

TOSHIBA CORPORATION
STORAGE & ELECTRONIC DEVICES SOLUTIONS COMPANY

ENVIRONMENTAL REPORT

2016

The background of the lower half of the cover is a blue sky with white clouds over a blue ocean. Four transparent spheres are floating in the sky. The top-left sphere contains a close-up of two hands shaking. The top-right sphere contains a wind turbine and a tree. The bottom-left sphere contains green leaves on a branch. The bottom-right sphere is the largest and contains a map of the world with a bright sunburst effect over the Asia-Pacific region.

Environmental Report

The Environmental Report 2016 of the Storage & Electronic Devices Solutions Company of Toshiba Corporation presents the results of the Storage & Electronic Devices Solutions Company Group's environmental management activities in fiscal 2015. This report has been compiled by referring to *The Guidelines for Environmental Report (fiscal 2012 version) of the Ministry of Environment, Japan* and *The Guidelines for Environmental accounting (fiscal 2005 version) of the Ministry of Environment, Japan*.

This report has two major objectives: (1) to explain our energy saving efforts in our product development and (2) to describe the environmental preservation activities conducted by our plants.

Scope of the report

Reporting period: Fiscal 2015 (from April 1, 2015 to March 31, 2016)

Although the report focuses on the results of activities in fiscal 2015, it also includes those ongoing activities prior to and after fiscal 2015

Organizations covered:

* "Storage & Electronic Devices Solutions Company" or "Toshiba Storage & Electronic Devices Solutions Company" in this report means the Storage & Electronic Devices Solutions Company of Toshiba Corporation which is one of the in-house companies of Toshiba Corporation.

Meanwhile, "Storage & Electronic Devices Solutions Company Group" and "Toshiba Storage & Electronic Devices Solutions Company Group," in this report mean the Storage & Electronic Devices Solutions Company and its consolidated subsidiaries in Japan and overseas.

Note: When referenced in this report, "Toshiba Group" means Toshiba Corporation and its consolidated subsidiaries in Japan and overseas.

Publication

Previous issue: February 2016

Current issue: February 2017

Storage & Electronic Devices Solutions Company Overview (as of 31st March, 2016)

Company name: Toshiba Corporation Storage & Electronic Devices Solutions Company,

Address: 1-1-1, Shibaura, Minato-Ku, Tokyo 105-8001, Japan

Number of employees: 34,000 (Electronic Devices segment as of 31 March, 2016)

Consolidated sales: 1,605,000 million yen (Electronic Devices segment in FY2015)

[Storage & Electronic Devices Solutions Company's major product categories]



Major manufacturing sites and affiliated companies

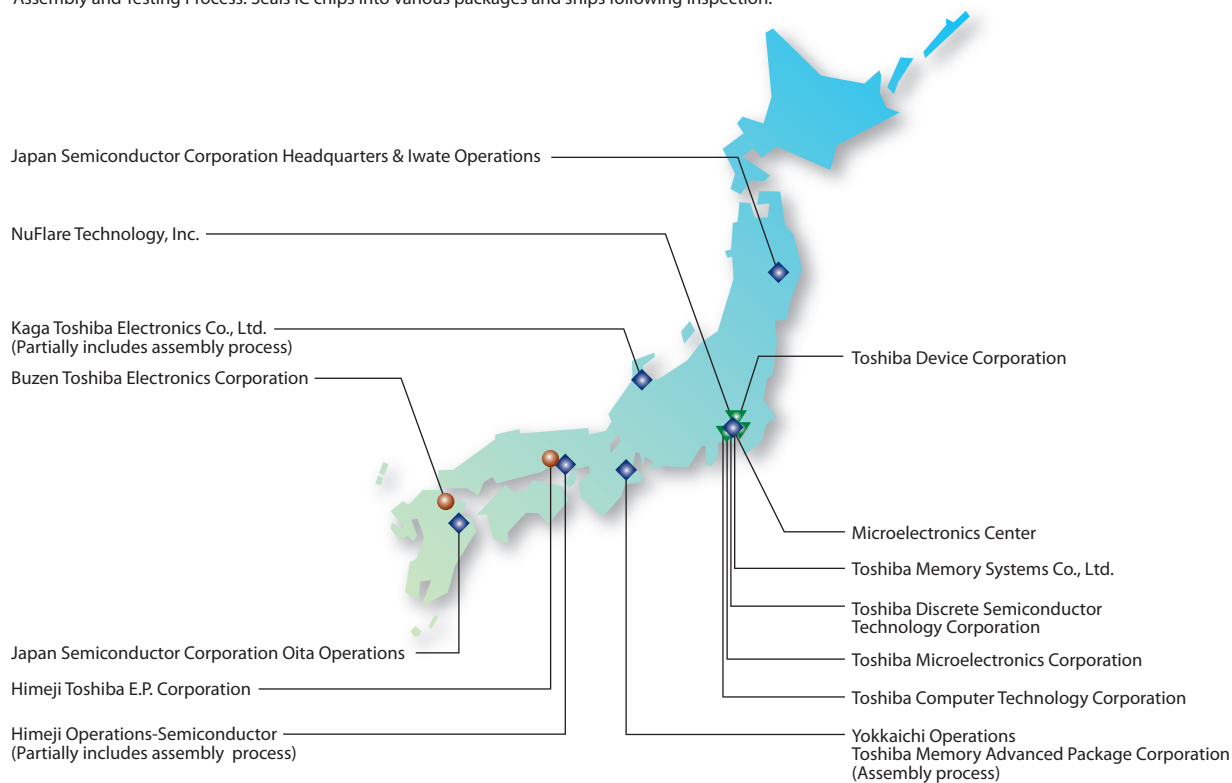
◆ Wafer Process Plant / Institute

Wafer Process: Fabricates integrated circuits on silicon wafers.

● Assembly and Testing Process Plant

Assembly and Testing Process: Seals IC chips into various packages and ships following inspection.

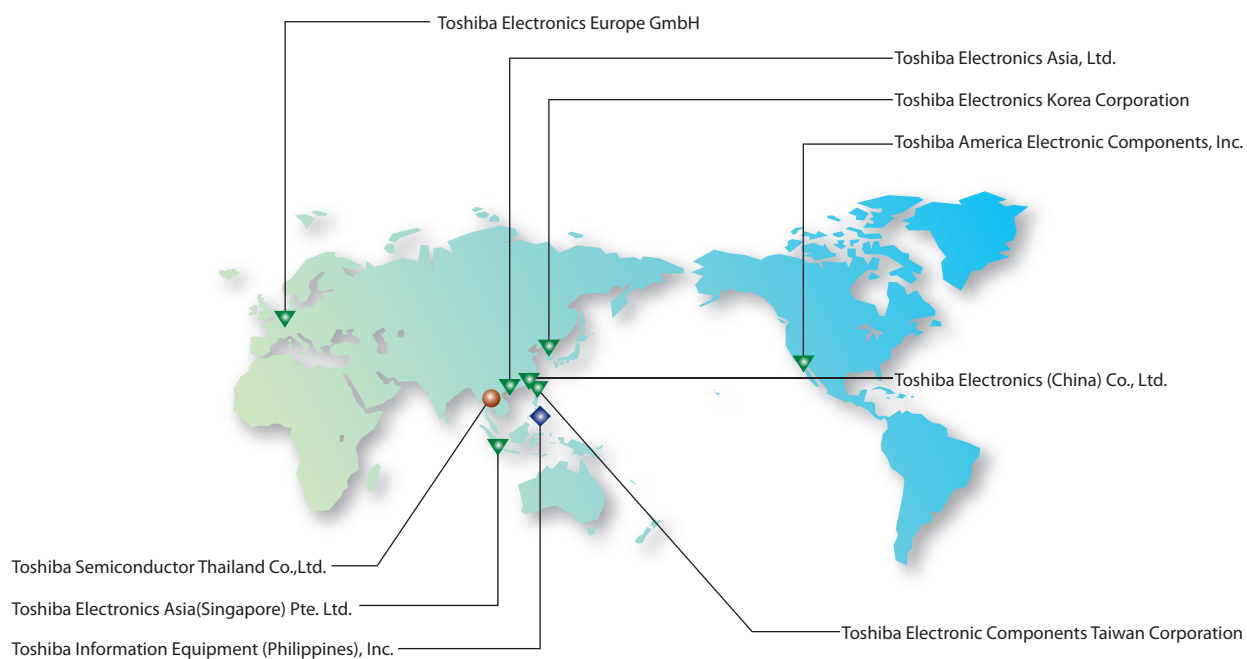
▼ Other Divisions / Design Center, Sales, etc



● Assembly and Testing Process Plant

◆ Storage Products Manufacturing Plant

▼ Major Overseas Sales Offices



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We promote environmental management with the goal to help resolve social issues.



Yasuo Naruke

President,
Toshiba Storage & Electronic Devices Solutions Company

Foreword

The Paris Agreement was adopted at COP21 (the 21st UN Conference on Climate Change) in December 2015, along with member nations, and it was decided to proceed with countermeasures against global warming to achieve long-term targets. As a result, Japan plans to reduce its greenhouse gases by 26% vs. its 2013 targets by 2030.

The Toshiba Group will conduct its business activities with the aim of contributing to the global reduction of greenhouse gases by the development of energy conserving products, high efficiency manufacturing and the introduction of low carbon technologies in its Storage, Social Infrastructure and Energy Business fields in line with international global warming countermeasures.

Developing optimal semiconductor and storage technologies for the information oriented society.

Storage & Electronic Devices Solutions Company holds the key to the contribution of reduction of environmental load in the current information oriented society through its storage products which are contributing to energy conservation at data centers and in power devices, as well as in the social infrastructure and system LSI featuring higher processing capabilities.

Creative solutions are called for as cloud computing expands and world demand from the rapid increase in data volumes and information explosion accelerates. As data centers save and process increased volumes of information, and demand for storage systems with high speed processing and huge capacity increases, more efficient energy conservation is required. We, as a total solutions storage supplier, work on performance enhancement of SSD (solid state drives) and HDD (hard disk drives), and propose new storage systems featuring NAND-type flash memory aimed at creating compactness and low power consumption in the effort to conserve while enjoying the high data processing capabilities of NAND-type flash memory.

Regarding automotive, industrial and wireless system LSIs, we are determined to further energy conservation efforts and to increase compactness, and to pursue connectivity (sensing, transmission and control) contributing to the improvement of safety and reliability, as well as the popularization and higher durability of IoT (Internet of Things), linked to the cloud. Our power semiconductors are not only highly reliable and highly durable, but they can efficiently convert DC to AC or transform voltage, and thereby support energy conservation in power transmission and distribution (T&D), applicable to railroads, hybrid vehicles and other social infrastructure elements.

Through innovative craftsmanship, Storage & Electronic Devices Solutions Company is committed to the reduction of environmental load in manufacturing.

The total quantity of GHG (greenhouse gases) or CO₂ emissions discharged in our manufacturing processes comprises around 60% of the entire Toshiba Group's GHG or CO₂ emissions. Due to expansion of demand for smart-phones and data center usage, memory products manufacturing energy consumption is expected to increase. To address global warming, focus on the reduction of energy consumption is one of our top management priorities. For example, at our Yokkaichi Operations that manufactures NAND-type flash memories, plans to introduce AI (artificial intelligence) and measures to improve the yield and productivity rates in the manufacturing process by quickly and accurately analyzing over 1.6 billion data bits per

day, and the output by thousands of manufacturing and inspection devices are being put into place. With these measures, we believe that we can achieve further resource and energy conservation measures in manufacturing.

In addition, we have long worked toward energy conservation in power and manufacturing facilities, and share advanced energy conservation examples company-wide as inter-departmental projects, and seek to continuously improve our plant development.

We also promote effective utilization of resources and promote the reduction of chemical substances. Every plant contributes toward the reduction of chemical substances, increased waste liquid recycling and other 3R (reduce, reuse and recycle) activities. Going forward, our commitment to improving productivity with state-of-the-art craftsmanship and promoting the reduction of environmental loads in our manufacturing processes will continue.

Deepening community bonds through environmental responsibility.

The Toshiba Group promotes environmental communication, biodiversity preservation activities and other efforts that lie at the foundation of its environmental responsibility to society. Storage & Electronic Devices Solutions Company also participates in biodiversity preservation activities like creating green belts, maintaining forests and preserving local rare species around production bases both inside and outside of Japan, and participates in the annual Toshiba Group Environmental Exhibition, transmits environmental information via the worldwide web and conducts other environmentally related activities.

Local community groups and members, as well as neighbors around manufacturing facilities, are invited to information meetings where they are introduced to plant-related environmental efforts. Visits to local elementary schools introduce environmental responsibility information and other activities to generate communication with the local community. We strive to make efforts to deepen our neighbors' understanding of our environmental activities through these local community outreaches.

Toshiba Storage & Electronic Devices Solutions Company Group appreciates your interest and support for our business activities and environmental responsibilities.

Introduction

Invisible to society, Toshiba's products

In the IoT society, where everything is linked via the internet, and trends toward a low-carbon society grow with emphasis on preserving the Earth's environment,

support safety, convenience and energy conservation.

we aim to contribute to energy conservation through Toshiba's semiconductor and storage technologies and our application devices, to reduce environmental loads demanded by the growing information infrastructure.

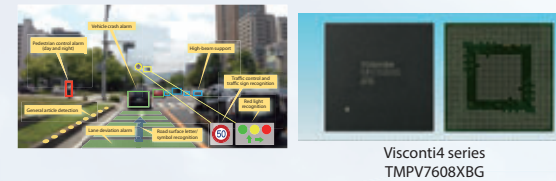
IEGT

IEGT (Injection Enhanced Gate Transistor) is used in motor controls at railroads and in hybrid vehicles and in power transformers at power stations. We strive to develop IEGT aiming to contribute to energy efficiency and compactness of application products.



Visconti™

Visconti™ is a high performance image recognition processor that instantly analyzes and inputs an image from cameras and supports safe driving.



IPD

IPD (Intelligent Power Device) is an output stage single package control circuit with various protection functions, for motor drive and features excellent compactness.

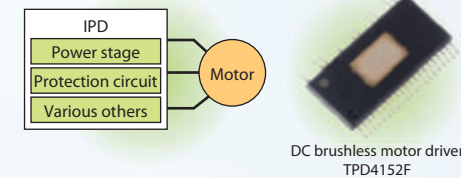


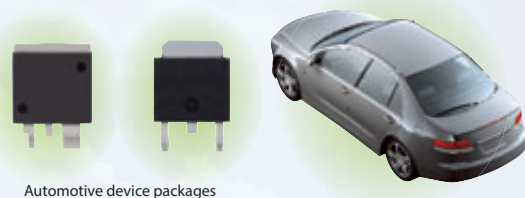
Photo-coupler

A device that converts electric signals to light, reconverts to electric signals to maintain the integrity of power circuits. It is used in TVs, refrigerators, air-conditioners and various other home appliances.



Automotive semiconductors

Semiconductors are used in steering, braking control, and door mirror systems as well as in other areas. These automotive devices must meet strict environmental standards.



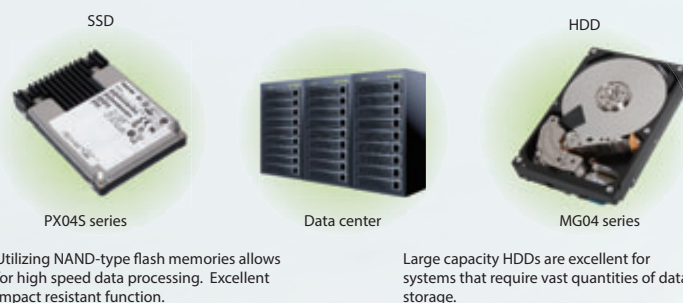
Vector control microcomputer

Storage devices for SSD and HDD require effective cooling fans. Vector controlled microcomputers enables maximum motor efficiency



Storage products for data centers and business users

Tiered storage systems are structured in effective high-speed SSD combinations and feature large-capacity HDD, contributing to energy conservation at large-capacity data centers compared to conventional data centers structured only by large-capacity HDD.



Social infrastructure and logistics

Information infrastructure (data centers)

Life and homes

Smart-phones and wearable devices

Toshiba device solutions that underpin social infrastructure

Three-Dimensional

flash memory "BiCS FLASH™"



Memory capacities for NAND-type flash memories installed at data centers, in smart-phones, industrial robots, car navigation systems and other devices have increased thanks to miniaturization of designs and process rules. However, due to a variety of problems caused by miniaturization of designs and process rules, the technology for further capacity enlargement of 2D structure NAND-type flash memories, has become extremely challenging. In order to overcome this limitation, we have devised and developed a 3D flash memory strata structure, and launched the BiCS FLASH. Sample shipments of 64-layer products were started in 2016. Toshiba Group plans to manufacture these chips at the Yokkaichi Operations, the new No. 2 manufacturing ward. Compared to 2D flash memories, the new products consume less power per writing data, and we have high expectations for them in a large number of applications.

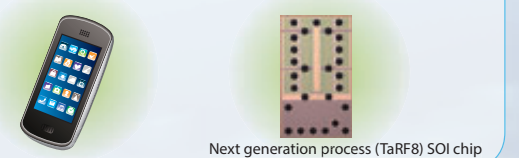
DTMOS, U-MOS

Semiconductors used in power sources to control, increase/decrease voltage, DTMOS, U-MOS feature minimal loss, that support energy conservation in servers, data transmissions and in other devices.



SOI-SW

Toshiba developed an antenna switch that does not use hazardous gallium arsenide with our unique process using SOI (silicon on insulator) technology. High performance and compact size are achieved.



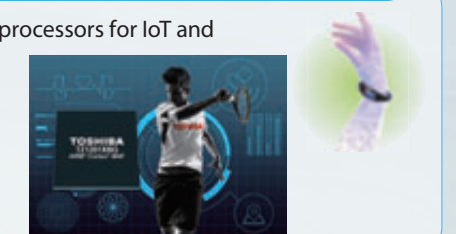
Bluetooth® low energy

Bluetooth low energy is a standard of Bluetooth wireless communication and has low power consumption. Longer battery life in wearable devices is achieved.



ApP Lite™ TZ1200 series

TZ1200 series processors for IoT and wearable devices that can display a variety of data with less power consumption.



*: Visconti™, BiCS FLASH™, ApP Lite™ are trademarks of Toshiba Corporation. Bluetooth® is a trademark of Bluetooth SIG INC.

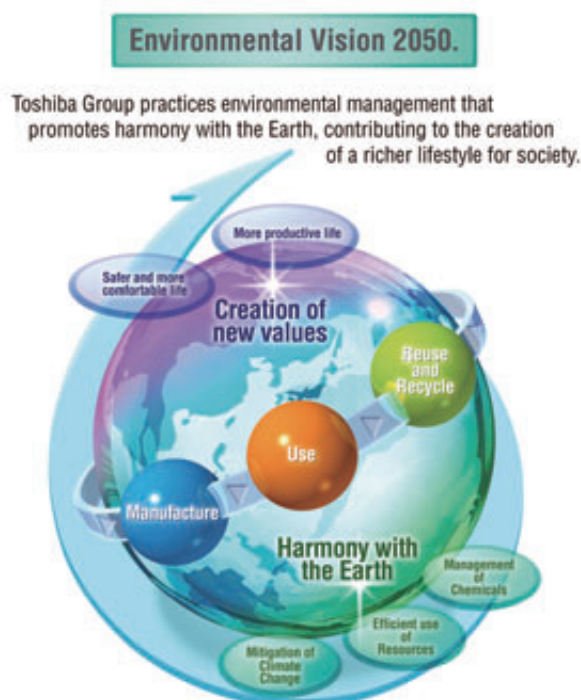
Environmental Management

Toshiba Group's efforts to preserve the environment and global business activities go hand in hand.

Toshiba Group's environmental vision for 2050 is based on its goal that human life should be in harmony with the globe. We have aimed for harmonious coexistence with the globe throughout the lifecycle of our products from manufacture to use, reuse and recycling. We will continue to make efforts to address global warming, make effective use of resources and manage the use of chemical substances to reduce environmental impact.

The Toshiba Group promotes environmental activities based on its four strategies from the 5th environmental action plan to achieve the Environmental Vision 2050. Efforts in the four categories include: "Greening of Products" to develop products with enhanced environmental performance, "Greening by Technology" to achieve low-carbon in power generation and supplies, "Greening of Process" to enable highly efficient manufacturing with lower environmental loads and "Green Management" to promote environmental management and environmental communication.

Storage & Electronic Devices Solutions Company also promotes business activities that contribute to the sustainability of society in accordance with the Toshiba Group Environmental Vision 2050, such as developing devices that feature energy conservation, support the social infrastructure and reduce the load created by the explosion of information on storage systems. Storage & Electronic Devices Solutions Company promotes proactive and friendly exchanges with local communities. These activities are showcased at the annual Toshiba Group Environmental Exhibition.



● Toshiba Storage & Electronic Devices Solutions Company Group's Environmental Philosophy Statement

Storage & Electronic Devices Solutions Company has established an environmental policy in accordance with environmental efforts and business changes. It has revised its environmental policy, as shown below, in order to combine its environmental management system with its business processes and further enhance its environmental performance in compliance with ISO14001:2015 standards as of October 1, 2016.

The statement of environmental philosophy is posted on our website and is made thoroughly known to employees through environmental education. We will promote our activities while addressing environmental issues as one of our most important management priorities, based on this environmental philosophy.

Statement of Environmental Philosophy of Toshiba Storage & Electronic Devices Solutions Company 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 Storage & Electronic Devices Solutions Company Group is pursuing creation of new values and symbiosis with the Earth. Also Toshiba Storage & Electronic Devices Solutions Company Group contributes to the development of a sustainable society by promoting environmental activities designed to contribute to the realization of a world that is low-carbon, recycling-based and nature-harmonious.

Policy

Toshiba Storage & Electronic Devices Solutions Company Group considers environmental stewardship to be one of management's primary responsibilities, and promotes environmental activities proactively to reduce the environmental impact in the manufacturing process for storage and semiconductor products from the design stage in harmony with economic activities. Toshiba Storage & Electronic Devices Solutions Company 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 society by supplying products that consider environmental impact, and by realizing energy saving and reduction of resource usage in equipment in which storage and semiconductor devices are installed.

1. Compliance and sustainability

- 1) Toshiba Storage & Electronic Devices Solutions Company Group complies with all applicable laws and regulations, industry guidelines it has endorsed, and its own standards concerning the environment.
- 2) Toshiba Storage & Electronic Devices Solutions Company 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 Storage & Electronic Devices Solutions Company Group strives to assess the environmental impact of its business activities including with regard to biodiversity which comprehend development, procurement, manufacturing and sales, set objectives and targets with respect to the reduction of environmental impact, pollution prevention and development of energy saving technologies, and execute proactive environmental measures including the following:

- 1) Striving to create and supply storage and semiconductor products that consider environmental impact through the development of energy-saving and resource-saving designs, and by the restriction of the amounts and types of chemical substances contained in products;
- 2) Promoting reduction of our contribution to global warming by implementing productivity improvements, reducing our emission of greenhouse gases, developing and implementing energy-saving technologies for power systems and manufacturing equipment, along with establishing guidelines to track our progress in these issues;
- 3) Contributing to a recycling-based society through efforts to promote 3R (reduce, reuse, recycle) measures proactively along with improving productivity, developing technologies to reduce, reuse or recycle resources used during our manufacturing processes, and establishing guidelines related to our waste and recycling, while also promoting efficient utilization of natural resources by implementing measures aiming to reduce waste generation and water intake;
- 4) Promoting risk reduction on environmental issues by appropriately restricting and using chemical substances, developing technologies to effectively reduce the use of certain chemical substances, and establishing guidelines for our chemical usage, along with making efforts to reduce the total amount of chemical substances released into the environment and the amount of chemical substances treated;
- 5) In order to preserve biodiversity, Toshiba Storage & Electronic Devices Solutions Company Group strives to assess and mitigate the environmental impact of its business activities on biodiversity and seeks to make a better contribution to society;
- 6) Facilitating mutual understanding with stakeholders by disclosing information through public relations, exhibitions, and mass-media regarding storage and semiconductor products from the energy-saving viewpoint, and collaborating with local communities and society at large;
- 7) Striving to enhance the awareness of employees with respect to environmental management, and considering the environment in business activities and processes throughout the Toshiba Storage & Electronic Devices Solutions Company Group.

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

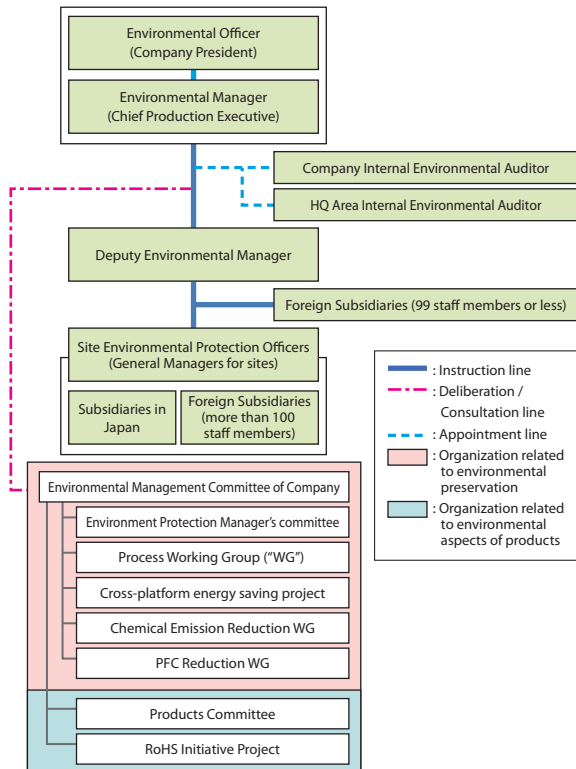
Revised on Oct 1, 2016

Yasuo Naruke

President, Toshiba Storage & Electronic Devices Solutions Company

Four Elements for Promotion of Environmental Management

As with Toshiba Group, the environmental management of the Storage & Electronic Devices Solutions Company Group comprises four elements: 1) improvement of the environmental management system, 2) evaluation through life cycle assessment (LCA) of the environmental impact of certain products, 3) business activities designed to reduce environmental impact and risks, and 4) environmental communication. Under these elements of environmental management, the Storage & Electronic Devices Solutions Company Group has been promoting proactive environmental activities.



Environmental Management Committee

The Environmental Management Committee is chaired by the Environmental Officer of the Storage & Electronic Devices Solutions Company (Storage & Electronic Devices Solutions Company President) and consists of executives, factory general managers, presidents of domestic manufacturing companies, and other functionaries. The committee handles diverse environmental issues, including reporting activities of business operations, confirming priority measures and ensuring that employees are aware of the Statement of Environmental Philosophy of the Storage & Electronic Devices Solutions Company.

Acquisition of ISO14001 Certification

The Storage & Electronic Devices Solutions Company Group is proceeding progressively with the acquisition of integrated certification for all its global business processes, and has maintained the certification (at 13 company sites within Japan and seven sites outside Japan (note)) in fiscal year 2016. We will continue our contributions to society by the creation and offering of energy and resource conservation and products that are consistent with the business policy based on our 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 which have acquired certifications and certification numbers, etc., see Chapter 5.

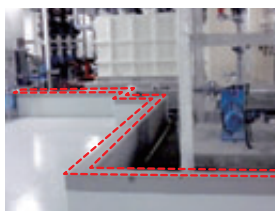
(Note) The scope extends to the main company and all Japan-based consolidated companies (manufacturing and non-manufacturing) and overseas consolidated companies (manufacturing and non-manufacturing) with more than 100 employees.

Column Measures to prevent hazardous substance discharges at manufacturing sites

All Storage & Electronic Devices Solutions Company Group worksites join in the commitment to prevent hazardous substance discharges. In this column, we introduce some examples of these efforts.

① Hardware measures:

We introduced drainage dikes, double jointed piping and above-ground aerial piping to prevent hazardous chemical substance leaks. (Photos are from Yokkaichi Operations)



Drainage dikes
*Red frame indicates a drainage dike. Installation of drainage dikes to prevent leakage of fluids when wastewater is spilled from tanks.



Double joints in piping
Installation of double joints in piping to enable checking for leakage of fluids

② Software measures:

Troubleshooting drills to catch abnormalities and stage foreseeable emergencies are held. The following drill is to counter the possibility of a oil fuel leak. The drill scenario posits a vehicle that has spilled fuel down roadside drains. Employees quickly block the gutters with sandbags, apply neutralizing agents, absorb oil with absorbents and review the training performance. (Photo: Japan Semiconductor Iwate Operations)



1. Fuel oil leaked from the transporting vehicle and spilled into rainwater drains.
2. Employees blocked the gutters with sandbags
3. Employees checked cesspools and confirmed oil spilled downstream, and applied neutralizing agents and absorbed oil with absorbents
4. Recapitulated the training.

Compliance with Laws and Risk Management

The Toshiba Group has established self-regulation values which are stricter than applicable laws for environmental impact discharges to bodies of water and air borne emissions, and are following our self-imposed rules through individual approaches at each business operation. Internal environmental audits are conducted to identify potential environmental risks, thereby striving to prevent environmental accidents from occurring. Information regarding audit results are shared throughout the group. Each business operation also reduces environmental risk at facilities with various measures such as the installation of double containment systems in facilities that use pipes and storage tanks for chemical agents. During FY2015, no group member was in breach of any environmental law nor subject to any fine or other penalty related to the environment.

Implementation of Environmental Audit at Toshiba Group

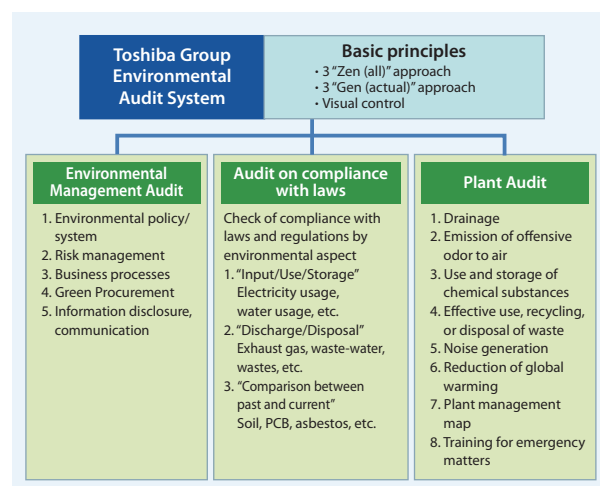
Since 1993, the Toshiba Group has been conducting regular environmental audits covering most sites of Toshiba and its Group companies through its proprietary *Toshiba Group Environmental Audit System*. This system is based on the "3 Zen (all) approach," which promotes management of all facilities in all areas by all employees; the "3 Gen (actual) approach," which emphasizes measurement of the actual situation of actual items at actual plants; and the "visual control" approach, which includes, for example, the practice of labeling every piece of equipment to indicate its proper status so that it can be checked easily in the field for compliance.

Audits at manufacturing sites, called "site environment audits," are executed at all manufacturing sites in Japan and outside Japan.

The audit is conducted for two days by an audit team that consists of qualified auditors from within the company. The sites receive audits on the following items: 1) environmental management, 2) legal compliance and 3) plant management, as displayed in the figure on the right-hand. The plant audit, in particular, is conducted at 19 facilities and includes checks of waste water treatment equipment, recycling, and chemicals warehouses and facilities that use chemicals, as well as training for handling emergency situations. Compliance, measurement control, 4S (Seiri, Seiton, Seiketsu, and Seisou, meaning in English: sorting (removing unnecessary things), straightening (keeping things orderly and available as needed), sanitation, and sweeping (maintaining a clean workplace)), and employee education are also strictly monitored. Any audited site which receives instructions for improvement, if any, must implement corrective measures within six months in order to implement further optimization and continuous improvements.

Countermeasures to achieve improvements, identified in the audit, must be implemented within 6 months, thus clearing the way for further efficiency of on-site management and continuous improvements.

The Storage & Electronic Devices Solutions Company Group endeavors to ensure thorough compliance with laws and regulations, the reduction of environmental loads at each plant, reduction of risks and other efforts to enhance its environmental performance through the global consolidated environmental audit system and ISO14001.



Plant audits at manufacturing sites in Japan

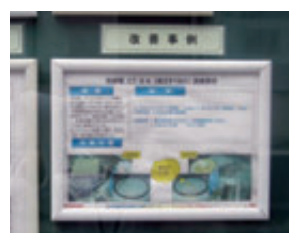


Specific examples of findings from Toshiba Group Environmental Audit System



•Examples of a recommended improvements

(Auditor's comment)
Make available improved environmental preservation measures, for example, on notice boards in front of each facility, in order to inform employees. (This measure was implemented in response to an auditor's comment.)



•Good example

(Auditor's comment)
For emergency materials, contents have been displayed graphically to make them easily understood. Access to these displays are sealed and dated.

Environmental Training According to Employee Job Functions and Specialties

The Storage & Electronic Devices Solutions Company Group is conducting environmental education for all employees in order to make them thoroughly understand environmental management and to raise awareness of environmental activities.

The Storage & Electronic Devices Solutions Company Group uses e-learning software for general environmental training of its employees. For new employees, engineers, and sales representatives, face-to-face training is also provided. The training through e-learning is designed for all employees,

resulting in improved understanding of the environmental management system of the Toshiba Storage & Electronic Devices Solutions Company Group.

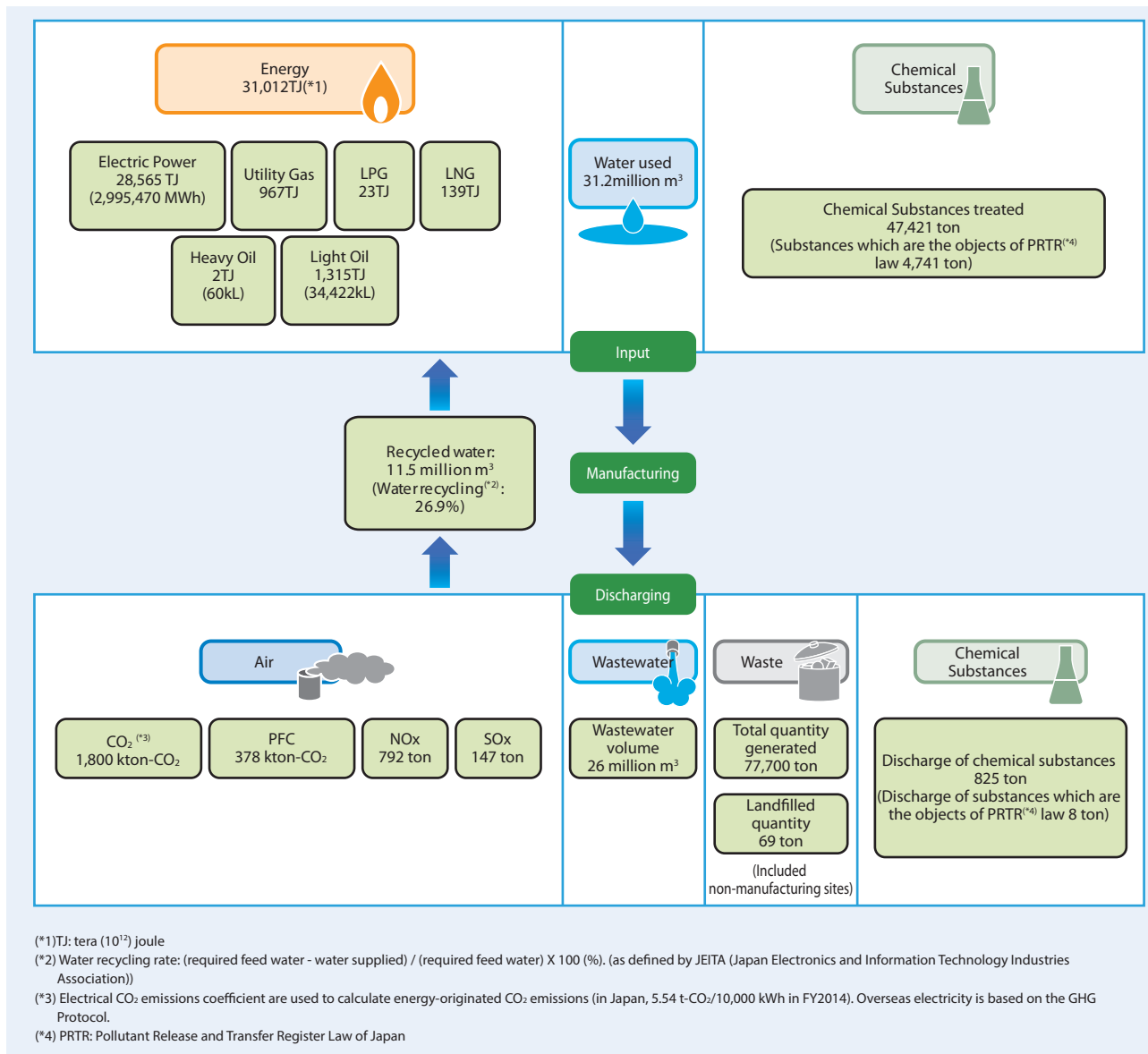
We also train auditors for Toshiba Group Environmental Audit System based on the internal auditor training program of the Toshiba Group. Potential candidates for the training program for site environment auditors must be above the rank of section manager. They sit written tests and undergo plant training on the applicable environmental laws, ISO environmental management systems, internally structured policy, rules, and other key areas.

We will continue to educate all employees and review content to enhance employees' environmental awareness.

Current Status of Environmental Impact

The Storage & Electronic Devices Solutions Company Group strives to improve environmental efficiency by analyzing its impact on the environment, utilizing the environmental management information system.

The status of Storage & Electronic Devices Solutions Company Group's environmental impact in FY2015 is described below. Please refer to chapter 3 "Business Activities to Promote the Reduction of Environmental Impact" regarding some of our specific initiatives currently ongoing in our efforts to reduce the impact of our business activities on the environment.



Targets and Outcomes

The Toshiba Group has enhanced its environmental activity level by expanding action items and numbers of involved worksites in several stages since the first environmental action plan established in 1993. Today, we are making efforts to be an enterprise that contributes to the sustainable lifestyles of individuals and society based on the fifth environmental action plan, which has its term from FY2012 to FY2016.

In this chapter, we will introduce the achievements of FY2015 plan and our plans in FY2016.

Achievement of FY2015 plan by the Toshiba Storage & Electronic Devices Solutions Company Group

As shown in the table below, we achieved all target items in FY2015. To meet reduction targets of greenhouse gases, we introduced inter-departmental energy conservation activity measures and removal facilities for PFC gases. We also developed measures for the reduction of waste based

on the 3R (reduce, reuse and recycle) principle. (See columns in p. 19 to 20.) In regards to the reduction of chemical emissions and substances, we instituted recycling and chemical reduction plans.

| Item | Indicator | FY2015 | | | |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------|------------------------------------|------------|---------------------------------------------------------------------------------------|
| | | Plan | Result | Evaluation | Activities to achieve plan |
| Reduction of energy-originated CO ₂ emissions ^{*1} | Total emissions | 1,998 thousand ton-CO ₂ or less | 1,797 thousand ton-CO ₂ | ○ | Reduction activities promoted by the Cross-platform energy saving project (P.17) |
| Reductions of total emissions of certain greenhouse gases, excluding CO ₂ ^{*2} | Total emissions | 464 thousand ton-CO ₂ or less | 378 thousand ton-CO ₂ | ○ | Reduction activities promoted by the PFC Reduction WG (P.19) |
| Emissions of chemical substances to air and water (total amount) | Total emissions | 1,040 ton or less | 825 ton | ○ | Installed VOC (Volatile Organic Compounds) abatement systems, and the like |
| Chemical substances treated (total amount) ^{*4} | Total handled amount | 54.1 thousand ton or less | 47.4 thousand ton | ○ | Promoting chemical substances recycling at waste water treatment, and the like (P.19) |
| Total waste amount ^{*3} | Total amount of waste generated minus amount of valuable waste | 47.1 thousand ton or less | 44.3 thousand ton | ○ | Promoting metal materials recycling, and the like |
| Reduction in the total amount of waste generated | Total waste generated | 90.4 thousand ton or less | 77.7 thousand ton | ○ | Promoting waste recycling(P.20) |
| Reduction of water intake | Amount of water intake | 35,798 thousand m ³ or less | 31,202 thousand m ³ | ○ | Promoting waste water recycling, and the like |
| Biodiversity preservation activities | Preservation and measurement of objective species at all targeted sites | All sites | All sites | ○ | Promoting biodiversity activities based on local experts advice (P.20 to 21) |

(○: Achieved target)

Supplementary notes:

*1: Electrical CO₂ emissions coefficient are used to calculate energy-originated CO₂ emissions (in Japan, 5.54 t-CO₂/10,000 kWh in FY2014). Overseas electricity is based on the GHG Protocol.

*2: The subject substances: based on Global Warming Countermeasures Act, Emission quantity calculation methods: based on 2006 IPCC guidelines, Global Warming Potential (GWP) coefficient: Based on IPCC 4th evaluation report.

*3: The waste amount is remaining after valuable materials are subtracted from the total amount of waste generated.

Plans Post FY2016 by the Storage & Electronic Devices Solutions Company Group

Below chart is FY2016 environmental performance plan. We can expect a higher demand for our products as the market for smart-phone storage systems, data centers and other application fields increase in the future. We anticipate the increase of environmental loads as a result of expanding

our production capabilities. But at the same time, we will conduct effective energy conservation investments in new lines, enhance efficient raw material use, and for chemical substances to promote resource conservation and waste recycling all in the effort to reduce environmental loads.

| Item | Indicator | FY2016 |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------|
| | | Plan |
| Reduction of energy-originated CO ₂ emissions ^{*1} | Total emissions | 2,025 thousand ton-CO ₂ or less |
| Reductions of total emissions of certain greenhouse gases, excluding CO ₂ ^{*2} | Total emissions | 471 thousand ton-CO ₂ or less |
| Emissions of chemical substances to air and water (total amount) | Total emissions | 1,020 ton or less |
| Chemical substances treated (total amount) | Total handled amount | 50.0 thousand ton or less |
| Total waste amount ^{*3} | Total amount of waste generated minus amount of valuable waste | 50.1 thousand ton or less |
| Reduction in the total amount of waste generated | Total waste generated | 86.3 thousand ton or less |
| Reduction of water intake | Amount of water intake | 34,000 thousand m ³ or less |
| Biodiversity Preservation Activity | Number of objective sites (measurement and preservation activities) | 7 sites |

Supplementary notes:

*1: Electrical CO₂ emissions coefficient are used to calculate energy-originated CO₂ emissions (in Japan, 5.54 t-CO₂/10,000 kWh in FY2014). Overseas electricity is based on the GHG Protocol.

*2: The subject substances: based on Global Warming Countermeasures Act, Emission quantity calculation methods: based on 2006 IPCC guidelines, Global Warming Potential (GWP) coefficient: Based on IPCC 4th evaluation report.

*3: The waste amount is remaining after valuable materials are subtracted from the total amount of waste generated.

Reduction of Environmental Impact of Products

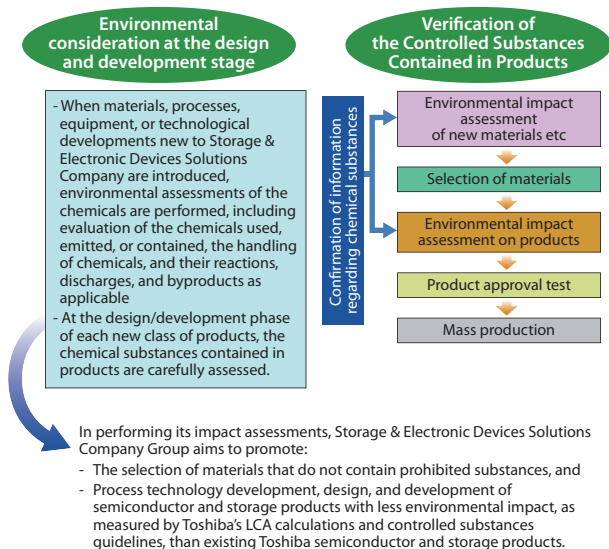
We promote product development while giving consideration to the environment through energy conservation and containment of chemical substances used in products.

Communication technologies have advanced in recent years, and smart-phones, cloud computing and other products and systems utilizing information and communications technology (ICT) will continue to drive tremendous increases in energy demand. Energy conservation in electronic devices is a pressing matter. Meanwhile regulations on chemical substances contained in products as they relate to the environment are becoming increasingly strict worldwide, and semiconductors and storage products must comply with these trends. Storage & Electronic Devices Solutions Company offers products for home appliances, storage systems, social infrastructure and many other uses. We are continuing efforts to create products in line with energy conservation and chemical substance management, throughout our product design, development, and production.

Environmental consideration at the stages of product design and engineering

At the stages of product design and engineering, the Toshiba Storage & Electronic Devices Solutions Company Group conducts assessments of the environmental impact of products as a part of its engineering process (please refer

to the chart below). Information on chemical substances contained in new raw materials and products is reviewed to identify the existence or use of "Procurement Prohibited Substances" and "Procurement Controlled Substances" as designated by the Toshiba Storage & Electronic Devices Solutions Company Group.



Toshiba Storage & Electronic Devices Solutions Company Group's approach regarding Controlled Substances

Japanese laws and regulations

- Law concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures,
- Law concerning the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
- Industrial Safety and Health Law,
- Law on Prohibition of Chemical Weapons and Regulation, etc., of Special Chemicals,
- The law concerning reporting, etc. of the release to the environment of specific chemical substances and promoting improvement in their management
- Water Pollution Control Law
- Waste Management and Public Cleansing Act

Laws and regulations outside Japan.

- "RoHS"-type regulations enacted in several countries/regions, WEEE Directive of EU, ELV Directive of EU, REACH, ErP Directive, etc.

Customers' requests and JAMP specified substances

Toshiba's regulated substances:

- Substances related to Toshiba green procurement for semiconductor and storage products,
- Toshiba Corporation Storage & Electronic Devices Solutions Company's regulated substances

Promoting Green Procurement Initiative

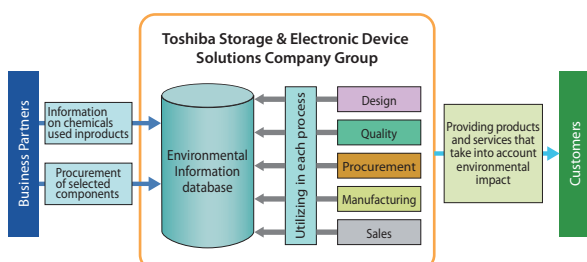
In line with its green procurement guidelines, Toshiba Storage & Electronic Devices Solutions Company Group requests suppliers to provide information related to the "Procurement Prohibited Substances" and "Procurement Controlled Substances" that we have designated, their system for meeting our environmental requirements, and supporting documents and materials. Every revision of our guidelines is followed by a meeting or other means for explanation to ensure our green procurement initiatives are fully understood by the suppliers. Since 2009, more effective and closer collaboration with suppliers in green procurement has been facilitated by providing information and materials through the Internet.

Our environmental focus starts from the product design and engineering stages.

Regulations controlling chemical substances in products have been or will soon be enforced in many countries. They include some major regulations that are relevant to Toshiba Storage & Electronic Devices Solutions Company Group, such as the EU's RoHS Directive, End of Life Vehicles (ELV) Directive, and Packaging and Packaging Waste Directive. Similar regulations to EU RoHS also went into effect in China and South Korea. Since June 2007, the EU has enforced REACH, which requires evaluation and registration of all chemical substances manufactured in or imported into the European Union. It also requires clarifying and understanding of chemical substances contained in products and provision of information for customers.

Semiconductor and storage products are used in an extremely wide range of applications, such as in electrical/electronic equipment, control systems, and vehicles. Hence, the control of information on chemical substances which comprise the products is an important factor for product quality assurance. The Toshiba Storage & Electronic Devices Solutions Company Group has designated certain chemicals used by the Group as "Procurement Prohibited Substances" and "Procurement Controlled Substances" in order to either prohibit or restrict content in products in accordance with applicable laws and regulations of each country.

We procure components and raw materials through green procurement activities that reflect our prohibitions or restrictions on Controlled Substances. In addition, we investigate the content percentages of chemical substances that might give significant impact to the environment and endeavor to select parts and raw materials with a lower impact on the environment. This information is stored in the database, and used to inform the authorization of new procurement, to determine when currently procured materials should be replaced, and to develop products (see the figure below). We offer information to our customers through proactive utilization of Joint Article Management Promotion (JAMP) and other common formats advocated in the industry.



LCA for Evaluation of Environmental Impact throughout Product Life Cycle

Life cycle assessment (LCA) is a method of evaluating a product by totaling the amount of material and energy input in a series of processes such as collection of resources for product materials, production of materials, manufacturing of products, transportation, distribution and disposal, and the amount of the substances released that impact the environment.

Toshiba Storage & Electronic Devices Solutions Company Group completed calculations of the LCA for sample products from nearly all of our product groups available for sale. The results are being used in studies and analyses on the environmental impact of our products.

The Storage & Electronic Devices Solutions Company Group calculates the impact of our products on the environment by LCA (life cycle assessment). We pursue best practices for all our devices in all phases of their lifecycles, from manufacturing to usage, and endeavor to achieve an effective reduction of their impact on the environment.

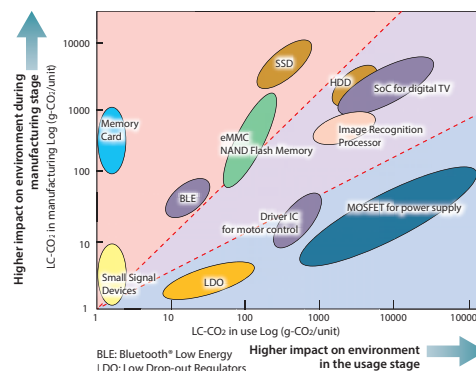
The chart below illustrates our approximation of comparative environmental impact for the manufacturing and use of semiconductor and storage product groups, as shown by our LCA calculations converted to CO₂ emissions.

The vertical axis shows the sum of CO₂ contained in raw materials and emitted during the production stage, including procurement. The horizontal axis shows the sum of the emissions in the usage stage, including disposal or recycling, taking into account average conditions of use and lifespan of the mounted devices.

For example, it is assumed in the chart that memory cards will be used in digital cameras; in this application, these products are characterized by a comparatively high ratio of CO₂ emitted during their production, mainly caused by clean room requirements. For this product group, the highest returns can be expected by implementing enhanced energy conservation measures during their manufacturing process.

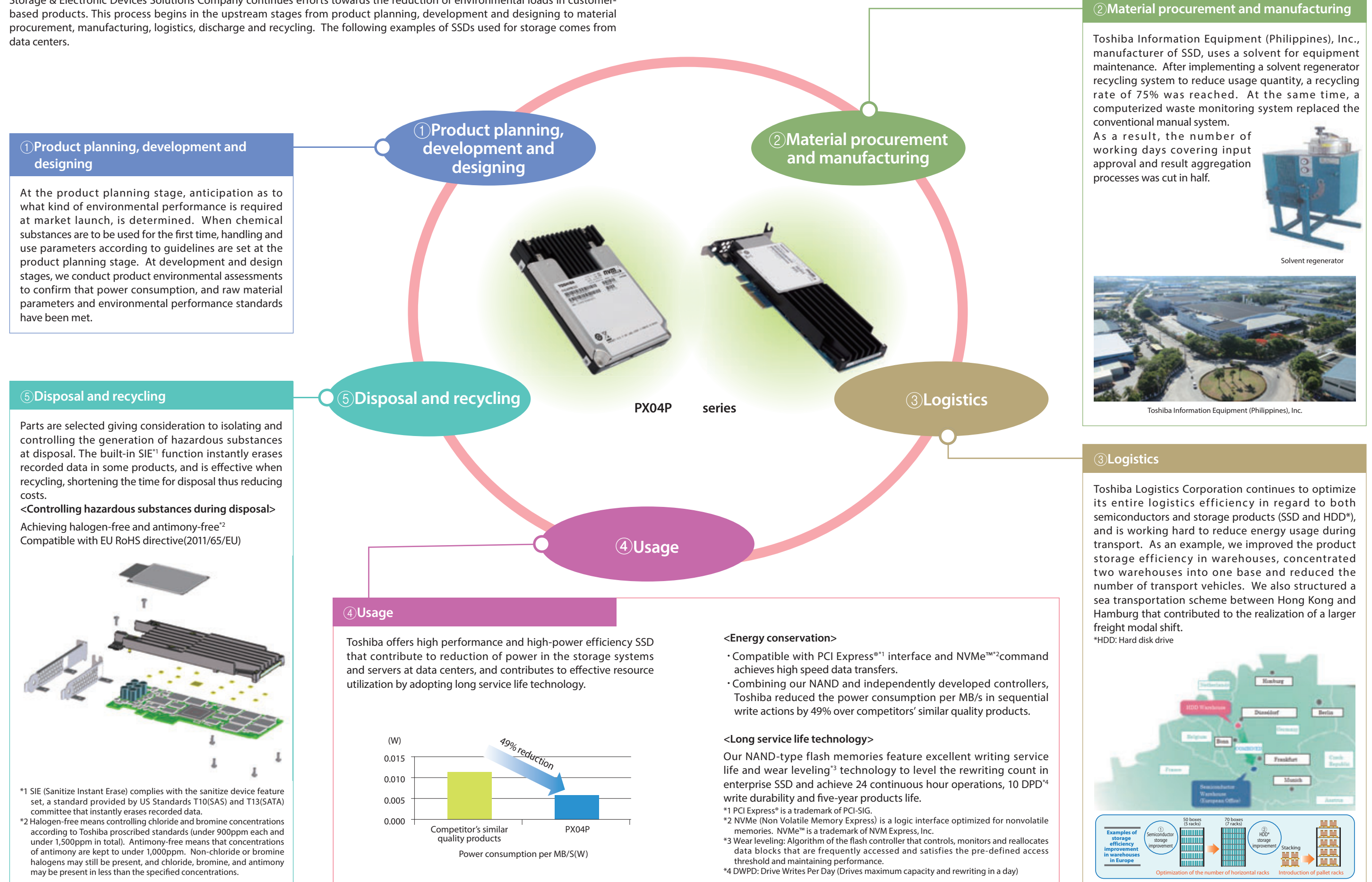
Overall energy saving can be achieved by promoting energy savings during the manufacturing stage through development of micro-fabrication technologies enabling us to fabricate many chips from one wafer.

Meanwhile, the chart assumes that metal-oxide semiconductor field-effect transistors (MOSFETs) will be used in power-supply adapters of personal computers. Since the majority of CO₂ emissions caused by such products occur during use, it is more effective to enhance the efficiency of product performance than to implement measures for reducing CO₂ emissions during the products' raw material or production stages.



Reduction of environmental impact by SSD (solid state drives)

Storage & Electronic Devices Solutions Company continues efforts towards the reduction of environmental loads in customer-based products. This process begins in the upstream stages from product planning, development and designing to material procurement, manufacturing, logistics, discharge and recycling. The following examples of SSDs used for storage comes from data centers.



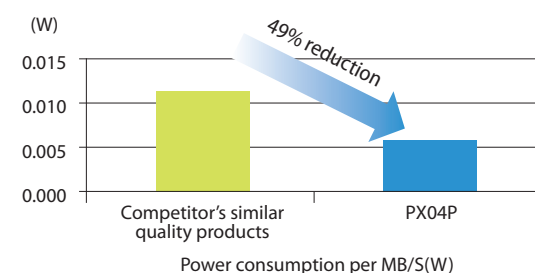
PX04P series

Solvent regenerator

Toshiba Information Equipment (Philippines), Inc.

④ Usage

Toshiba offers high performance and high-power efficiency SSD that contribute to reduction of power in the storage systems and servers at data centers, and contributes to effective resource utilization by adopting long service life technology.



<Energy conservation>

- Compatible with PCI Express^{*1} interface and NVMe^{™*2} command achieves high speed data transfers.
- Combining our NAND and independently developed controllers, Toshiba reduced the power consumption per MB/s in sequential write actions by 49% over competitors' similar quality products.

<Long service life technology>

Our NAND-type flash memories feature excellent writing service life and wear leveling^{*3} technology to level the rewriting count in enterprise SSD and achieve 24 continuous hour operations, 10 DPD^{*4} write durability and five-year products life.

*1 PCI Express[®] is a trademark of PCI-SIG.

*2 NVMe (Non Volatile Memory Express) is a logic interface optimized for nonvolatile memories. NVMe[™] is a trademark of NVM Express, Inc.

*3 Wear leveling: Algorithm of the flash controller that controls, monitors and reallocates data blocks that are frequently accessed and satisfies the pre-defined access threshold and maintaining performance.

*4 DPD: Drive Writes Per Day (Drives maximum capacity and rewriting in a day)

*1 SIE (Sanitize Instant Erase) complies with the sanitize device feature set, a standard provided by US Standards T10(SAS) and T13(SATA) committee that instantly erases recorded data.

*2 Halogen-free means controlling chloride and bromine concentrations according to Toshiba proscribed standards (under 900ppm each and under 1,500ppm in total). Antimony-free means that concentrations of antimony are kept to under 1,000ppm. Non-chloride or bromine halogens may still be present, and chloride, bromine, and antimony may be present in less than the specified concentrations.

Business Activities to Promote the Reduction of Environmental Impact

Toshiba aims at reducing the environmental load through state-of-the-art high efficiency manufacturing.

As societal concerns over global warming and calls for countermeasures rise, the Storage & Electronic Devices Solutions Company Group began inter-departmental projects over a decade ago, and continues to make efforts to reduce CO₂ and other greenhouse gases. As the information-oriented society advances, Toshiba plans to expand its production capacities, and make further efforts toward energy and resource conservation through efficient equipment operation, introducing energy conserving machines and devices, AI (artificial intelligence), deep learning and IoT (internet of things).

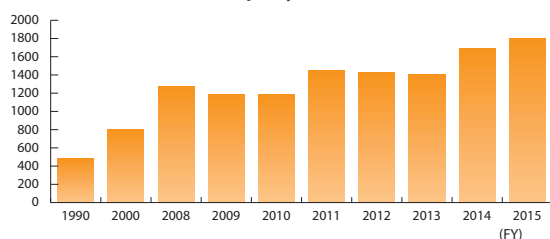
In this chapter, we introduce efforts in progress designed to reduce environmental load and biodiversity preservation at our manufacturing sites.

We promote reduction of CO₂ emission by systematic, interdepartmental energy conservation activities

When we manufacture semiconductor and storage products, we use large amounts of energy for air-conditioning in clean rooms, etc. Therefore, Storage & Electronic Devices Solutions Company Group started an interdepartmental project in FY2004 to reduce emissions of greenhouse gases. In addition to the conventional individual power conservation measures at the power management and facility level, we requested production engineers and tool manufacturers to participate in this project to develop a broad range of activities. Knowledge gained is interdepartmentally shared and promoted through proactive energy saving measures at each site.

The CO₂ emission quantity last fiscal year was around 1.8 million tons. Emission is expected to increase as we boost production capabilities and start up new lines, but we will continue to reduce it through investment and various power conservation measures.

Amount of CO₂ emissions per year (1000 tons)



Electrical CO₂ emissions coefficient are used to calculate energy-originated CO₂ emissions (in Japan, 5.54 t-CO₂/10,000 kWh in FY2014). Overseas electricity is based on the GHG Protocol.

(Data covers all worldwide manufacturing sites and certain non-manufacturing sites)

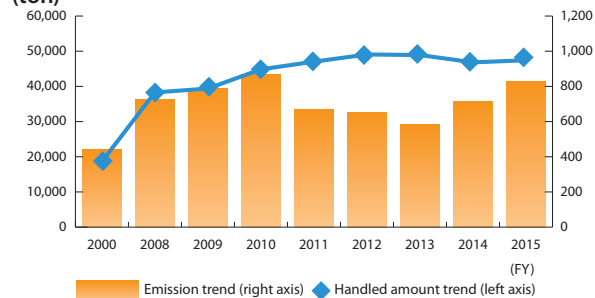
Measures to reduce discharge of chemical substances

Various chemical substances are used in the manufacturing processes of semiconductor and storage products. After using these chemical substances, our company minimizes discharges to water systems and emissions to the atmosphere by collecting chemical substances and treating or removing hazardous elements by installing coagulation-sedimentation facilities and abatement systems.

Measures have been taken to reduce amounts of chemical substances in use as well as amounts of discharge and emissions during the manufacturing processes. Toshiba Corporation targeted 41 chemical substances (including 19 PRTR* substances) for discharge management in FY2015. In future, we expect an increase in the amount of discharges and emissions as production capacity increases, however our efforts to reduce emissions will continue.

*PRTR: Japan's Pollutant Release and Transfer Register Act.

Amount of chemical substances handled and discharged (ton)



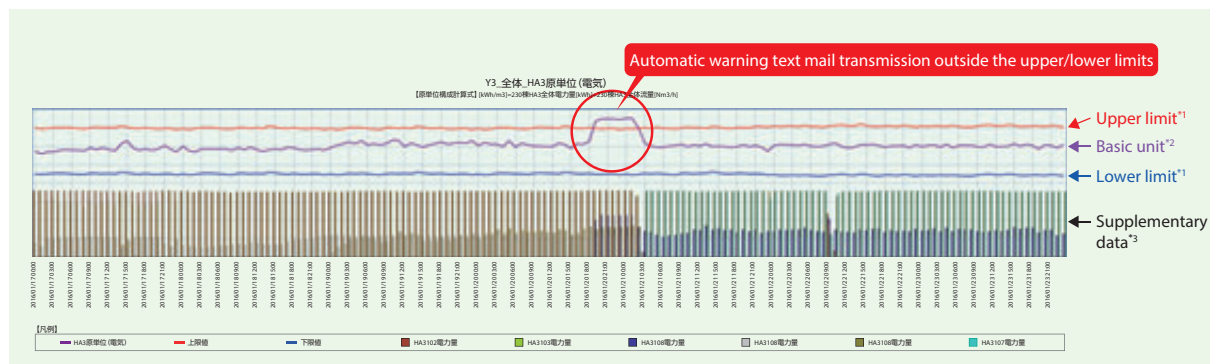
(Data covers all manufacturing sites in and out of Japan)

Column 1

Yokkaichi Operations

In our Yokkaichi Operations, which manufactures memory products, power consumption has increased as production enlarges. Controlling power consumption in the basic unit (*), we can judge the optimal operation patterns of power facilities in accordance with changes in production and achieve efficient operations. We also developed a system that automatically alerts basic unit deterioration, and by combining basic unit power energy, utilizing statistical tools, we can identify the causes of efficiency deterioration and apply early corrections. Higher efficiency in manufacturing is achieved through these efforts.

*As an example, high-pressurized air index showing electric energy per 1m³



*1: The upper/lower limits are set within a monthly movement average of $\pm 3\sigma$.

*2: (Example) power volume per 1m³ of high-pressurized air

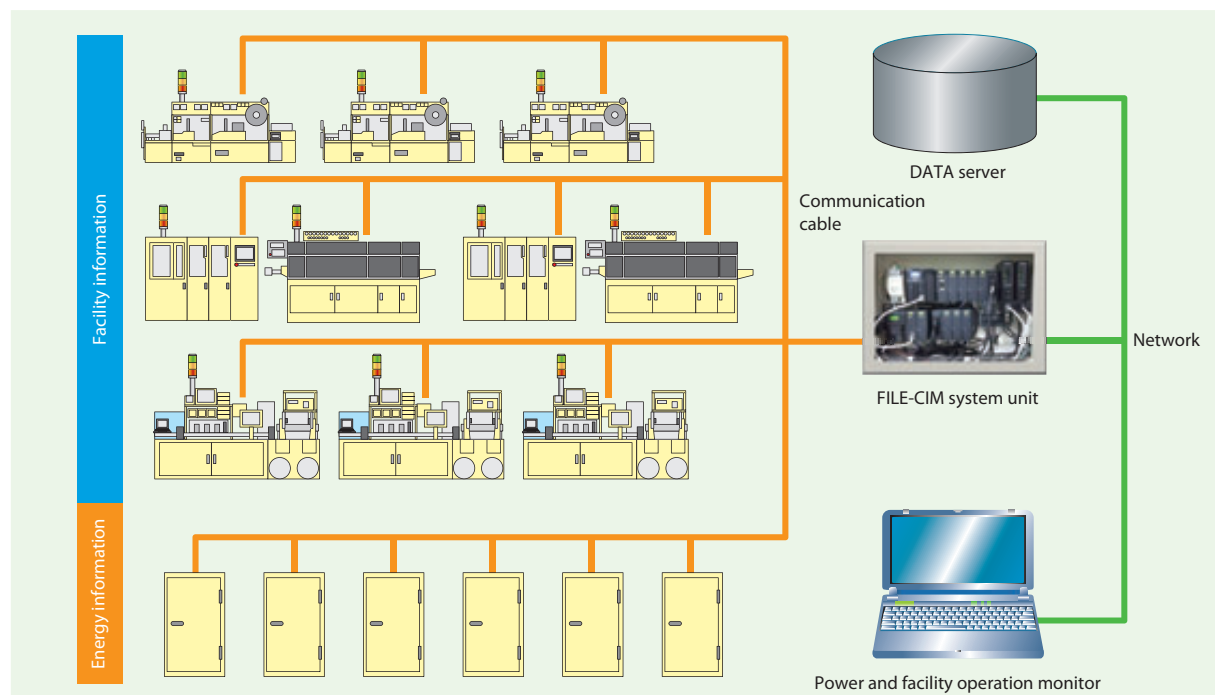
*3: (Example) power volume per serial number, entire flow rate

Column 2

Himeji Operations-Semiconductor

At Himeji Operations-Semiconductor, where power devices and other discrete semiconductors are manufactured, energy conservation is promoted by visualizing electric power enabling efficient manufacturing. By structuring a power monitor system, FILE-CIM (*1), in the plant energy conservation has been promoted. The system correlates facility operation information and power volumes, visualizing the facility operation hours, manufacturing volume and other basic unit energies and discovers and eliminates wasted power function. This system is compatible with FA devices and general purpose software, making it easier to structure the system and cutting costs.

FILE-CIM(*1) Power monitor system outline



*1: FILE=Free(free to collect data), Index(faster search), Low cost(low cost), Easy(easy system expansion)
CIM=Computer Integrated Manufacturing(Manufacturing control system)

Proactive efforts to reduce PFC emissions and other greenhouse gases.

Semiconductor manufacturing processes use perfluorocarbon (PFCs), hydrofluorocarbon (HFCs), sulfur hexafluoride (SF₆) and nitrogen trifluoride (NF₃). These are called alternative Freon 4 gases, and although they do not harm the ozone layer, they produce and have greenhouse effects, and require countermeasures. At COP21, held in Paris at the end of 2015, recognition of and talks to reduce these greenhouse gases were a significant issue in global warming prevention discussions.

The World Semiconductor Council (WSC) (note 1) identified PFC and other greenhouse gases for reduction, and reached agreement to reduce these by 10% of current levels versus levels set in 1995 by Japan, US and Europe, by 2010. Emission volumes of wafer-area-basic-unit 0.22kgCO₂e/cm² were set as WSC expected voluntary values by 2020 as countermeasures along with global industrial collaboration.

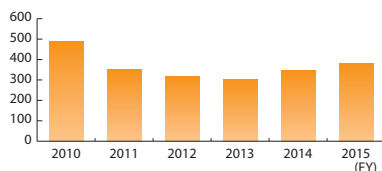
(CO₂e: CO₂ equivalent)

Toshiba achieved these industrial targets through measures that reduced usage volumes of gases and by installation of hazard removal devices in concert with improved manufacturing processes. As production increased in FY2015, hazard removal devices were introduced and resulted in emission reduction by over 90%. Voluntary reductions greatly exceeded expected WSC reduction amounts. Anticipation of increased gas usage at manufacturing sites and process changes associated with increased production, mean that Toshiba will continue efforts to integrate hazard removal devices into new manufacturing facilities to reduce emissions.

After reviewing substance emission calculation methods and global warming potential (GWP) (note 2), plans to control our environmental management system and results projections have been made in consideration of laws and other external conditions from FY2015.

The quantity of PFC emissions and other global warming gases in FY2015 were around 380,000 tons-CO₂.

Transition of amount of PFC emissions (1000ton-CO₂)



(Data covers all manufacturing sites in and out of Japan)

(Note 1) World Semiconductor Council (WSC): Semiconductor council where world semiconductor industrial associations participate

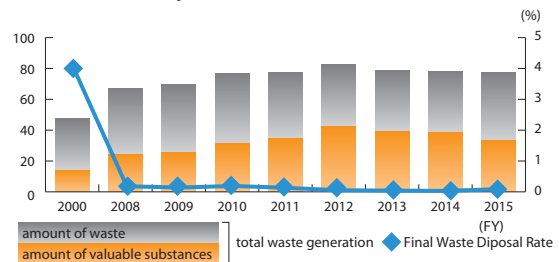
(Note 2) The subject substances: based on Global Warming Countermeasures Act, Emission quantity calculation methods: based on 2006 IPCC guidelines, Global Warming Potential (GWP) coefficient: Based on IPCC 4th evaluation report

We focus on effective use of valuable resources.

The Storage & Electronic Devices Solutions Company Group takes a company-wide approach to achieve the reduction in waste generated and make a contribution to resource recycling in order to move toward a recycling-oriented society.

Proactive 3R (Reduce, Reuse, Recycle) activities are performed at local sites in an attempt to effectively use resources. For example, used chemicals and metals are thoroughly sorted and recycled using higher level resource recycling technologies in plants. Through such efforts, the Storage & Electronic Devices Solutions Company Group achieved an excellent level of final waste disposal rate of 0.09% in FY2015

Total amount of waste generated, and final waste disposal rate (1000 tons, %)



The amount of waste as an index on the reduction target, which is the amount remaining after valuable materials are subtracted from the total amount of waste generated.

(Data covers all worldwide manufacturing sites and certain non-manufacturing sites)

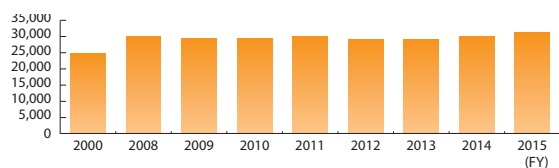
Efficient use of finite water resources is also targeted.

From a global perspective, there are many regions that have limited access to water resources, and problems resulting from accelerated population growth and the scarcity of water resources are becoming increasingly significant.

The Storage & Electronic Devices Solutions Company Group recognizes scarcity of water resources as a social issue and is working on reduction of water intake amount and the prevention of water contamination.

Total amount of water intake in FY2015 was 31.2 million m³ in volume, and 26.5% in recycling rate*.

Amount of water intake (1000m³)



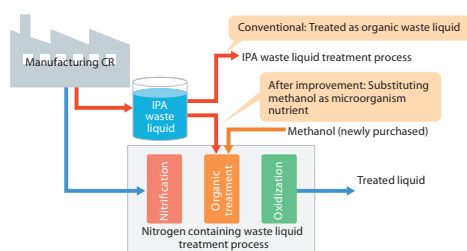
(Data covers all worldwide manufacturing sites and certain non-manufacturing sites)

*: Water recycling rate: (required feed water - water supplied) / (required feed water) X 100 (%), (as defined by JEITA (Japan Electronics and Information Technology Industries Association))

Column 3

Effective resource usage efforts at Yokkaichi Operations

Yokkaichi Operations manufactures memories that use methanol as a nutrient for microorganisms generated in the nitrogen containing waste liquid treatment process in the semiconductor manufacturing processes. Recovery and treatment of IPA (isopropyl alcohol) waste liquid, as a biological nutrient used in the manufacturing processes, was achieved thus resulting in the reduction of purchase of methanol. A reduction of 352 tons/ year was achieved. Technological development based on Toshiba's 3Rs will head further efforts to reduce environmental load.



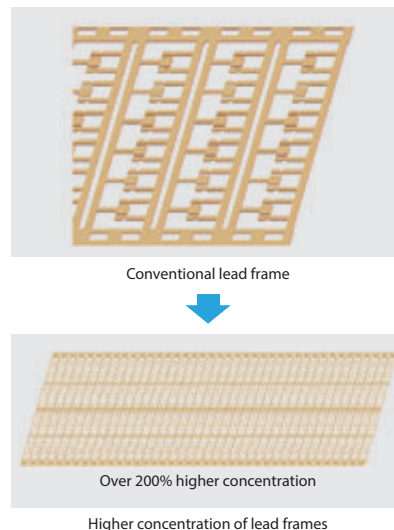
TST manufactures small signal devices, optical devices and has an issue regarding the control of metal waste. Utilizing Toshiba's 3Rs along with supervision from Himeji Operations-Semiconductor, we have proactively achieved the reduction of waste generation of lead frames and mold resins.

- Lead frames changed to a high concentration type, reducing waste generation by 25.3 tons/year (material usage efficiency: 242% (vs. conventional use))
- Miniaturizing mold resin shapes reduced waste generation by 1.6 tons/year (material usage efficiency: 466% (vs. conventional use))

Promoting the recycling of electronic parts, for example, spray cans and batteries, achievement of "zero waste to landfill" according to the Thai government standard (DIW), resulted in the "commendation of zero waste to landfill achievement" award 2015 by DIW.

DIW: Department of Industrial Works

Above "zero waste to landfill" excludes some materials which are extremely difficult for recycling like lamps, batteries (Ni-Cd and Alkaline,) insulation.



Efforts for the preservation of the natural environment and biodiversity developed at manufacturing sites both in Japan and overseas

The Storage & Electronic Devices Solutions Company Group conducts activities for the preservation of natural environments at worksites both in Japan and overseas. These activities include tree planting in cooperation with local government administrations and other groups in the community, as well as unique efforts overseas to preserve

nature.

The Toshiba Group adopted its guidelines for biodiversity in September 2009. The Storage & Electronic Devices Solutions Company Group also promotes the preservation of biodiversity in accordance with these guidelines.

< Toshiba Group Biodiversity Guidelines URL >

<http://www.toshiba.co.jp/env/en/vision/biodiversity.htm#anchorLink5>

Toshiba Group Biodiversity Guidelines

—Basic policy—

In order to conserve biodiversity and promote the sustainable use of biological resources that constitute biodiversity, Toshiba Group will implement the following measures:

- Analysis of the impact of our business activities on biodiversity
- Reduction of the impact on biodiversity and promotion of the sustainable use of resources through our business operations
- Development of an organizational framework to promote these measures

—Specific actions—

1. We will take appropriate measures to protect ecosystems when building factories or relocating facilities.
2. We will collaborate with local public agencies and private organizations.
3. We will continue our commitment to corporate citizenship activities as members of a sustainable society.
4. We will assess the impact and effects of environmental measures on various aspects of the environment, including biodiversity.
5. We will promote initiatives for the conservation of biodiversity in supply chains, including the mining of resources.
6. We will assess the impact of substance emissions and the consumption of resources required for our business activities.
7. We will study the structures and systems of nature and make technological contributions to society in accordance with the characteristics of our businesses.

Examples of Biodiversity Preservation Activities

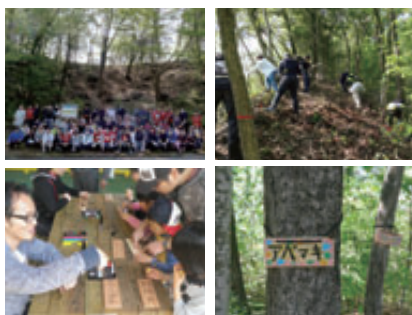
Case.1: Oita Operations, Japan Semiconductor Corporation



Oita Operations waste water treatment produces clean water and discharges it into the Kitahana River, and is a participant in the “let’s bring back fireflies to the Kitahana River” activities since FY2010 with cooperation of local residents, administrators and specialists. The culture of thiaridal snails, which fireflies feed on, have been encouraged in waste-treated water since FY2013, and have been released into the river. Since, over 120 fireflies have been observed in the firefly watching event of 2015.

In 2015, the Minister of Environment Award, “Model Effort Award for Environmental Measures” was awarded to Oita Operations for its system to support waste water treatment activities that led to support fireflies activities and to other environmental activities relating to water. Our efforts to bring back fireflies to the Kitahana River in a natural manner became connected to our plant with community cooperation.

Case.2: Kaga Toshiba Electronics Corporation



Kaga Toshiba Electronics held its 7th “Kaga Toshiba Forest” maintenance activities on April 23, 2016, where a total of 109 employees, resident suppliers and their families together worked up an enjoyable sweat.

These activities marking participation in “enterprises’ forest making” as promoted by the prefecture for the reforestation by prefectural residents. An area comprising 3.33 hectares in Tatsukuchi Hill Park was leased in 2013 for the biannual event (spring and autumn). Our agreement period with the prefectural administration expired in March 2015, but that plant intends to extend the agreement for five more years to continue its activities.

Participants were divided into 4 groups: ① thinning and removal of dead trees, ② construction of new pathways, ③ creation of tree nameplates and ④

woodworking trials (③, ④ for children), and everyone enjoyed the work under direction of the local citizens’ group “Nomi Satoyama Fan Club” and from the Ishikawa Prefectural Forestry Department. To enhance environmental awareness and community cooperation, we will continue these activities.

Case 3: Toshiba Information Equipment (Philippines), Inc. (TIP)



Inspired by biodiversity rehabilitation, TIP promotes two distinctive activities to address local ecosystem preservation. In May of 2015, TIP conducted a mangrove planting event in Brgy. Puktol San Juan, Batangas.

Joined by fifty TIP employees, five municipal staff members planted a total of 1,000 mangrove plants, and TIP staff monitored their growth over the next few months. These mangroves protect coastal areas from erosion and storm surges, and also serve as a habitat for small fishes and crabs that live near the sea. In another TIP initiative effort, employees contributed to the preservation of the Ifugao Rice Terraces, a UNESCO world heritage, known as the “Stairway to the Heaven.” Part of

the employees’ donated funds was spent on maintenance of damaged terraces and irrigation systems. A rehabilitation program was conducted in February 2016 (TIP’s 5th event.) Environment, Safety and Health (ESH) education programs were also given to local students and community members. We believe that these initiatives reflect Toshiba’s commitment to the environment and the communities it operates in.

Environmental Communication

We strive to have our activities recognized in society and raise employees' environmental awareness through environmental communication activities at our sites in Japan and overseas.

The Toshiba Storage & Electronic Devices Solutions Company has promoted a variety of environmental communications at its sites in Japan and overseas through activities like providing stakeholders outside the company including employees and their families with environmental information, and participating in various environmental exhibitions. The objectives of these activities are to raise employees' environmental awareness and to promote environmental practices in the course of their regular work, and finally to have outside stakeholders understand our activities.

Examples of environmental communication activities in Japan and overseas:

Storage & Electronic Devices Solutions Company continues active environmental communication with local residents at our business sites. This section introduces environmental communication efforts in line with regional concerns and needs in Japan and overseas.

Environmental Report Meeting between Japan Semiconductor, Iwate Operations and the community



Every year, Japan Semiconductor head office, along with its Iwate Operations employees, invites Kitakami citizens, prefectural and city staff to an environmental report meeting, to tour its environmental facilities and exchange opinions.

These meetings began in 2005, and this past year marked the 11th occasion. The major purpose of these meetings is to improve communication with the community to build on its relationship based on trust. Harmony with the environment that our business activities take place in are extremely important and we believe that our environmental preservation activities are known by and have broad public support.

Often attendees are surprised by our commitment to the environment and express their appreciation of our activities. To date, these meetings have been received most favorably.

We will continue to promote community outreach and activities and earn the trust and support of the general community

Social and environmental contribution activities at Yokkaichi Operations



Charity Eco Bazaar



Tree planting testimonial



Kumamoto earthquake victims donation

Yokkaichi Operations are responsible for social contribution activities and its environmental measures. Currently, activities as outlined above include employees and resident suppliers. One of the employees' favorite event is the "charity eco bazaar". Goods are donated to the bazaar that can be recycled and all proceeds are donated to the tree planting fund in Yokkaichi City. When these donations reached a preset target, we were awarded the "testimonial for persons of merit in tree planting in cities" award. As many employees at Yokkaichi Operations are from Oita Prefecture, we donated profits from the bazaar in June 2016 to victims of the Kumamoto earthquakes.

In future, we will continue to promote environmental activities that contribute to the world, and raise a sense of belonging by employees as well as increase environmental awareness.

Employees Voices

Naoto Masutani, in charge of environmental preservation, Facility Management Department, Yokkaichi Operations



Yokkaichi Operations bases have around 10,000 workers that satisfy ISO14001 standards. Social contribution activities through environmental awareness that all 10,000 workers can participate in.

In FY2015, we recycled used postage stamps and old down quilts, and in FY2016 we recycled disposable contact lens cases. Always looking to adopt new activities, currently we are engaged in seven projects.

During our used postage stamp recycling efforts, we ran into problems when acceptance of canceled postage stamps were terminated at the collection point, but when Toshiba-With Corporation offered to take over these activities, we were able to continue this campaign. Through development of social contribution activities related to the environment, employees volunteer proposals and ideas for other projects. I feel happy when I see the high awareness of CSR and the environment as well as gratitude to my fellow enthusiastic coworkers. [Recovery result in FY2015]

Used postage stamps: 5,389, recycled down quilts: 2, recycled down jackets: 14, * contact lens cases: 3,626, * As of July 2016

Eco calendar activities at Buzen Toshiba Electronics



Buzen Toshiba Electronics conducts environmental awareness activities not only for its 549 employees but for their families as well. Eco pamphlets covering current environmental issues important to all employees were circulated in FY2010. We encouraged that employees take these brochures home and discuss them with their families. In FY2015, we updated the pamphlet to include a calendar listing company holidays, so that it could be used all year. New environmental awareness activities and plans that employees and their families can participate in and help promote environmental preservation will continue.

3Rs and social contribution activities at Toshiba Semiconductor Thailand



Toshiba Semiconductor (Thailand) Co., Ltd. (TST) is eager to promote 3R activities, mainly through recycling waste materials. With the possibility of reusing the pull-tabs of aluminum cans and staples, TST began the promotion and recycling of these items. Recycling profits were donated to groups that promote and support use of artificial limbs. This fiscal year, TST installed donation boxes at six factory locations. These activities began in April 2016, and were supported by TST employees and contractors. Donations from local residents were also collected. The aggregated amount during the first collection phase amounted to 3.21 kgs of aluminum and 1.85 kgs of staples. Aluminum rings from drinking cans were recycled into prosthetic legs (1 kg of aluminum can be recycled to make 1 prosthetic of leg) and used staples were recycled into other related items. TST is extremely pleased to organize activities for the society and hopes that this activity will benefit more people with physical disabilities. In addition, the donation of aluminum and staples coincided with the 3Rs (Reduce, Reuse, Recycle) activities in line with TST's Environmental Policy.

Voices of employees

Prewan Limsiri
Toshiba Semiconductor (Thailand) Co., Ltd (TST) Accounting of Finance and Accounting Department

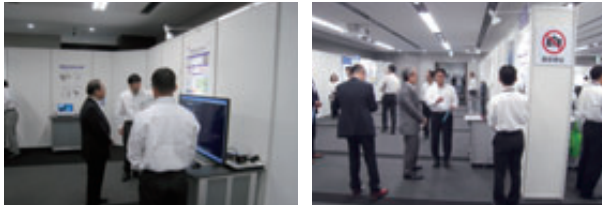


I joined TST in 1996 in the Finance and Accounting Department. It was common to receive huge numbers of documents from outside each month, many secured with staples. Our usual procedure was to remove staples and discard them. Because of the TST environmental project, we began to contribute large volume of staples that were to be used for prosthetic limbs. Now we have a campaign that collects not only staples but pull-tabs from aluminum cans that are donated for this purpose. The Association of Persons with Physical Disabilities International is the window for TST donations.

Various Communication Activities

Communication with Customers

Through participation in various seminars and in exhibitions such as Toshiba Group Environmental Exhibition and Eco-Products Exhibition, we promote active communication with customers.



Storage & Electronic Devices Solutions Company's corner at the Toshiba Group's Environmental Exhibition 2016

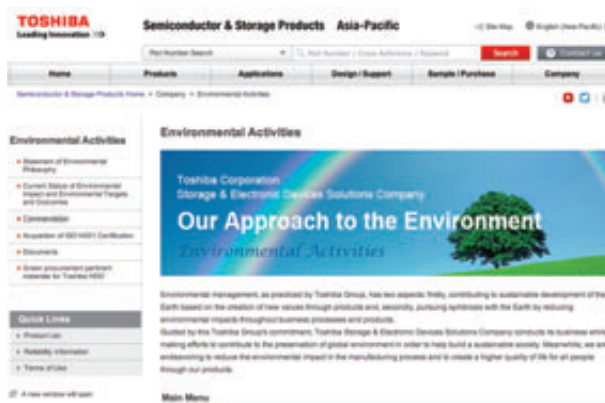
Environmental advertisement

The environmental activities of the Storage & Electronic Devices Solutions Company Group were made public through newspapers, websites and other media in FY2015 as well.

An advertisement with an image representing biodiversity efforts by Kaga Toshiba Electronics and Buzen Toshiba Electronics (Appeared on professional journals)



Environmental information on the website of the Storage & Electronic Devices Solutions Company



We post information on environmental management systems, performance data and various other environmental information on the website of the Storage & Electronic Devices Solutions Company.
<http://toshiba.semicon-storage.com/ap-en/company/environmental-activities.html>

Manufacturing sites' Environmental Report on website



We also post manufacturing sites' environmental reports that describe their environmental efforts and performance information on the website of the Storage & Electronic Devices Solutions Company.

Results of commendations for environmental activities awarded to the Storage & Electronic Devices Solutions Company Group

The following is a list of major awards Storage & Electronic Devices Solutions Company won in FY2015. We received high evaluations on our environmental activities in Japan and abroad, e.g., "Model Effort Award for Environmental Measures (Minister of the Environment Award) in FY2015 and 3Rs Awards in Thailand.

| Award Titles | Evaluated Points | Evaluated Entity |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Good Governance Project 2015 Best Practice Award | Local environmental preservation activities | Toshiba Semiconductor (Thailand) Co., Ltd. |
| 3Rs Awards | Construct waste management system addressing 3Rs | |
| Zero Waste to Landfill Award(3Rs Plus) Bronze Medal Prize | Construct waste (3Rs) management system and achieved Government's criteria of the "Zero Waste to Landfill Award." | |
| Award from Department of Energy (DOE) "DON EMILIO ABELLO ENERGY EFFICIENCY AWARDS" | Proactive efforts to promote energy efficiency and achieve conservation goal. | Toshiba Information Equipment (Philippines), Inc. |
| Model Effort Award for Environmental Measures Minister of the Environment Award | *Prior evaluation system which supports Oita Operations' waste water treatment. *Environmental communication relating to the Kitahana river. | Japan Semiconductor Corporation Oita Operations |
| FY2015 Kawasaki City Award for Environmental Contribution | Promoting energy saving measures address global warming | Toshiba Corporation Komukai Complex |
| Yokohama Environmental Action Awards Yokohama 3R Dream Promotion Award | Award for Business Sites with Outstanding 3R Activities | Toshiba Corporation Storage & Electronic Devices Solutions Company Ofuna Office |

Data and Third Party verification

Acquisition of ISO14001 certification

The Storage & Electronic Devices Solutions Company Group is proceeding progressively with the acquisition of integrated certification for all its global business processes, and has maintained the certification (at 13 company sites within Japan and seven sites outside Japan (note)) in fiscal year 2016. We will continue our contributions to society by the creation and offering of energy and resource conservation and products that are consistent with the

business policy based on the 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.

| Name of the organization (as of December, 2016) | Certified body | Registration date | Approval certificate No |
|------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------|-------------------------|
| Toshiba Corporation Storage & Electronic Devices Solutions Company Head Office District (Head Office Bldg. and Sales Office Sites) | JACO ^{(*)2} | 1996/2/2 | EC98J2014 |
| Toshiba Corporation Yokkaichi Operations (Including Toshiba Memory Advanced Package Corporation) | | | |
| Toshiba Corporation Himeji Operations-Semiconductor | | | |
| Toshiba Corporation Microelectronics Center | | | |
| Kaga Toshiba Electronics Co., Ltd. | | | |
| Himeji Toshiba E.P. Corporation | | | |
| Buzen Toshiba Electronics Corporation | | | |
| Japan Semiconductor Corporation Headquarteras & Iwate operations | | | |
| Japan Semiconductor Corporation Oita Operations | | | |
| NuFlare Technology, Inc. | | | |
| Toshiba Device Corporation | | | |
| Toshiba Discrete Semiconductor Technology Corporation | | | |
| Toshiba Microelectronics Corporation | | | |
| Toshiba Memory Systems Co., Ltd. | | | |
| Toshiba Semiconductor (Thailand) Co., Ltd. | | | |
| Toshiba Electronics Europe GmbH. | | | |
| Toshiba Electronics Asia, Ltd. | | | |
| Toshiba Electronics (China) Co., Ltd. | | | |
| Toshiba Electronics Asia (Singapore) Pte. Ltd. | | | |
| Toshiba Electronic Components Taiwan Corporation | | | |
| Toshiba Information Equipment (Philippines), Inc. | | | |
| Toshiba America Electronic Components, Inc. | DNV ^{(*)1} | 2010/6/29 | 80416-2010-AE-USA-ANAB |
| Toshiba Electronics Korea Corporation | KSA ^{(*)2} | 2007/3/14 | EMS-0472 |

Note: (*)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 JACO: Japan Audit and Certification Organization for Environment and Quality

Third party assessment of environmental performance data

The Toshiba Group consigns third party verification to the PricewaterhouseCoopers Sustainability LLC with the objective of enhancement of reliability of greenhouse gases emission performance data. We received verifications on global data for data collection, aggregation and internal audit processes in the results of FY2015.



Toshiba Corporation's "Toshiba Group's GHG Emissions"

Scope 1,2,3 (Category 1) emissions

| Category | Categories covered by calculations | FY2014 calculation results (10,000 t-CO ₂ e) | FY2015 calculation results (10,000 t-CO ₂ e) | Changes in emissions |
|----------|-----------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|----------------------|
| Toshiba | Direct GHG emissions (Scope 1) | 15 | 88 | 10% |
| | Indirect emissions associated with energy-derived emissions (Scope 2) | 227 | 219 | -4% |
| Overseas | Use of sold products (Scope 3 Category 1) | 9,758 | 9,809 | -2% |

Scope 1,2 emissions by region

| Categories covered by calculations | Region | FY2014 calculation results (10,000 t-CO ₂ e) | FY2015 calculation results (10,000 t-CO ₂ e) |
|-----------------------------------------------------------------------|----------|---------------------------------------------------------|---------------------------------------------------------|
| Direct GHG emissions (Scope 1) | Japan | 54 | 71 |
| | Overseas | 22 | 18 |
| Indirect emissions associated with energy-derived emissions (Scope 2) | Japan | 181 | 176 |
| | Overseas | 68 | 43 |

[Notes] Basis of calculation for CO₂ emissions to third-party assurance

- CO₂ emissions from fuel (Used CO₂ emissions factors provided in the Guideline for Calculation of Greenhouse Gas Emissions/Version 4.1) published by the Japanese Ministry of the Environment.
- CO₂ emissions factor for purchased electricity: 1.510 t-CO₂/10,000 kWh (FY2015) is used for the power factor in Japan. GHG Protocol data is used overseas.
- Emissions amount of greenhouse gases other than CO₂: Global warming potentials are based on the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).
- Use of sold products: Calculated by multiplying the amount of annual energy consumption of use by the CO₂ emission coefficient, the assumed tenure of use and summed up by the quantities of sales.

< Limited Assurance Conclusion >

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Selected Information in this report for the year ended March 31, 2016 is not prepared, in all material respects, in accordance with the Reporting Criteria.

Third-party opinion

One Akiyama

President, Integrex Inc.

1. Evaluation points

Toshiba considers the environment to be one of its top priority issues and reviews its environmental policy to conform to changing conditions and issues in its business environment every year. This year, Toshiba revised and clarified its integration of its environmental management system and business processes as well as enhancements of its environmental performance.

As in past year, Toshiba executed activities along two lines, reduction of environmental load in products, and the reduction of environmental load in business activities.

The special feature introduces not only the social safety and convenience of Toshiba products but also their contribution to energy and resource conservation. It describes how devices, many of which operate out of sight, contribute to the reduction of environmental load. Toshiba reports on the achievement of various emission reduction quantity plans through tables, results and self-evaluations every year. Tables are added to pages describing activities along with content that describe achievements thus clarifying results further.

I highly value their continued efforts and careful consideration toward the environment at its worksites and in their products as a continuation of last year. Their principle for the reduction of environmental load throughout the lifecycle of a product, from planning, designing, development, manufacturing, logistics, usage, disposal and recycling represented by SSD used for storage at data centers, etc. can be taken as an example of their commitment. I also highly commend their energy conservation commitment that utilizes AI and IoT at its manufacturing sites described in the message from the company president, and to their energy conservation promotion by greater efficiency in manufacturing. In addition to the activities stated in the two lines mentioned above, Toshiba has maintained a high degree of environmental communication both in and out its corporate structure for many years. Toshiba's commitment to environmental activities both by employees not only in Japan but worldwide, elevate employees' environmental awareness and activities raise employee cooperation as is made clear in the Philippines with its material procurement and manufacturing of SSD practice. Together I believe these activities have a favorable effect toward the reduction of environmental load in business activities.

2. Expectations

Toshiba should create lists of the focal points, activities that produced results and future issues from the preceding year regarding efforts to reduce product environmental load and business activities along with environmental communication, and describe them before the detailed activity reports. I think it would be easier for the reader to understand key points from activities and share that information regarding annual activity results, evaluations and issues within the company, that lead to other continuous activities where PDCA is cycled.

As the world gears for a carbon-free society based on trends from Paris Agreement, enacted in November 2016, reduction of the total quantity of greenhouse gas emissions will be required even during period of production increases and market expansions. Although this is an extremely difficult issue, I expect Toshiba to fully utilize AI, IoT and other new technologies mentioned in the company president's message, and bring new innovations and new concepts in addition to current conventional efforts to reduce environmental load.

<Profile>

One Akiyama

President, Integrex Inc.

Graduated from the Faculty of Economics at Keio University. After working as a fixed income trader in foreign bonds at a U.S. securities firm, she founded the company Integrex Inc., in 2001 for the promotion of socially responsible investment (SRI) and corporate social responsibility (CSR) and became its president. She is also a co-representative of the Japan Sustainable Investment Forum (JSIF), an NPO. She holds an MS in finance.

Integrex Inc.

Integrex is an independent research company specializing in research and evaluation for integrity-based socially responsible investments (SRI) with no capital relationship with any financial institutions or business corporation. It also provides a variety of support for companies trying to fulfill corporate social responsibility (CSR), including internal reporting hotline services for companies and other organizations and CSR/compliance awareness surveys on employees, group companies, and client companies in Japan and overseas, from the neutral and third-party standpoint.

Upon receiving the third-party opinion

We received a third party opinion from Ms. Akiyama, president of Integrex again this year. In particular, the evaluation regarding our contribution to society with our product lineup (see special feature pages) and introduction of efforts aimed at reducing environmental load in the product lifecycle using SSD. We hope to continue to make product introductions easier for the general public to understand. Our energy conservation activities at manufacturing plants that led to higher efficiency in manufacturing were also noted as well as our global environmental communication activities. These activities will be developed on a more proactive stance in the future.

We will continue to review using easy to understand expressions with our list of activities aimed at reducing environmental load and increasing environmental communication. We will also continue our best efforts to meet the challenges presented by demands of higher efficiency in manufacturing utilizing AI and IoT to achieve new and innovative concept for the future.

Editor's postscript

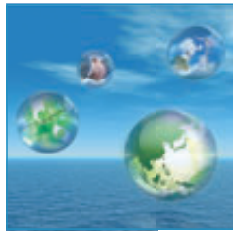
Thank you for reading the Environmental Report 2016.

In the "Introduction" chapter of this report, we included an article reporting in an easy-to-understand way how our storage and semiconductor devices contribute to the reduction of environmental load in social infrastructure and the realization of IoT. We hope that our products, often out of sight, contribute to a brighter and more efficient society. For a third-party opinion, we asked Ms. Akiyama, President of Integrex Inc., an external CSR expert to give us her valuable opinion that we could use in future improvements.

We will transmit information of our environmental activities through environmental reports and other means to our stakeholders. If you have any questions about our activities or the content of this report, kindly contact us through the following URL.

<http://toshiba.semicon-storage.com/ap-en/company/environmental-activities.html>

Productivity Improvement Planning Div. Environment Planning Promotion Group, Toshiba Storage & Electronic Devices Solutions Company



TOSHIBA CORPORATION
STORAGE & ELECTRONIC DEVICES SOLUTIONS COMPANY
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- If you have any inquiries, please contact us at the following website.
<https://www.semicon.toshiba.co.jp/eng/index.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 Storage & Electronic Devices Solutions Company Group reserves the right to revise the content of this Environmental Report without notice.
- The information contained herein is subject to change without notice.

TOSHIBA CORPORATION

Storage & Electronic Devices Solutions Company

Website: <https://toshiba.semicon-storage.com/>