Corporation Group	P.25
Targets and results of policies / action plans based on performance indicators	Toshiba Electronic Devices & Storage Corporation Targets and actual results for environmental performance (11 items in total)	P.05-P.07
Methodologies used for calculating each performance indicator	Included on the environmental activity website 'Environmental Accounting' of Toshiba Corporation https://www.toshiba.co.jp/env/en/management/account.htm	—
Aggregation scope of data for each performance indicator	Included on the environmental activity website 'Environmental Accounting' of Toshiba Corporation https://www.toshiba.co.jp/env/en/management/account.htm	—
Financial impact of related risks and opportunities and calculation methodology thereof, if the financial impact is significant	Included on the environmental activity website 'Environmental Accounting' of Toshiba Corporation https://www.toshiba.co.jp/env/en/management/account.htm	—
An assurance report, if an independent third party provided assurance to the items to be reported	Cooperation for third-party evaluation	P.25

Scope of the report

Reporting period : Fiscal 2020 (from April 1, 2020 to March 31, 2021)
Although the report focuses on the results of activities in fiscal 2020, it also includes those ongoing activities prior to and after fiscal 2020.

Organizations covered: Toshiba Electronic Devices & Storage Corporation Group*
*“Toshiba Electronic Devices & Storage Corporation Group” where mentioned, is a separate company of Toshiba Corporation, and refers to Toshiba Electronic Devices & Storage Corporation and its consolidated subsidiaries in Japan and overseas.

Publication

Previous issue: November 2020
Current issue: November 2021

Editor's postscript

Thank you for reading the Environmental Report 2021.
This report introduce our achievement and goals based on the 6th Environmental Action Plan and 7th Environmental Action Plan goals of the Toshiba Group, their contribution to SDGs, and value chain management and stakeholder engagement. It also explain in detail how our environmental activities meet the demands of SDGs and stakeholders. In addition, we hope this report deepens your understanding of our contribution to society through our environmental activities together with the latest case studies of our activities introduced in this pamphlet. If you have any questions about our activities or the content of this report, kindly contact us through the following URL.

<https://toshiba.semicon-storage.com/ap-en/company/about/environment.html>

Productivity Planning Div. Environment Planning Promotion Group, Toshiba Electronic Devices & Storage Corporation

- If you have any inquiries, please contact us at the following website.
<https://toshiba.semicon-storage.com/ap-en/company.html>
- The original texts of laws and regulations, including but not limited to the EU RoHS Directive should be consulted for a full understanding of legal requirements. Environmental laws and regulations may be revised at any time, so users should take care to remain informed. The information contained herein is intended to be informative but carries no legal authority and does not constitute legal advice.
- Toshiba Electronic Devices & Storage Corporation Group reserves the right to revise the content of this Environmental Report without notice.
- The information contained herein is subject to change without notice.

**Our semiconductor and storage products
will always be a driving force to change the world**