TOSHIBA

Leading Innovation

2013 Environmental Report

TOSHIBA eco style

Toshiba Group Business Overview

Company Overview (as of March 31, 2013)

Company name	Toshiba Corporation
Headquarters address	1-1, Shibaura 1-chome, Minato-ku, Tokyo
Founded	July 1875
Paid-in capital	439.9 billion yen
Consolidated net sales	5,800.3 billion yen
Number of employees (consolidated)	206,087

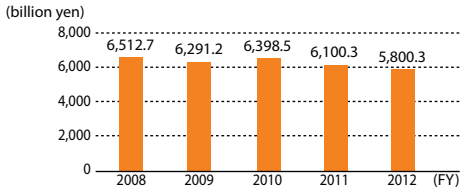
CSR-related international charters/guidelines Toshiba endorses

- United Nations Global Compact
- Global Reporting Initiative (GRI)
- Electronic Industry Code of Conduct (EICC)

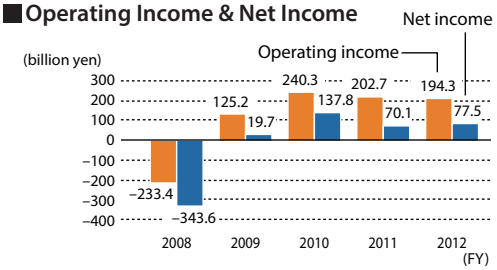
Number of shareholders	446,001
Number of shares issued	4,237,600,000 shares
Number of consolidated subsidiaries	590 (183 in Japan, 407 overseas)
Number of affiliates accounted for by the equity method	200
Stock exchange listings	Tokyo, Nagoya, London

Financial Results (Consolidated)

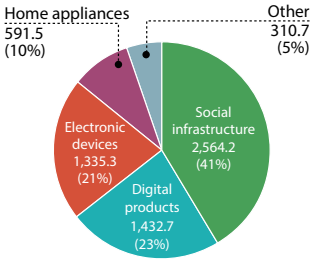
Net Sales



Operating Income & Net Income

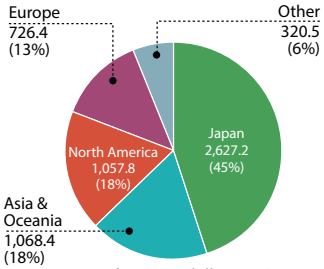


Sales by Business Segment (FY2012)



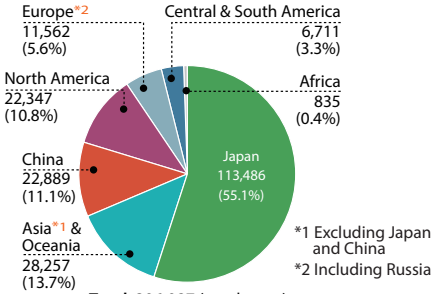
Total: 5,800.3 (billion yen)

Sales by Region (FY2012)



Total: 5,800.3 (billion yen)

Number of Employees by Region (FY2012)



Total: 206,087 (employees)

Main Products and Services

Ultrabook™


MFP


Electronic book reader


LCD TV

SCiB™ rechargeable battery


Photovoltaic power generation system

Elevator for the TOKYO SKYTREE®


Thermal power generation turbine


Blu-ray disk recorder


REGZA tablet

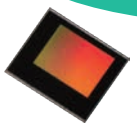

High-speed, high-resolution CT scanner

Digital products | Social infrastructure

Electronic devices | Home appliances


NAND flash drive


Storage devices (HDDs and SSDs)


CMOS image sensor


High-efficiency magnetron

FlashAir SD card


Refrigerator/freezer


Heat source system with air-cooled heating pumps


Washing machine with dryer


Home storage battery


LED light


HEMS

Please refer to the Toshiba Annual Report 2013 for detailed business and financial information. This information is also available at the following website: http://www.toshiba.co.jp/about/ir/index.htm

Editing Policy

Toshiba Group has published the Environmental Report since FY1998 (From 2004 to 2007, environmental information was provided in the CSR Report). This report is published to provide detailed environmental information on Toshiba Group to all stakeholders of the Group. The content of this year's edition was expanded to include information on the progress of the Fifth Environmental Action Plan, as well as on new initiatives to mitigate climate change and use resources effectively at production sites and at the product level, conserve biodiversity and promote environmental communication, and step up environmental management. At the same time, to contribute to reduction in environmental impacts, the report will be published only on Toshiba's website with its print version not issued. Additional information will also be provided there as it becomes available.

■ Providing detailed environmental information
http://www.toshiba.co.jp/env/en/index.htm
Environmental Report 2013 and website for environment

We provide more detailed information on our environmental website.

Toshiba "eco style" website
http://ecostyle.toshiba.com

■ Providing financial information
http://www.toshiba.co.jp/about/ir/index.htm
Annual Report 2013 and website for investor relations

■ Reporting on CSR activities (social and environmental) in general
http://www.toshiba.co.jp/csr/en/index.htm
CSR Report 2013 and website for CSR activities

Contents

●Organizations covered
In principle, this report covers Toshiba Group (Toshiba Corporation and its 590 consolidated subsidiaries in Japan and overseas). In cases where the report covers entities other than Toshiba Group, the individual entities are indicated.
* In this report, "Toshiba" refers to Toshiba Corporation.

●Reporting period
This report focuses on the results of activities in FY2012 (April 1, 2012 to March 31, 2013), but includes some activities continuing from the past and some more recent activities.

●Publication
The current issue was published in September 2013 (The publication of the next issue is scheduled for August 2014; the previous issue was published in September 2012).

●Significant change during the reporting period
In August 2012, upon the U.S.-based IBM Corp.'s transfer of its business to Toshiba Tec Corp., Toshiba Tec established Toshiba Global Commerce Solutions Holdings Corp., a holding company, and Toshiba Global Commerce Solutions, Inc., a U.S. business corporation, and Toshiba Global Commerce Solutions started operation.

●Reference guidelines
・Global Reporting Initiative (GRI)
Sustainability Reporting Guidelines, Third Edition (G3)
Note: The comparative table for GRI guidelines is posted on Toshiba's website.
・Ministry of the Environment of Japan
Environmental Reporting Guidelines 2012
Environmental Accounting Guidelines 2005

●Ensuring universal design in terms of color vision
We made efforts to ensure the text and charts herein are easy to read for as many readers as possible irrespective of differences in color vision. For details, please visit our environment website.

Disclaimer
This report includes descriptions of Toshiba's future plans and strategies, as well as prospects of its financial results. These descriptions and prospects are based on matters decided and opinions formed using information that is obtainable at this time.

CEO Commitment

Introduction

After I joined the company, I worked mainly in the production division and the procurement division, which purchases materials and components from companies outside Toshiba Group. I was stationed outside Japan—including the Philippines, the United Kingdom, and the United States—for a total of 14 years. In the Philippines, where I worked for four years (1996-2000), I led efforts to obtain ISO 14001 (international standards for environmental management) certification in order to accelerate environmental initiatives at the local production site. At that time, in emerging countries, a higher priority was still placed on the economy, and environmental issues were not taken as seriously as they are today. But out of necessity to take immediate action based on taking a hard look at what things would be like in the future, I expanded activities to involve the entire site through daily discussions with local employees, and this led to our obtaining ISO 14001 certification.

Immediately after I became director in charge of environmental affairs at Toshiba's head office in 2011, I started to develop a grand design aimed at becoming one of the world's foremost eco-companies by 2015. We established specific performance domains that should be achieved in 2015 as we pursue our vision for 2015 as one of the world's foremost eco-companies, and formulated four strategies[*1] to achieve this vision and the Fifth Environmental Action Plan[*2]—a specific plan to implement the strategies.

Today, as seen by the frequent occurrence of disasters due to abnormal weather around the world, problems are surfacing that appear to be attributed to the effects of climate change. Meanwhile, in emerging countries, the problems of waste generated as a result of economic development—as well as problems arising from air and water pollution—are becoming increasingly serious; we cannot afford to put off taking measures to cope with these environmental issues. I believe that the quickest way to solve these problems is for each and every one of Toshiba employees worldwide to share the same mind-set and work together with a sense of solidarity.

*1 Strategy to expand ECPs, high-efficiency manufacturing strategy, compliance and management strategy, and communication strategy
*2 Toshiba Group's environmental action plan that covers the four years from FY2012 to FY2015

Continuing to support recovery from the Great East Japan Earthquake

Toshiba Group has channeled extensive resources into supporting recovery from the devastating earthquake and tsunami that hit Tohoku on March 11, 2011. In particular, as one of the enterprises in the nuclear power industry, we have made strenuous efforts to ensure the stabilization of the Fukushima Daiichi Nuclear Power Station and advance its decommissioning in cooperation with the government and Tokyo Electric Power Company, Inc. For the treatment of contaminated water, we have contributed to the continuous and stable operation of SARRY™—a retained contaminated water disposal system. Also, we have completed the installation of MRRS™—a set of equipment to remove about 60 types of radioactive nuclides—and its trial operation is now underway. We have also developed robots to inspect and investigate the inside of reactor buildings where human works are quite difficult and started to use them in such places. We further developed Gammasight™—a gamma camera capable of making the effects of radioactive rays visible—and technology for disposing of contaminated water, soil and ashes from incinerators in a form applicable for practical use and proposed to utilize them for decontamination in Fukushima and other areas.

On the other hand, in order to help rebuild the devastated areas in eastern Japan, we are actively proposing to build smart communities that meet local needs. In addition to a smart-community project in Ishinomaki City, Miyagi Prefecture, we are supporting a rebuilding project in Iitate Village, Fukushima Prefecture—which is based on its New Madeina Village Plan—as well as projects to build a large set of photovoltaic power plants and smart communities in Minamisoma City, Fukushima Prefecture. We will contribute to the recovery of Japan by pushing for the creation of sustainable, energy-saving communities mainly through actively introducing renewable energy and energy management systems while respecting characteristics of the region.

Aiming to become one of the world's foremost eco-companies through the grand design's four strategies

Toshiba Group aims to become one of the world's foremost eco-companies as it upholds its unified global brand "eco-style" and strives to achieve a world in which people lead affluent lifestyles in harmony with the Earth.
Last year, we announced our Fifth Environmental Action Plan based on the four strategies developed to achieve this aim: 1) strategy to expand ECPs, 2) high-efficiency manufacturing strategy, 3) compliance and management strategy, and 4) communication strategy. In this Action Plan, we are further integrating business management and environmental management in all business areas, and have set specific goals to ensure continuous business growth and reduce environmental impacts.

Strategy to Expand ECPs

Toshiba Group is carrying out two Green initiatives: 1) Greening of Products, in which we aim to achieve the highest level of environmental performance for all products we develop and reduce environmental impacts throughout product life cycles, and 2) Greening by Technology, in which we aim to provide a stable power supply and mitigate climate change on a global scale through the low-carbon energy technologies.
In the Greening of Products initiative, we are accelerating the development of localized products to meet the specific needs of different countries and regions, including developed countries where various energy-saving initiatives have been implemented, and developing countries where environmental impacts are likely to increase as a result of economic development. Consequently, in FY2012, our sales of Excellent ECPs, which achieve the highest level of environmental performance, were 668.8 billion yen and use of these products resulted in 6.8 million tons of CO_2 emissions reductions. Both of these results exceeded the initial plan. In the future, we aim to achieve 1.8 trillion yen in Excellent ECP sales and 15 million tons in CO_2 emissions reductions from Excellent ECPs by FY2015, and will use recycled materials extensively and actively reduce the use of specified chemical substances.
In the area of Greening by Technology, we are enhancing our programs to develop renewable energy sources, including solar, hydro, geothermal, and wind power. At the same time, we are promoting the improved efficiency in thermal power generation technology and commercialization of carbon dioxide capture and storage (CCS) technology, as well as the development of new thermal power generation cycles designed to capture CO_2 more easily and safer nuclear power generation technologies. As a result, in FY2012, we achieved 1.32 trillion yen in sales of energy-related products and reduced 450 million tons of CO_2 emissions. Both of these results are close to the targets initially planned. In the future, we will actively establish next-generation power transmission and distribution technologies "smart grids" and build smart communities for advanced city planning. In FY2015, we plan to achieve energy-related product sales of 1.9 trillion yen and a mitigation in CO_2 emissions of 490 million tons, thereby contributing to achieving an optimal mix of energy sources and a sustainable, low-carbon society.

High-efficiency Manufacturing Strategy

Greening of Process refers to our initiatives aimed at minimizing inputs such as materials and energy in manufacturing processes globally, reducing the discharge of waste and chemical substances, and keeping environmental impacts to a minimum—even if production increases. In FY2012, by reducing power consumption for air conditioning and lighting, restricting the use of electricity, conducting global energy-saving diagnosis, making production adjustments, and taking other measures, Toshiba Group reduced its total greenhouse gas emissions to less than half of the FY1990 level (2.76 million tons). We will strive to both increase productivity and reduce environmental impacts in all three areas: mitigation of climate change, effective use of resources, and management of chemicals. Thus we aim to increase eco-efficiency to 1.5 times the FY2000 level and pursue the world's lowest level of environmental impacts by FY2015.

Compliance and Management Strategy

Toshiba Group is striving to bolster its environmental management by developing human resources responsible for environmental initiatives and improving its environmental management systems on an ongoing basis. Under its unique in-house Environmental Audit System covering company managers, product business divisions, and production sites, the Group reviews the progress in the Environmental Action Plan and ensures compliance with relevant laws and regulations. In order to raise the level of environmental initiatives, we also reconsider our environmental training programs according to the managerial levels targeted and the expertise required every year. Currently, as part of our new undertakings, we are developing environmental leaders at each site, and in FY2012, 230 personnel were registered as Toshiba eco-style leaders. In the years to come, we will step up environmental management globally with the aim of registering 2,000 personnel as such by FY2015.

Communication Strategy

Toshiba Group is working to strengthen its relationships of trust with its stakeholders through environmental communication, conservation of biodiversity and other initiatives and enhance its environmental image. In FY2012, we advanced efforts to protect rare animals, insects and plants by effectively utilizing the grounds of our production sites. In terms of environmental communication, we opened "Toshiba Baton"—a website that involves our employees worldwide. By FY2015, we plan to globally establish ecosystem networks with our production sites playing a central role. At the same time, some 200,000 employees working at Toshiba Group companies will take an active role in developing environmental activities rooted in their local communities, thereby building a global environmental communication network that connects people together.

In Conclusion

One of my favorite books is *Ichinichi Ichigen* (A Thought a Day), written by Masahiro Yasuoka, a scholar. The book preaches the principles of life, teaching readers virtues to which they should aspire. It is also very instructive to me when I think how corporate management should be. In the 138 years since its foundation, Toshiba Group has adopted a philosophy of serving the public with passion and commitment to innovation. Under this guiding principle, we will accelerate the integration of business management and environmental management so that through providing our products and services to a greater number of people, we can attain a world in which all people lead affluent lifestyles in harmony with the Earth. To that end, we will stay true to Toshiba Group's slogan, "Committed to People, Committed to the Future," and will strive to become one of the world's foremost eco-companies, and in doing so, earn the trust of society. It is my sincere desire that we may enjoy your ongoing support and cooperation.

Director
President and CEO
Toshiba Corporation

Toshiba's Initiatives for Reconstruction and Power Saving

Toshiba Group will contribute to rebuilding Japan and saving electricity across a wide range of areas, including the provision of diverse products and services, electricity and energy conservation efforts at production sites and the sharing of power-saving tips with customers.

Provision of products and services to help recover from the earthquake and conserve electricity

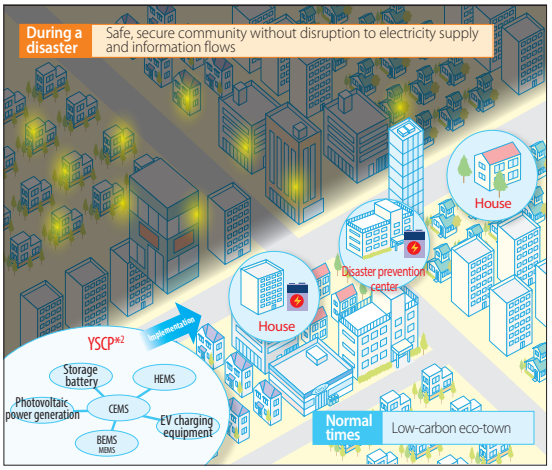
● **Support for earthquake recovery and reconstruction**

Since the March 11, 2011 earthquake, Toshiba Group has striven with all its resources to ensure the safety of the stricken Fukushima Daiichi Nuclear Power Station (for details, see page 29 of this report and page 37 of the CSR Report 2013) and supported disaster recovery and reconstruction by fully utilizing its wide range of business domains, from social infrastructure systems to household appliances and digital products.

Reconstruction project (Ishinomaki project)

In accordance with Ishinomaki City's "Eco Safety Town Concept," we are promoting the development of a smart community that aims to realize a safe, secure, and environmentally conscious town where residents can use electricity even when a disaster occurs, chiefly by developing a regional energy management system (EMS) and installing photovoltaic power generation systems and storage batteries*1. The concept behind this project is to create a low-carbon eco-town and develop a safe and secure community where power supply and information flows are not disrupted even when a disaster occurs. Toshiba Group is making the most of the know-how it acquired through the Yokohama Smart City Project (YSCP) (for details, see page 14) to develop a community where renewable energy is used in order to achieve greater energy efficiency during normal times and to ensure power supply and information flows are not disrupted even when a disaster occurs so that residents can live with a sense of security.

Developing disaster-resistant communities through smart solutions



*1: This was chosen by the Ministry of Economy, Trade and Industry (METI) as one of its FY2011 projects to promote the introduction of smart communities using the subsidies for such projects. METI invited applications from the public for the subsidies, and in April 2012, Toshiba Group, together with Ishinomaki City and Tohoku Electric Power Company, applied by submitting a project to construct a smart community within the city.
*2: Yokohama Smart City Project

Supporting reconstruction projects

Toshiba Group supported a project plan of Fukushima Reconstruction Solar Co. (which is engaged in power generation and regional exchanges to help reconstruct Fukushima Prefecture), invested in the firm, and cooperated with the firm in constructing a photovoltaic power station*1. In March 2013, Minamisoma Solar Agri-park was completed. This park supplies electricity generated at photovoltaic power stations to plant factories and sells surplus electricity to other parties. In order to support children's development, effective use is made of the photovoltaic power station and plant factories to offer "Green Academy" classes, which enable children to learn through hands-on experiences. In these classes, children (mainly elementary school students from the city of Minamisoma) experience charging of electric vehicles and the most advanced form of agriculture at a factory while learning how power is generated using natural energy.

In addition, Toshiba is supporting reconstruction projects based on the New Madeina Village Plan*2 of Iitate Village, Fukushima Prefecture. In addition to cooperating with project managers in developing a master plan to promote industry for job creation and to develop a foundation for the lives of local residents, we are also considering ways of actualizing the plan, such as by generating power using renewable energy, controlling energy use in the village, and developing such control into viable businesses.

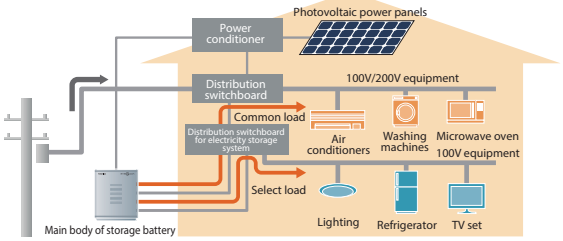
*1: This photovoltaic power station has been constructed by Fukushima Reconstruction Solar Co. using its own funds and subsidies from the Ministry of Agriculture, Forestry and Fisheries (for emergency projects to promote utilization of resources in rural communities, such as small-scale water power).
*2: "Madei," a word in the dialect spoken in the Fukushima region since ancient times, means "kind and thoughtful," "sparing no effort," and "wholehearted." "Madeina Village" refers to a village where the meaning of "madei" is realized.

● **Actions for electricity conservation**

Toshiba Group provides a wide variety of products and services that contribute to energy and electricity conservation. Among these are PCs and electric fans with power peak-shift functions, which switch over to built-in batteries for power when electricity demand peaks; home fuel cells which can be used for power generation at home and that continue to generate power even in the event of a power failure; storage battery system which are effective in conserving electricity during times of peak power demand; LED lamps; and cloud computing services, which make power consumption visible.

Home storage battery system "eneGoon"

eneGoon is a stationary home storage battery system that has a capacity of 6.6 kWh and a maximum power output of 3.0 kVA*1. It can be rapidly charged in about two hours. This storage system not only supplies electricity to electrical appliances in the home*2 but also responds to sudden power failures and helps reduce power consumption during peak hours by using electricity that was stored at night*3 during the daytime when demand is high. When combined with photovoltaic power generation or an HEMS, eneGoon contributes to daily power saving and reduction of CO_2 emissions.



*1: During normal use
*2: In the event of a power failure, electricity is supplied to selected loads.
*3: Requires a contract with an electric power company.

Circulation Heating Pump Unit "CAONS"

CAONS has been developed by applying the mechanism of heating pumps widely used for air conditioning purposes to effectively employ unused heat generated from the production process. It is the industry's first*1 air-cooled heating pump that enables users to take 90-degree hot water and achieves a high coefficient of performance (COP), 3.5*2. Due to its compact design, several CAONS units can be installed separately near processes that require them, thus minimizing heat loss during conveyance. This heating pump reduces energy consumption by more than 60% compared to the previous systems, contributing to substantial energy conservation and reductions in CO_2 emissions.

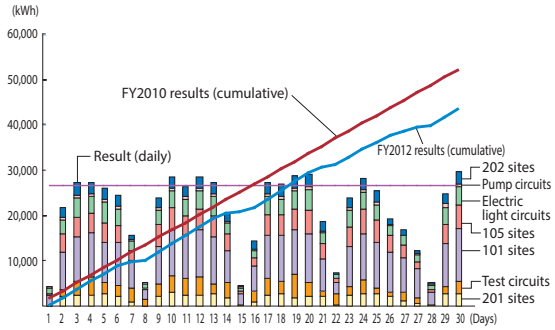
*1: Announced in January 2012
*2: This value was obtained under the following conditions: 60° on the hot water intake side, 65° on the outlet side, 25° on the dry-bulb thermometer, and 21° on the wet-bulb thermometer (on the assumption that the heating pump has been installed indoors).

Reducing electricity use at production sites

All business and production sites of Toshiba Group have been continuously striving to conserve electricity since the 2011 earthquake. Toshiba Group continued to remove some fluorescent lamps, set air conditioning temperatures higher, stop some elevators, and take other power-saving measures as it did immediately after the earthquake. At the same time, in addition to actively introducing energy-saving equipment, such as LED lighting and high-efficiency air conditioning systems, the Group reviewed cleanroom operating methods such as set temperatures, humidity, and differential pressure and installed high-efficiency power machinery and manufacturing equipment. In FY2012, by taking these and other measures, it reduced peak power consumption by 13.9% (annual average rate) compared to the FY2010 level and total power consumption by 9.1% compared to the FY2011 level. In the future, Toshiba Group will continue to conserve electricity and energy.

Saving power throughout an entire production site by making power consumption visible

Nishishiba Electric Co., Ltd. is accelerating power-saving efforts throughout its entire production site by making power consumption visible. The company measured power consumption for all plant equipment daily and adjusted operation by simulating electricity demand. As a result, in FY2012 it reduced summer peak power consumption by 30% and total summer power consumption by 279 MWh (12%) compared to the FY2010 level.



Change in power consumption

Introducing tips for power-saving

Toshiba posts articles on its website which suggests ways of cleverly using the power-saving functions of products primarily designed for home use, such as PCs, TV sets, air conditioning systems, refrigerators, and washing machines with dryers. Tips for power-saving are given for each product. In addition, the website provides detailed information on power saving for PCs and Blu-ray disk recorders. For example, power-saving measures for PCs include eco-mode, which enables users to optimally conserve electricity using Toshiba's proprietary eco-utility functions, and Toshiba peak-shift control. For Blu-ray disk recorders, available functions include energy-saving standby functions, which reduce power consumption during time periods other than those set for instant activation, and Auto Off functions, which automatically switch the recorder off when it is not in use.

● **Clever ways to conserve power**
URL:http://www.toshiba.co.jp/csqa/contact/support/info/setsuden.htm (in Japanese only)

● **Let's conserve power with dynabook PCs.**
http://dynabook.com/pc/setsuden/index_j.htm?utm_source=dynabook_top&utm_medium=eco&utm_campaign=setsuden#other (in Japanese only)

● **Clever ways to conserve power for PCs**
http://dynabook.com/assistpc/faq_search/setsuden.htm (in Japanese only)

● **Saving power cleverly! (Blu-ray disk recorders)**
http://www.toshiba.co.jp/regza/bd_dvd/dbr-howto/eco.html (in Japanese only)

Chapter 1

Vision and Strategies

Toward Environmental Vision 2050

Toshiba Group will contribute to society by creating new value through innovation to ensure that all people can lead affluent lifestyles in harmony with the Earth.

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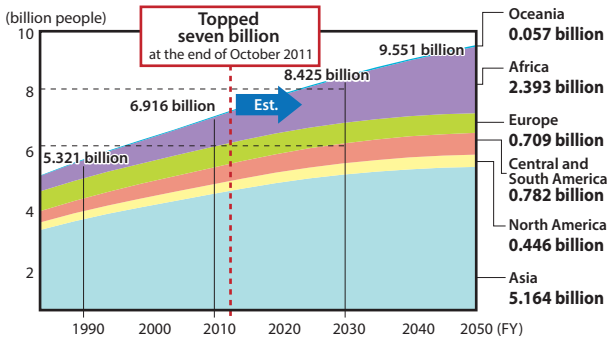
Summary of activities in FY2012

Environmental Vision 2050

The world population topped seven billion in October 2011, and rapid population growth and the urbanization of populations are expected to continue to occur mainly in the emerging countries of Africa, Asia and other regions. As a result, food, water, and energy shortages; decreases in the consumable resources such as fossil fuels, metals, and minerals that support today's society; climate change; and other problems are having global effects as a result of their complicated, intricate relations with one another. We must address these issues urgently.

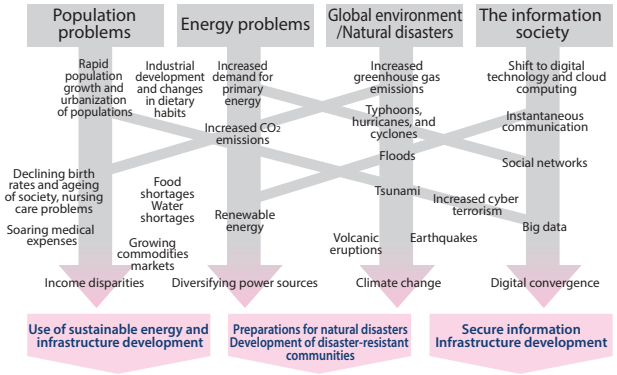
Toshiba Group has developed Environmental Vision 2050, a corporate vision that envisages affluent lifestyles in harmony with the Earth as an ideal situation of mankind in 2050, and will work to realize this vision.

■ Changes in the World Population (Estimates)



Source: U.N. World Population Prospects: the 2012 Revision

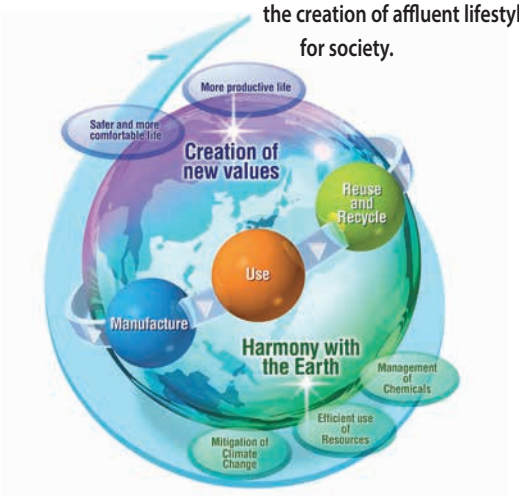
■ Mega-trends in Environmental Changes



Throughout the life cycle of products from manufacture and use to recycling and reuse, Toshiba Group will strive to provide safer and more comfortable lifestyles and create enriched value for customers. The Group will also strive for harmony with the Earth by working to mitigate climate change, using resources efficiently, and managing chemicals properly in order to reduce environmental impact.

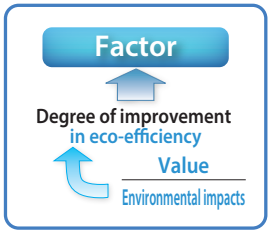
Environmental Vision 2050

Toshiba Group practices environmental management that promotes harmony with the Earth, contributing to the creation of affluent lifestyles for society.



Performance indicators for our Vision

Based on the concept of "eco-efficiency," we have set goals to ensure that all people can lead affluent lifestyles in harmony with the Earth.



Eco-efficiency can be expressed as a fraction, with the creation of new value as the numerator and environmental impacts as the denominator. The more enriched value created—or the more environmental impact is reduced and progress made toward coexisting with the Earth—the more eco-efficiency improves. We call the degree of improvement in eco-efficiency the "Factor," and increasing the Factor leads to affluent lifestyles in harmony with the Earth.

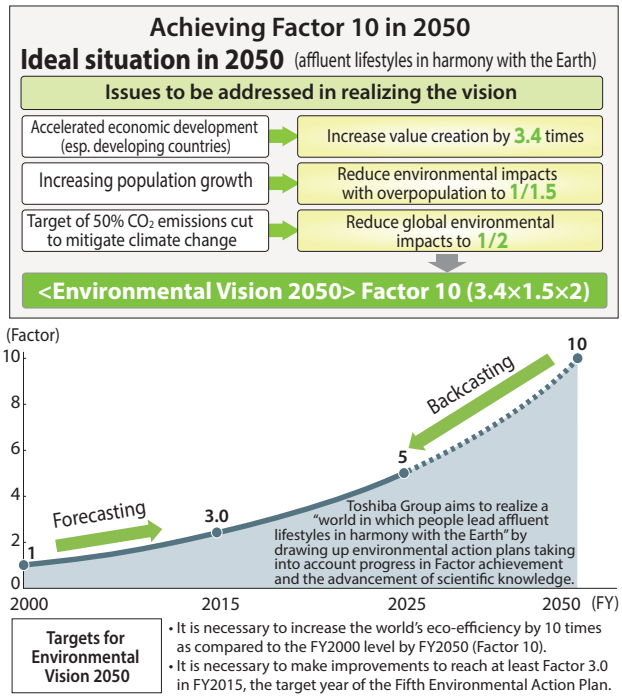
Based on several predictions about the future shapes society may take, we examined how much we need to raise the Factor by 2050.

It is assumed that the gross domestic product (GDP) of a country reflects value that its people can enjoy. According to the Organisation for Economic Co-operation and Development (OECD), the world's average GDP per capita is expected to grow **3.4** times by 2050.

It is also expected that the world population will increase by **1.5** times as compared to 2000 by 2050. And at the 15th Conference of the Parties to the U.N. Framework Convention on Climate Change, participants emphasized that it is necessary to reduce greenhouse gas emissions **by half** by 2050.

If the three points cited above are taken into account, the required degree of improvement in eco-efficiency (Factor) in the world in 2050 is 10.2 (3.4 × 1.5 × 2). The Toshiba Group Environmental Vision 2050 requires that the Group globally achieve Factor 10 by 2050. In consideration of the above, achieving Factor 10 has been established as a long-term goal by backcasting from the ideal situation in 2050. (See the graph below.)

At the same time, for 2015, the final year of the Fifth Environmental Action Plan which began in FY2012, achieving Factor 3.0 has been set as a stretch goal based on current initiatives through forecasting.



Targets for Environmental Vision 2050

- It is necessary to increase the world's eco-efficiency by 10 times as compared to the FY2000 level by FY2050 (Factor 10).
- It is necessary to make improvements to reach at least Factor 3.0 in FY2015, the target year of the Fifth Environmental Action Plan.

"Toshiba eco style"

In order to further accelerate its initiatives for environmental management based on the four "Green" concepts—"Greening of Process," "Greening of Products," "Greening by Technology," and "Green Management"—as it aims to become one of the world's foremost eco-companies and emphasize its approach to environmental issues in the wide spectrum of society, Toshiba Group has established "Toshiba eco style" as its unified global brand for environmental initiatives. It will work to achieve two "eco styles" on a global scale: (1) For individuals, our eco-conscious products create value and help to realize richer, more diverse lifestyles while reducing impacts on the global environment, (2) For society, our advances in power systems, sophisticated transmission networks, and essential infrastructure systems secure new levels of convenience, safety, and security, while contributing to the realization of an eco planet Earth.

http://ecostyle.toshiba.com

"Toshiba eco style," a unified global brand for environmental initiatives

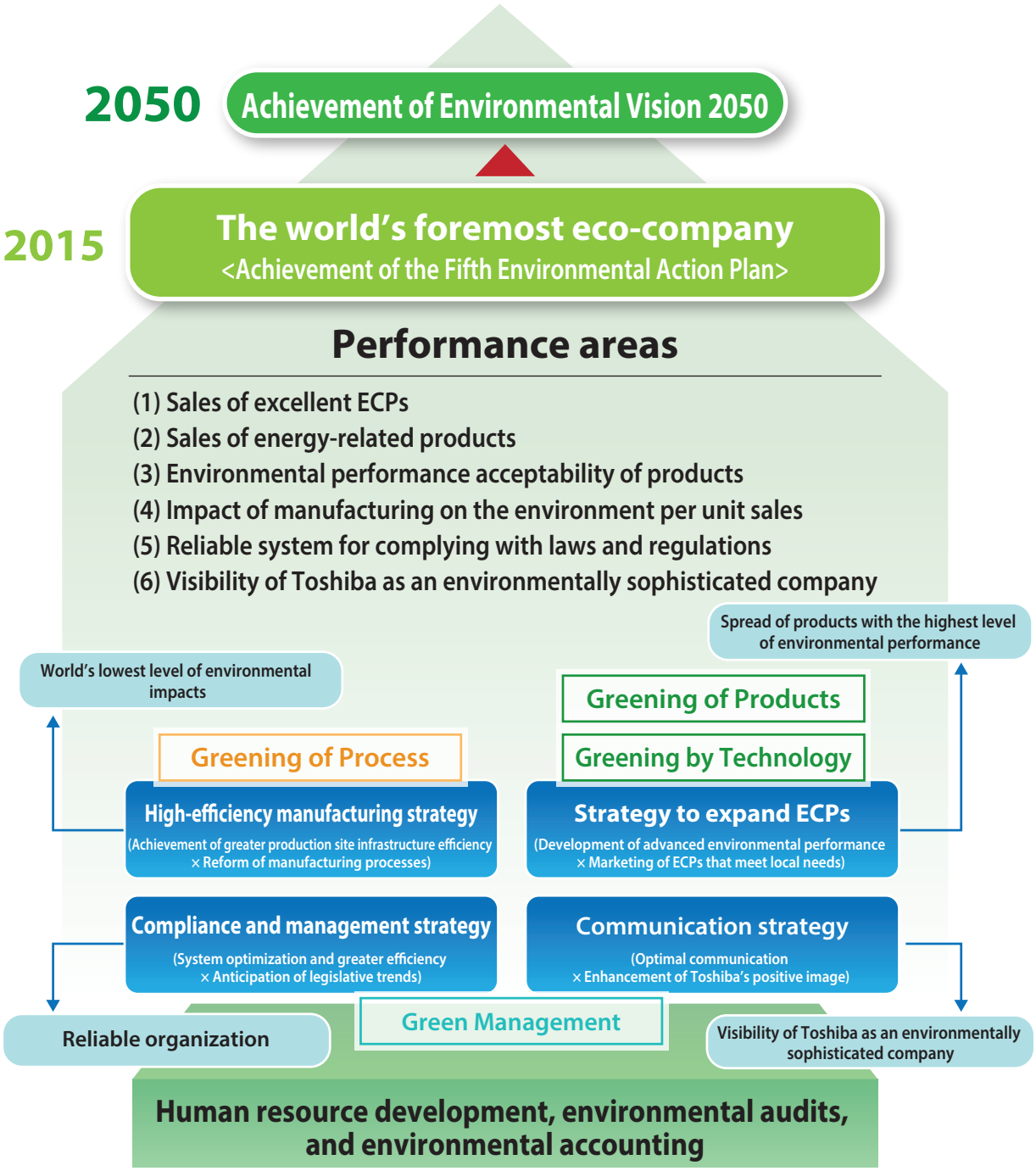
TOSHIBA eco style

Formulation of the Environmental Grand Design

Toshiba aims to establish its position as the world's foremost eco-company through six performance areas and four strategies.

We will establish performance areas that should be achieved and endeavor to integrate business administration and environmental management through the four strategies.

Toshiba Group has formulated the Environmental Grand Design to establish its position as the world's foremost eco-company in FY2015. This Grand Design consists of six performance areas that should be achieved by FY2015 and four environmental strategies: expansion of ECPs, high-efficiency manufacturing, compliance and management, and communication. Under the strategy to expand ECPs, we will work to apply the concept of excellent ECPs to all product lineups. At the same time, by pursuing manufacturing with the world's lowest level of environmental impacts through our high-efficiency manufacturing strategy, we will contribute to realization of sustainable societies on a global scale. At the same time, under our compliance and management strategy, we will strengthen the foundation of environmental management by continuing efforts to build an organizational structure worthy of the trust of society while we strive to increase the visibility of Toshiba as an environmentally sophisticated company through our communication strategy.



We have developed the Fifth Environmental Action Plan based on the Environmental Grand Design. We will achieve this plan through four "Green" initiatives.

Stepping up environmental management by introducing product sales management and total environmental impact controls

Based on the four strategies that constitute the Environmental Grand Design, Toshiba Group is implementing four "Green" initiatives: Greening of Products, Greening by Technology, Greening of Process, and Green Management. In order to achieve great integration of business management and environmental management, we have established specific goals to achieve continuous business growth and reduce environmental impacts; we are now taking action to attain these goals.

● **Strategy to expand ECPs**

In order to expand our ECP lineups, we are implementing two initiatives: Greening of Products and Greening by Technology.

In our Greening of Products initiative, by which we aim to create products with the highest level of environmental performance, we manage products' environmental performance using performance indicators such as sales of products, reductions in product-derived CO_2 emissions, the percentage of recycled plastics used, and reductions in the use of specified chemical substances. We will strive to create more products with the highest level of environmental performance mainly in order to increase sales of excellent ECPs to 1.8 trillion yen in FY2015, approximately six-fold compared to the FY2011 level, and to reduce CO_2 emissions by 15 million tons.

In the Greening by Technology (low-carbon energy technologies) initiative, we manage environmental performance through performance indicators such as sales and reductions in CO_2 emissions. In FY2015, Toshiba Group will increase sales of energy-related products concerning various types of power generation (e.g., thermal and wind power) to 1.9 trillion yen, about 1.5 times the FY2011 level. The Group will also offer advanced low-carbon technology to the global market with the aim of reducing CO_2 emissions by 490 million tons.

● **High-efficiency manufacturing strategy**

In the Greening of Process initiative, we manage performance indicators on both "per unit production" and "total volume" basis. Over the four years leading up to FY2015, we aim to achieve the world's lowest level of environmental impact through high-efficiency manufacturing, in which we simultaneously reduce costs and environmental impacts (greenhouse gases, waste materials, chemical substances, wastewater discharged from production sites, etc.).

● **Compliance and management strategy, Communication strategy**

We work on Green Management in order to enhance our basic environmental activities, such as developing the human resources that lead our environmental initiatives, upgrading our environmental management, and promoting better environmental communication. The Fifth Environmental Action Plan focuses on three performance indicators: conservation of biodiversity, environmental education and human resource development, and environmental communication. We will ensure that each and every one of its employees becomes aware of the need to participate in environmental management, and in FY2015, we plan to promote "Global Environmental Action" with the participation of all Toshiba employees worldwide. Through these initiatives, Toshiba aims to establish its position as one of the world's foremost eco-companies by 2015 by achieving greater integration between business operations and environmental management.

Implementing various measures based on the four "Green" concepts

Greening of Products

Create products with the highest level of environmental performance

Aiming to achieve the highest level of environmental performance for all products we develop and thus reduce environmental impacts throughout the product life cycle

Goal Increasing sales of Excellent ECPs to 1.8 trillion yen in 2015

Universal Smart X heat source system

LED light bulb

Greening by Technology

Developing advanced low-carbon technology on a global scale

Contributing to provision of a stable power supply and mitigation of climate change through the low-carbon energy technologies

Goal Increasing sales of energy-related products to 1.9 trillion yen in 2015

Mega solar system

High-efficiency combined cycle thermal power generation system

Greening of Process

Pursuing the world's lowest level of environmental impacts

Minimizing the impacts of production processes on the environment through high-efficiency manufacturing

Goal Increasing eco-efficiency by 1.5 times compared to the FY2000 level in 2015

Energy conservation diagnosis

High-efficiency freezer

Green Management

Aiming to achieve continuous improvement of our basic activities, including the human resource development, environmental communication and biodiversity conservation

Goal Training 2,000 employees as eco-style leaders (2015)

Employee participation website

Eco-style leader serving as a tour guide

Aiming to establish its position as one of the world's foremost eco-companies

Progress in the Fifth Environmental Action Plan

Toshiba Group achieved its annual goal for overall eco-efficiency by reaching its eco-efficiency goals in two areas: products and business processes.

In FY2012, we achieved our annual goal for overall eco-efficiency

In order to realize an ideal state of environmental management in 2050, Toshiba Group formulates environmental action plans and manages specific environmental activities and their targets in accordance with these plans. Since we formulated our first environmental action plan in FY1993, the Group has expanded its scope of environmental activities and governance. In the Fifth Environmental Action Plan, which covers the period from FY2012 to 2015, we are working on 22 activity items. The Environmental Vision 2050 requires the Group to increase the degree of improvement in overall eco-efficiency by ten times (Factor 10) by 2050 and by five times (Factor 5) by 2025. In FY2012, taking these requirements into consideration, the Group worked to achieve its goal of increasing the degree by 2.5 times (Factor 2.5). As a result, we increased product eco-efficiency in FY2012 by 2.89 times (target: 2.8 times) compared to the FY2000 level thanks to continued progress in creating value and reducing environmental impact mainly in the area of digital products and devices. We improved business process eco-efficiency by 1.39 times (target: 1.35 times) because of reductions in greenhouse gas emissions through energy conservation and other efforts. Thus, Toshiba Group exceeded its targets in both areas and succeeded in improving overall eco-efficiency, which combine these two types of eco-efficiency, by 2.59 times, more than our target of 2.5 times.

Achieved Status of the Fifth Environmental Action Plan

The table on page 12 summarizes the progress made in FY2012 with respect to the Fifth Environmental Action Plan. During FY2012, Toshiba Group achieved its goals for 19 of the 22 items in the Plan.

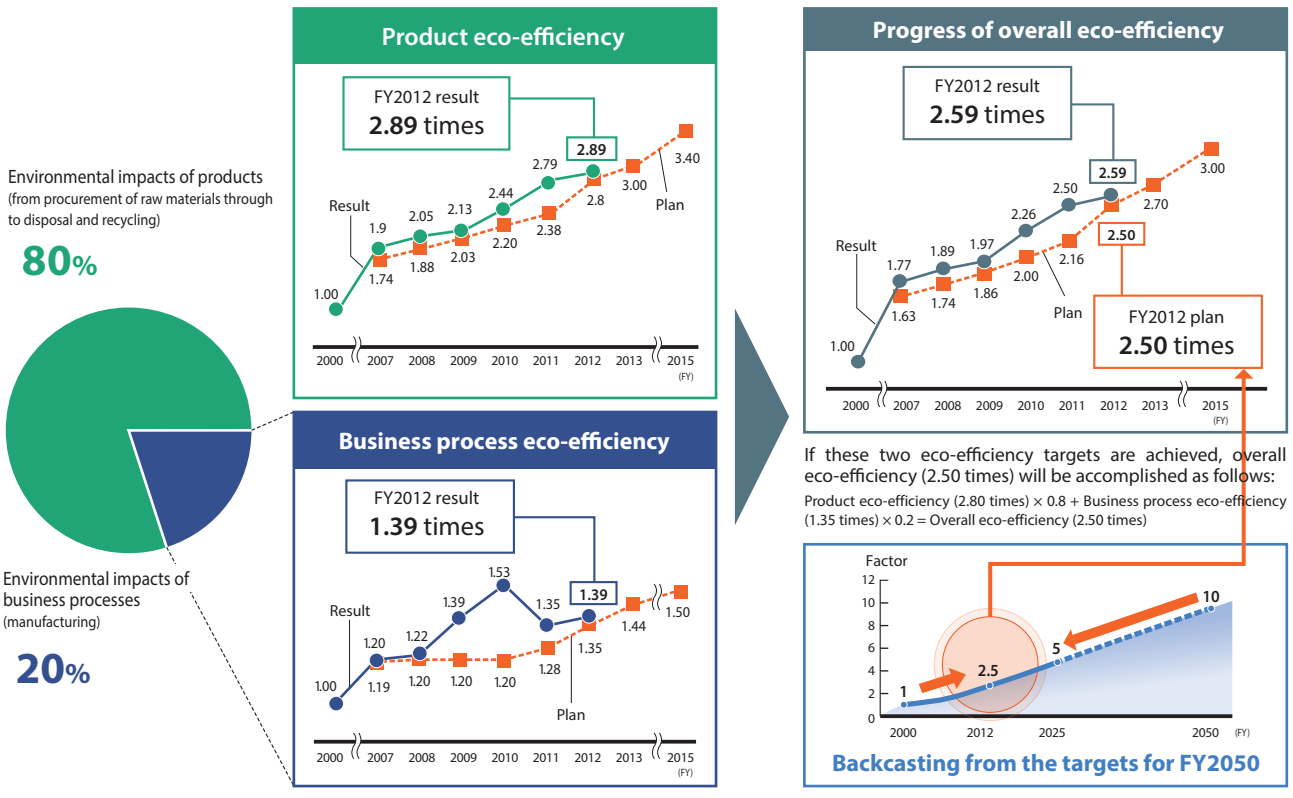
In the Greening of Product and Greening by Technology initiatives, we achieved our goals for four of the seven items. In particular, sales of excellent ECPs were 668.8 billion yen, 33% higher than initially planned. On the other hand, progress for the energy-related business and management of chemical substances were delayed because energy demand did not grow as initially planned and because reliability assessment and other processes took time as we replaced PVC and BFRs with other substances.

In the Greening of Process initiative, we achieved our goals for all nine items. We achieved our goal of reducing total greenhouse gas emissions mainly by taking measures to conserve electricity used for air conditioning, lighting, etc., monitoring power consumption more closely, conducting energy conservation diagnosis globally, and adjusting production volumes.

In the Green Management initiative, we achieved our goals for all three items. We obtained satisfactory results for our new initiatives. Specifically, to conserve biodiversity, we effectively used our business and production sites to protect rare flora and fauna. In terms of environmental education and human resource development, we trained employees as Toshiba eco-style leaders. To promote environmental communication, we opened a new website with employees' participation.

In FY2013, we aim to achieve all goals for the year by accelerating global business development in the energy sector and systematically advancing the management of chemical substances contained in products.

■ **Progress of overall eco-efficiency**



Toshiba Group's Fifth Environmental Action Plan

Eco-efficiency	FY2012 Goal	FY2012 Result	FY2012 Evaluation	FY2013 Goal	FY2015 Goal	See the following page.
Improvement of overall eco-efficiency (compared to FY2000 level)	2.5 times	2.59 times	Achieved	2.7 times	3.0 times	Page 11
Improvement of product eco-efficiency (compared to FY2000 level)	2.8 times	2.89 times	Achieved	3.0 times	3.4 times	
Improvement of business process eco-efficiency (compared to FY2000 level)	1.35 times	1.39 times	Achieved	1.44 times	1.5 times	

Greening of Products/Greening by Technology		FY2012 Goal	FY2012 Result	FY2012 Evaluation	FY2013 Goal	FY2015 Goal	See the following page.
Overall	Increasing sales amounts of Excellent ECPs (Greening of Products/by Technology)	0.5 trillion yen	0.67 trillion yen	Achieved	0.8 trillion yen	1.8 trillion yen	Page 24
		Sales of social infrastructure systems and electronic devices increased.					
	Increasing sales amounts of energy-related products (Greening by Technology)	1.36 trillion yen	1.32 trillion yen	Not achieved	1.49 trillion yen	1.9 trillion yen	Page 28
		The goal was not achieved because demand for thermal and hydroelectric power generation systems, photovoltaic power generation business, and other products did not grow as initially planned, though such sales increased compared to the previous year. Going forward, we will step up efforts to increase sales of these systems globally.					
Mitigation of climate change	Reduction of CO_2 emissions through eco-products (Greening of Products)	6 million tons	6.8 million tons	Achieved	9 million tons	15 million tons	Page 27
		We improved the energy-saving performance of home appliances and social infrastructure systems.					
	Reduction of CO_2 emissions through energy-related products (Greening by Technology)	450 million tons	450 million tons	Achieved	460 million tons	490 million tons	
		We achieved the goal by increasing the efficiency of various power generation-related products.					
Efficient use of resources	Resource savings for products*3	(33%)	29%	-*3	35%	50%	Page 32
		We made progress in areas such as making LCD TV sets flatter and lighter as well as increasing the capacity of magnetic disks.					
	Increasing the use of recycled plastics for products*4	2.6%	4.7%	Achieved	5.0%	3.0%	
		We made progress in using recycled plastic components for washing machines, refrigerators, and vacuum cleaners, as well as in newly using such components for business-use equipment.					
Management of chemicals	Reduction of specified chemical substances contained in products*6 (reduction of PVC*5/BFRs*5)	20 product groups	17 product groups	Not achieved	30 product groups	Total 80 product groups	Page 35
		The goal was not achieved because the reliability assessment for alternative parts and other processes took time. Going forward, we will work to use alternatives to PVC mainly for wiring and electronic components as well as alternatives to BFRs chiefly for main frames and mounted parts.					

Greening of Process		FY2012 Goal	FY2012 Result	FY2012 Evaluation	FY2013 Goal	FY2015 Goal	See the following page.
Mitigation of climate change	Reduction in total greenhouse gas emissions*7 (Compared to FY1990 level)	3.45 million tons <52%>	2.76 million tons <42%>	Achieved	3.92 million tons <60%>	4.39 million tons <67%>	Page 41
		Improvements were made mainly in energy conservation investments, electricity conservation measures, and production adjustments.					
	Improvement of total energy-derived CO_2 emissions per unit production*8 (Compared to FY2010 level)	96%	90%	Achieved	94%	90%	
		We made improvements mainly in energy conservation investments, electricity conservation measures, and production adjustments.					
	Improvement of total CO_2 emissions resulting from product logistics per unit production (Compared to FY2010 level)	98%	90%	Achieved	97%	95%	
		We achieved the goal mainly by improving load factors and restructuring logistic centers.					
Efficient use of resources	Reduction in waste volumes (Compared to FY2000 level)	107,000 tons <56%>	92,000 tons <48%>	Achieved	112,000 tons <59%>	117,000 tons <62%>	Page 45
		More waste was turned into valuables due to all-out efforts to sort it upon discharge.					
	Improvement of the total volume of waste generated per unit production (Compared to FY2010 level)	100%	96%	Achieved	96%	90%	
		We made improvements on a "per unit production" basis thanks to manufacturing process reforms.					
	Reduction in the percentage of final waste disposal (Compared to the total volume of waste generated)	1.8%	1.7%	Achieved	1.5%	0.5%	
		Our initiatives for recycling at overseas business and production sites produced satisfactory results.					
	Improvement of the volume of water received per unit production (Compared to FY2010 level)	96%	87%	Achieved	94%	90%	
		We made improvements at semiconductor plants where large volumes of water are used.					
Management of chemicals	Reduction in the total emissions of chemicals discharged (Compared to FY2000 level)	1,694 tons <67%>	1,393 tons <55%>	Achieved	1,625 tons <65%>	1,967 tons <78%>	Page 47
		We achieved the goal mainly by installing equipment for removing volatile organic compounds.					
	Improvement of the amount of chemicals handled per unit production (Compared to FY2010 level)	100%	94%	Achieved	98%	95%	
		We achieved the goal mainly by optimizing chemical inputs and reviewing the conditions for wastewater disposal.					

Green Management		FY2012 Goal	FY2012 Result	FY2012 Evaluation	FY2013 Goal	FY2015 Goal	See the following page.
Conservation of biodiversity	Developing ecosystem networks with production sites playing a central role in collaboration with local communities	Biodiversity at major production sites Percentage of sites where surveys were conducted 50%	Percentage of sites where surveys were conducted 81%	Achieved	Percentage of sites where surveys were conducted 100% Percentage of sites for which indicators were selected 50%	Percentage of sites where measurements were made 100%	Page 17
		54 of the 67 sites surveyed achieved the goal by completing biodiversity surveys.					
Environmental education and human resource development	Development of Toshiba eco-style leaders	200 leaders	230 leaders in Japan	Achieved	400 leaders	2,000 leaders	Page 56
		We achieved the goal mainly by recommending that employees take Eco Tests and obtain other qualifications.					
Environmental communication	Expanding environmental communication to connect people around the world	Creating an employee community to raise eco awareness	Opening of the Toshiba Baton website	Achieved	Fostering a sense of togetherness among employees	Promotion of "Global Environmental Action" to cope with global environmental issues	Page 62
		We developed an employee community by opening the employee participation website "TOSHIBA BATON."					

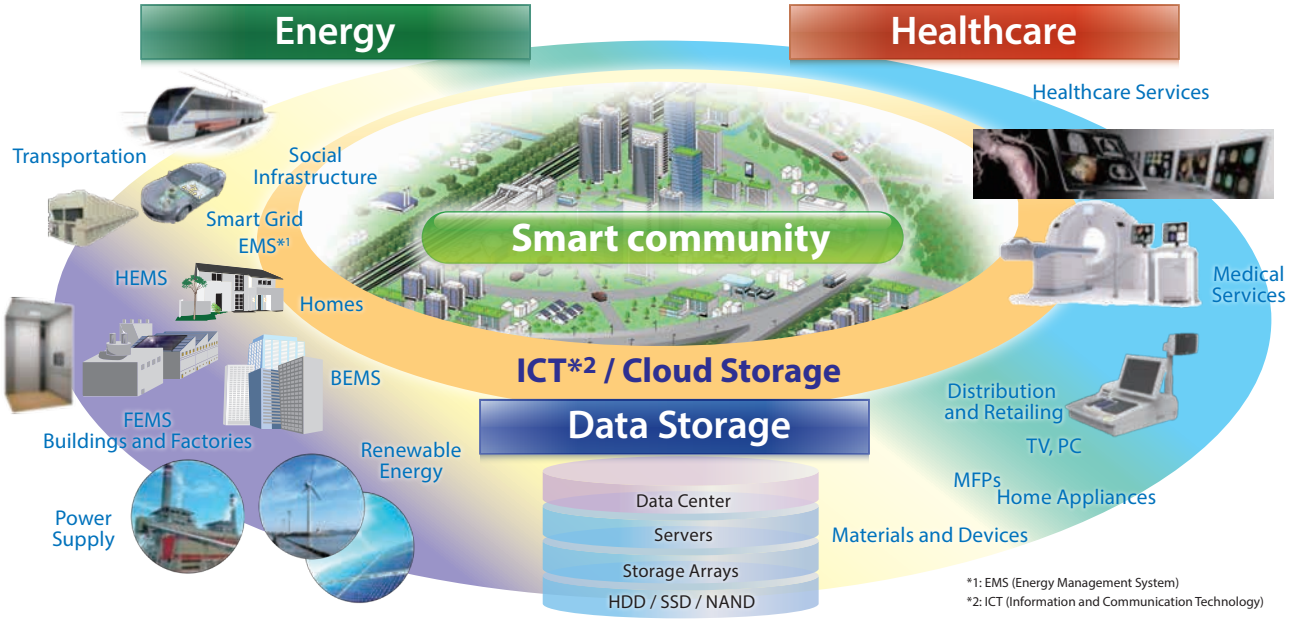
Note) Figures for benchmark years indicate performance data in the boundary set for 2012. Applicable to production and non-production sites in Japan and abroad.
As an indicator that enables appropriate assessment of reduction in greenhouse gas emissions, volume-based real outputs are used for basic-unit goals.
Real production = [Nominal output in Japan] / [corporate goods price index (for electrical equipment) announced by the Bank of Japan for the year (compared to 1990 levels, where 1990 is represented as 1)] + [nominal output outside Japan]

*1 [CO_2 emissions of assumed substitute products] - [CO_2 emissions of shipped products] (Compares annual emissions during the usage stage and cumulates emissions for half the product life.)
*2 Compared with CO_2 emissions (rate to net production output) for average thermal power of the same fuel type; for nuclear power/renewable energy, compared with CO_2 emissions (rate to net production output) for average thermal power of all types
*3 Rate of increase in the amount of resources saved (based on FY2010). As the indicator has been redefined, the value is different from the existing planned value.
*4 [Amount of recyclable plastics] / [Amount of plastics used for products] × 100
*5 PVC: Polyvinyl chloride is one of the most common plastics and is used in a wide range of products. There is concern about the generation of hazardous substances due to inappropriate treatment of PVC at the time of disposal and the harmfulness of some additives (e.g., phthalate esters) used to soften PVC.
BFR (brominated flame retardants): BFRs are used as flame retarders for plastics. Some BFRs are raising health concerns while others persist in the environment or are bioaccumulative. There is also concern over the generation of hazardous substances due to inappropriate treatment at disposal.
*6 Abolished except special uses.
*7 4.87 t-CO_2/10-thousand-kWh is used for the power factor in Japan, and GHG Protocol data is used overseas.
*8 The coefficient of electricity is fixed to that of FY2010.
*9 Obtained by deducting the volume of objects with value from the total volume of waste generated (excluding business and production sites engaged in waste treatment and power generation)

Toshiba Group's Initiatives for Smart Communities to Realize a Sustainable Society

In order to help solve global energy and environmental problems and realize a sustainable society, Toshiba Group is working to establish a highly-efficient, stable energy infrastructure, respond to increasingly large amounts of data and ensure information security, curb rises in medical expenses, and help provide advanced medical treatment. In order to meet our goals, Toshiba Group is promoting initiatives for smart communities built on three pillars of innovation: energy, data storage, and healthcare. Smart communities are initiatives that aim to realize personalized comfort and sustainable cities through a combination of various solutions. Thus far, Toshiba Group has participated in many pilot projects and commercial projects in various countries around the world, attempting to address each region's specific needs and striving to develop smart communities that best fit local needs.

Realizing smart communities built on three pillars of innovation



*1: EMS (Energy Management System)
*2: ICT (Information and Communication Technology)

Developing Smart Community projects that reflect local prioritized needs

Toshiba Group participates in 35 projects worldwide.

⊗: Number of Projects

Effective Mix Use of Electricity and Heat
Visualization of Energy Use, Effective Use, and Stable Operation
Utilization of Renewable Energy
Self-sufficient Energy Use
Healthcare
Security
Smart Shopping
Community Management
Solution for EV Operation

United Kingdom
- Bristol City
  - EUPJ (smart home)
- Isle of Wight
  - Self-sufficient Renewable Energy Use

France
- Lyon
  - Smart Community Demonstration

Italy
- Genoa
  - Smart City Promotion
- ACEA
  - Smart Grid

Middle & East Europe
- SC Business Study
- SC Feasibility Study

India
- Manesar
  - Electricity and Heat Supply
- Haryana
  - Electricity and Heat Supply

Viet Nam
- Hanoi
  - SW Technology Park
- Ho Chih Min
  - BaSon Area Redevelopment

Thailand
- AMATA Science City
  - High-Industry Accumulated City

Malaysia
- Green Township Vision
  - Putrajaya City PJ

China
- Low Carbon Infrastructure
  - Business Feasibility Study
- Gongqingcheng
  - SC Demonstration
- Tianjin
  - Environmental City PJ
- Guangzhou Nansha
  - SC Feasibility Study
- Jinzhou
  - Smart Community PJ
- Dongying, Wenzhou
  - Japan-China Eco City PJ

United States
- New Mexico
  - SG Demonstration
- Indiana
  - ESN PJ

Japan
- Iwate
  - Kuji PJ
- Miyagi
  - Ishinomaki PJ
- Fukushima
  - Iitate PJ
  - Minami-Soma PJ
- Saitama
  - Koshigaya Lake Town
- Tokyo
  - EV Bus Feasibility Study
- Kanagawa
  - Kawasaki Open Collaborative Research of Environmental Technology
  - Kawasaki Station Area PJ
  - YSCP
- Osaka
  - Ibaraki PJ
- Miyako Island, Okinawa
  - New Energy System Demonstration PJ
  - Whole Island EMS
  - Kurimajima PJ
  - Miyakojima μEV PJ

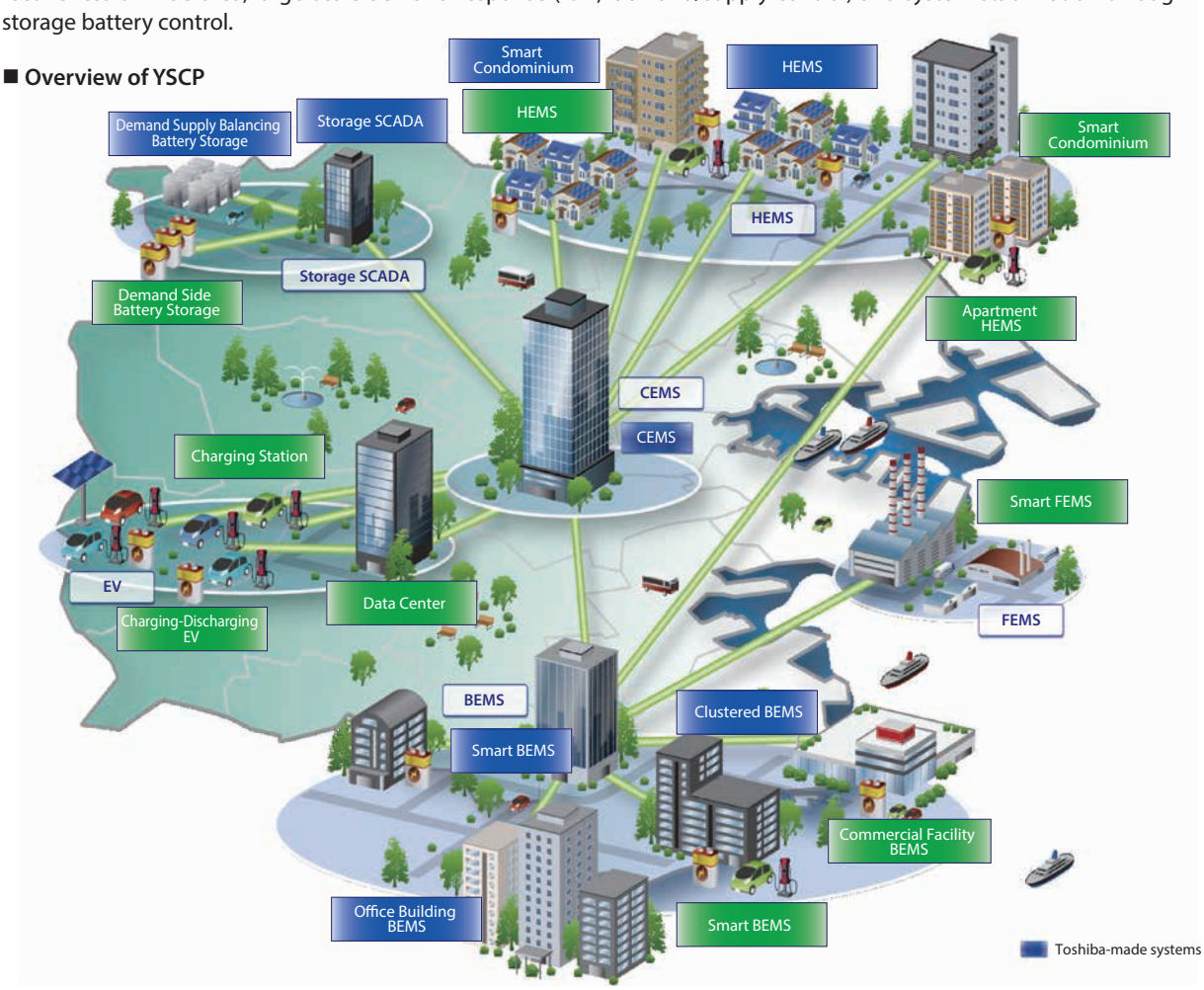
* As of May 2013 (after FY2009)

Regional energy management for a low-carbon society

Yokohama Smart City Project (YSCP)

The Yokohama Smart City Project aims to establish comfortable eco-lifestyles and build systems that use energy effectively on a community-wide scale in order to cope with climate change and reduce CO_2 emissions by breaking away from dependence on fossil fuels.
The Yokohama Smart City Project started tests in October 2012 to reduce energy consumption and CO_2 emissions through wide-area energy management by introducing energy management systems (EMSes) for buildings, factories, and houses as well as electric vehicles (EVs) and storage batteries in the city of Yokohama.
This project is a large-scale experiment in which the city's many consumers participate-the project aims to test the effectiveness of wide-area, large-scale demand response ("DR," demand/supply control) and system stabilization through storage battery control.

■ **Overview of YSCP**



Develop Community Energy Management aiming to cut CO_2 emission by 25%*

* FY2020 reduction target compared to the FY1990 level under Yokohama City's Action Plan for Global Warming Countermeasures

● **CEMS**
CEMS connects consumers (buildings, factories, houses, and EVs) and storage battery SCADA through standard interfaces to control overall energy demand via various DR incentives while monitoring local energy demand.

● **Storage battery SCADA**
Storage battery SCADA links supply/demand adjustment storage batteries and consumers' storage batteries for system stabilization and DR-based control.

● **BEMS**
BEMS reduces peak energy consumption of several buildings through DR using algorithms to optimally distribute the surplus power and controls operation of in-building energy creation and storage equipment that support DR.

● **HEMS**
HEMS shifts peak energy consumption through visualization of energy consumption and controls operation of home appliances automatically through automatic DR, while combining energy creation and storage equipment in condominiums.

CEMS: Community Energy Management System BEMS: Building Energy Management System
HEMS: Home Energy Management System SCADA: Supervisory Control And Data Acquisition
DR: Demand Response

Toshiba's Solutions for Smart Communities

Toshiba Group will promote initiatives for smart communities that aim to realize personalized comfort and sustainable cities by providing social infrastructure solutions in a wide range of areas such as energy, transport, water and healthcare.

Energy solutions

Consideration for the environment Contributing to mitigation of climate change in a wide range of tasks from creating, storing, and using energy to connecting energy systems

Creating energy


Mega solar system


Hydroelectric power generation


Geothermal power generation


Wind power generation


High-efficiency thermal generation


CCS


Nuclear power generation

Promoting high-efficiency power generation and low-carbon emission power sources

Storing energy

Smart battery

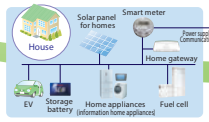
Developing and providing home and industrial electricity storage systems in order to use electricity effectively

Using energy

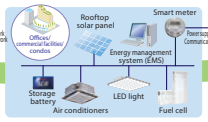
Energy-saving home appliances, smart home appliances

Developing and providing eco-products

Connecting energy systems



HEMS



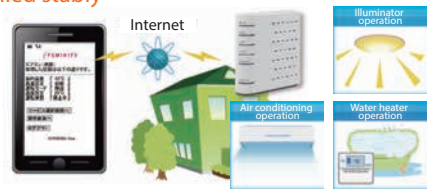
BEMS

CEMS

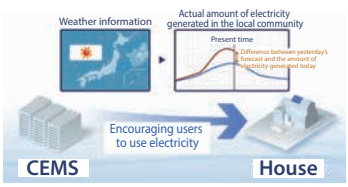
Developing and providing energy management systems that cover entire houses, buildings, factories, and communities

Comfortable and convenient Promoting environmentally conscious lifestyles which are comfortable and convenient and in which electricity is supplied stably


Stable electricity supply



Rendering electricity use and power generation visible as well as remote control of home appliances (HEMS)



Ensuring that energy is used optimally in the community (CEMS)

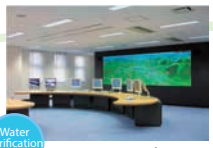
Water solutions

Consideration for the environment Contributing to the establishment of sustainable water recycling systems by supporting a wide range of tasks from purifying, distributing, and using water to recycling used water

Purifying and distributing water


Water purification plant Ozone generator

Realizing advanced water purification and treatment technologies using ozone's powerful oxidation abilities to remove color and smells as well as inactivate viruses and bacteria


Water purification plant Monitoring and control system

Ensuring efficient control by monitoring all water treatment processes from water intake to discharge

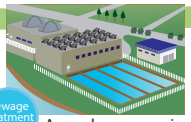
Using water

Water-saving home appliances

Recycling used water


Sewage treatment station System for turning sewage sludge into fuel

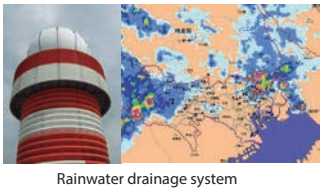
Making effective use of sewage sludge, which is usually treated as industrial waste, as biomass fuel by pyrolyzing it


Sewage treatment station A novel energy saving aeration system for nitrogen removal

Contributing to water quality improvement and energy conservation through high-efficiency water treatment control

Comfortable and convenient Ensuring comfortable urban living by allowing people to use water safely with a sense of security as well as taking disaster prevention measures


Ensuring integrated management of information on rivers and dam management as well as swift provision of accurate information

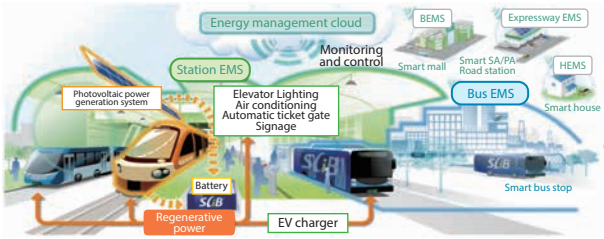

Rainwater drainage system

Contributing to efficient water discharge control during torrential rains by forecasting localized downpours

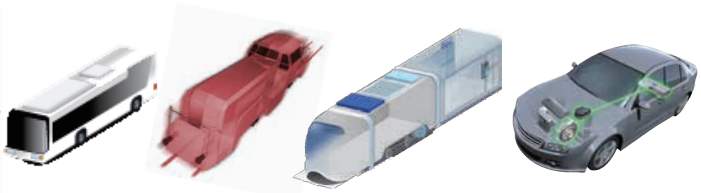
Rendering water consumption visible

Transport solutions

Consideration for the environment Making various means of transport and overall transport infrastructure more environmentally friendly through a wide range of technologies, systems, and products



Promoting transport and station energy management systems, which control train operation and power supply and ensure cooperation between the two, and which store regenerative electricity from trains and renewable electricity at stations in order to use such electricity for station buildings, trains, and other facilities effectively



Electric bus | Hybrid locomotive | Light rail new transportation system | EV/Hybrid vehicle system

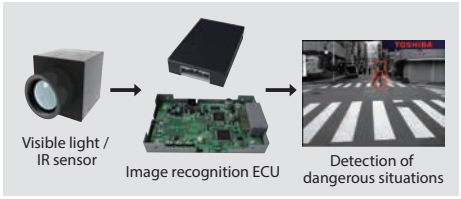
Promoting development and spread of products and systems that make the most of regenerative energy generated during deceleration, such as SCiB™ rechargeable battery, high-efficiency motors, and inverters

Comfortable and convenient Comfortable travel by rail and car that is less prone to delays, congestion, and accidents
Receiving various services and information even during travel

Traffic control system
Courtesy of Metropolitan Expressway Co., Ltd.

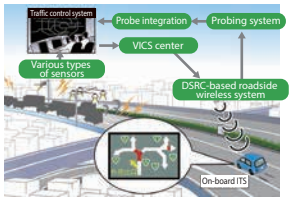
Rail operation management system

Promoting the development and spread of systems to monitor and control railway operation and safety as well as motor vehicle flow



Driving assistance system

Supporting the safety, security, and comfort of drivers through sensing technologies (e.g., image recognition)



Wide-area route guidance

Safe driving support information (ITS spot services)

Healthcare solutions

Consideration for the environment Making medical equipment more environmentally friendly through a wide range of technologies, systems, and products

Imaging technology

Realizing both low-dose X-ray photography and technologies that reduce power consumption

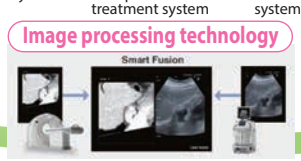
X-ray CT system | X-ray system

Miniaturization

X-ray CT system | Specimen treatment system | Ultrasonic system

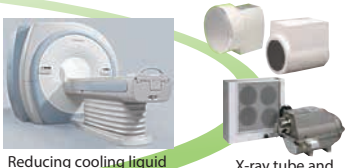
Securing of an examination space and reducing system weight by downsizing

Image processing technology



Increasing added value by linking images between modalities, improving examination efficiency, and reducing energy consumption simultaneously

Device utility



Reducing cooling liquid helium (MRI system) | X-ray tube and image tube

Achieving both high reliability and reduction in resource inputs through longer life and increased recycling

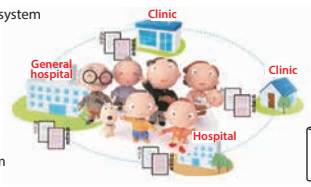
Comfortable and convenient

Creating an environment that enables people to live with a sense of security by providing all services from preventive medicine to disease screening, testing systems for early detection and diagnostic imaging systems, and treatment and post-treatment follow-ups

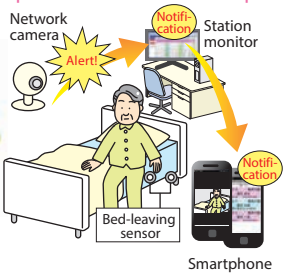
Health and medical concierge who provides services that meet individual needs

Intelligent Wearable Vital Signs Sensor Module

Women's health support solutions



System to support cooperation in healthcare among hospitals and clinics



Monitoring system

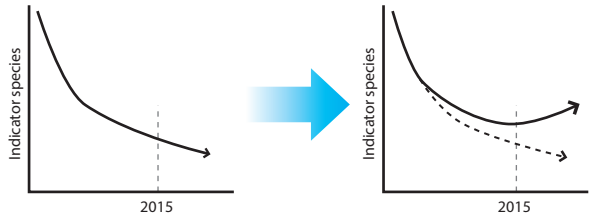
Special feature Conservation of Biodiversity

Toshiba Group is carrying out biodiversity conservation activities at 67 locations worldwide.

2015 target

Toshiba Group aims to minimize the adverse effects of its business activities on biodiversity and shift its biodiversity policy toward initiatives for improvement to realize an ideal state of environmental management in 2015.
These efforts aim to stop the decreases in the kinds of biodiversity that each site has decided to protect by 2015 and allow for such biodiversity to increase in subsequent years.

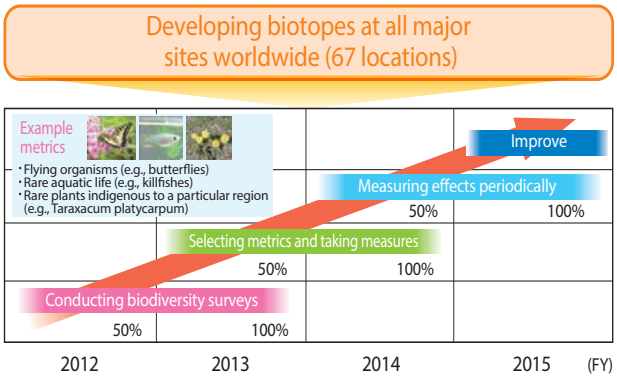
■ **Minimizing Adverse Effects and Increasing Biodiversity (Conceptual Diagram)**



The global Aichi Target adopted at the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10) held in Nagoya City, Aichi Prefecture, in October 2010 require all signatories to start increasing biodiversity by 2020.
Toshiba Group plans to achieve the Aichi Target about five years ahead of schedule.

Medium-term plan for the period up to 2015

To achieve the 2015 target, Toshiba Group aims to develop biotopes at 67 of its business and production sites worldwide.



Development of biotopes will be promoted in three steps: biodiversity surveys, selection of metrics and measurement of effects. Biodiversity surveys consist of investigations of living organisms and "red lists" in the environs of business sites, explorations of biodiversity by experts, and assessments of biodiversity potential at such sites and in neighboring areas.

* Explained in detail on pages 19-20.

Based on this survey data, Toshiba Group will select living organisms to serve as metrics, take measures to protect and increase them, and make periodic measurements of effects, thereby verifying the appropriateness of the biotope development process. Under the medium-term plan, the Group will take these steps at a minimum of 34 of its sites (50%) each year.

■ Medium-term plan

FY2012	FY2013	FY2014	FY2015
50% of sites surveyed	100% of sites surveyed 50% of sites have selected metrics	100% of sites have selected metrics 50% of sites have measured effects	100% of sites have measured effects

* 50% = 34 or more sites

■ Steps in biotope development

Survey ▶ Select metrics ▶ Measure ▶ Improve

Survey	Investigate organisms living on the premises; investigate IUCN and local area Red Lists; onsite inspection by local experts; assessment of biodiversity potential for targeted and neighboring areas.
Select metrics	Select relevant metrics on the basis of investigation data; devise measures to protect and expand the selected metrics.
Measure	Measure the metrics on a periodic basis. Examples of measurement targets: Number of species of animals, number of animals within each species, number of plant roots, size of planting area.
Improve	Improvement or enhancement in metrics achieved as a result of periodic measuring.

Results for FY2012

In FY2012, Toshiba Group conducted biodiversity surveys at 54 of its 67 sites covered by the project, and the percentage of sites surveyed was 81%, significantly exceeding the initial target of 50%. By region, the percentage was 100% for Asia (excluding Japan and China), the Americas, and Europe; the percentages for Japan and China were 83% (eight sites not surveyed) and 55% (five sites), respectively. In FY2013, Toshiba Group will complete biodiversity surveys at the 13 remaining sites.

The 54 sites that have been surveyed will select metrics based on their survey results and gradually carry out biodiversity protection activities.

Region	Eligible sites	No. of sites surveyed	% of sites surveyed
Japan	48	40	83%
China	11	6	55%
Asia	3	3	100%
Americas	3	3	100%
Europe	2	2	100%
Total	67	54	81%

Conservation of Biodiversity

Initiatives at production sites

(1) Establishment of ecosystem networks centered on production sites

Land use is one human activity that has an adverse effect on ecosystems. Residential land and factories destroy the living environments of plants and animals and disrupt wildlife corridors. Therefore, Toshiba Group aims to establish ecosystem networks that connect production sites with their neighboring areas.

Toshiba calls for employees who cultivate fruits such as yuzu (Citrus junos) and sudachi (Citrus sudachi) in their home gardens to allow some of the larvae of the swallowtail butterflies living on their leaves to grow until they mature into adults rather than eradicating all of them. Toshiba also distributes yuzu seedlings free of charge to employees who want them. We believe that we can contribute to expanding butterflies' habitats by calling them into our employees' home gardens.

Plants (eaten by butterflies)	Butterflies expected to be called in (example)
Yuzu and sudachi (citrons)	Asian swallowtail, spangle, and great Mormon
Kumquat	Asian swallowtail, spangle, and Chinese peacock

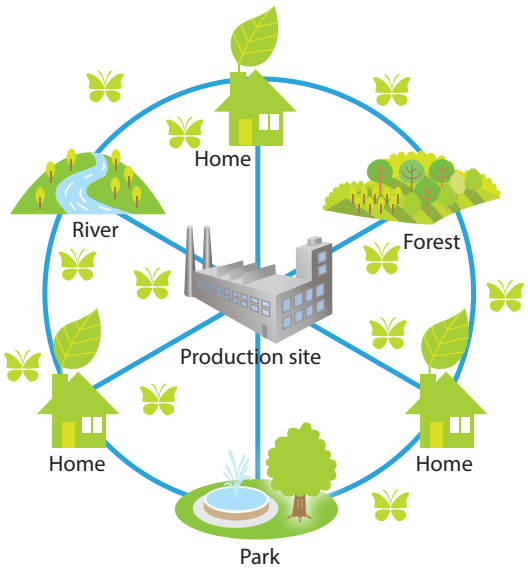

Citrons


Asian swallowtail (caterpillar)


Asian swallowtail (imago)

Additionally, the company plans to develop yuzu orchards in part of the green space at each of its production sites and make it a shelter for butterfly eggs laid in employees' home gardens and larvae that hatch from the eggs.

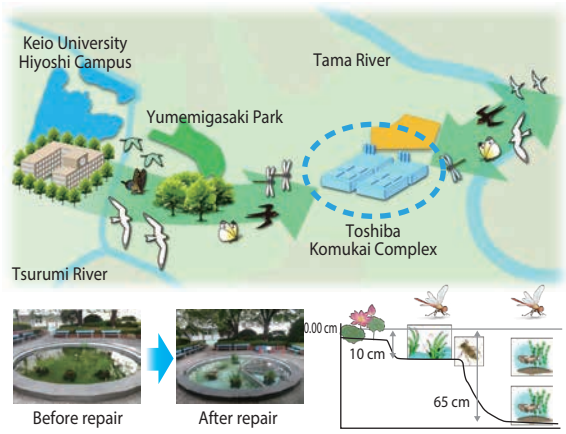
In the future, Toshiba aims to minimize the number of larvae eradicated at homes and establish an ecosystem network for butterflies that connects employees' homes, local forests, rivers, parks, and so forth with the company's production sites as its core.



Establishing a network for butterflies that connects employees' homes, neighboring parks, forests, rivers, and so forth with production sites as its core

Example 1-1 Toshiba Komukai Complex

The Komukai Complex aims to establish an ecosystem network that connects Keio University and Yumemigasaki Park to the west and Tama River to the north. A pond in the courtyard of the complex was transformed into a habitat for dragonflies, and now Jomon (ancient) lotuses* are grown there.



The pond was repaired to have three levels of depth: 0.00, 10, and 65 cm. The complex aims to offer diverse pond habitats by making different levels of depth available: 0.00 cm for Jomon lotuses, 10 cm for dragonfly nymphs, and 65 cm for dragonflies.

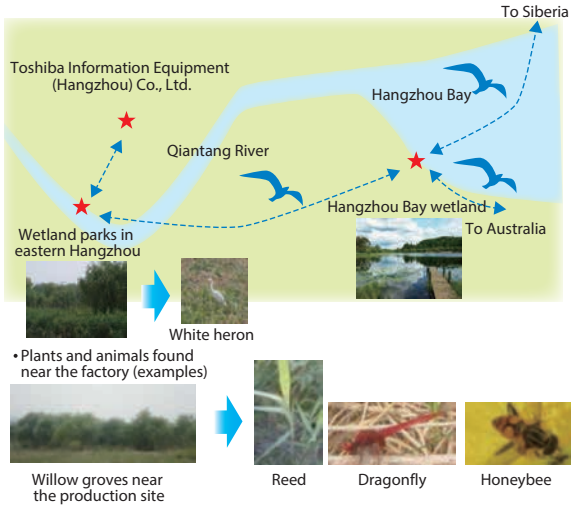

Jomon lotus

*The Jomon lotus sprouted from a more than 2,000-year-old seed of a lotus excavated from relics in Chiba City in 1951. It is considered to be the world's oldest flower. So far, its roots have been divided and distributed to various parts of Japan and the rest of the world, and the Jomon lotus has been designated by Chiba Prefecture as a natural monument.

Example 1-2 Toshiba Information Equipment (Hangzhou) Co., Ltd.

Toshiba Information Equipment (Hangzhou) conducted a survey of the ecosystem in the local community where it operates. The Hangzhou Bay wetland to the east is one of the world's treasure troves of migratory birds, which travel between Siberia and Australia via East Asia. Many migratory birds can be observed even in the environs of the company's production site as they fly in from the Qiantang River and wetland parks in eastern Hangzhou.

In the future, the company will continue to step up efforts to establish an ecosystem network with its neighboring areas mainly by conserving the willow groves at its production site.



(2) Ex-situ conservation of rare flora and fauna

Toshiba Group is promoting an ex-situ conservation* initiative as stipulated in Article 9 of the Convention on Biological Diversity.

*Measures taken for the recovery and rehabilitation of threatened species and for their re-introduction into their original habitats under appropriate conditions as well as measures taken for the purpose of complementing in-situ measures (as stipulated in Article 8 of the Convention) aiming to conserve such threatened species within their original habitats.

Example 1-3 Toshiba Keihin Product Operations

Japanese eight-barbel loaches are protected within an unused pond at the site. Plans call for these loaches to be returned to Tsurumi River, their original habitat, in the future after they have grown up in the pond.

Japanese eight-barbel loach (Listed as endangered by the Ministry of the Environment)

Raised in an unused pond

Example 1-4 Toshiba Lighting & Technology Corp.

Toshiba Lighting & Technology Corp. transplanted daylilies, which are excessively picked in the Koajiro forest of Miura Peninsula, to an open space on-site at the company and succeeded in blooming them. As their seedlings increase in the future, the company will re-plant them in the forest.

Transplanted to an open space at Toshiba Lighting & Technology Corp.

Blooming daylilies

Example 1-5 Buzen Toshiba Electronics Corp.

The company works to conserve Mikekado pumpkins around its production site in cooperation with civic groups.

Cultivating and harvesting pumpkins in cooperation with local elementary schools

Mikekado pumpkin

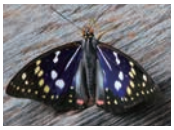
Tradition says that what are now called Mikekado pumpkins were first brought by the Portuguese to the Mikekado area in Buzen City, Fukuoka Prefecture, via Oita Prefecture over 400 years ago. They are said to be the oldest type of introduced pumpkins in Japan.
Since the Mikekado pumpkin, which retains the color, shape, and taste of the ones brought to Japan in the 17th century, is valuable culturally, activities are being carried out to preserve this vegetable and hand it down to future generations.

Example 1-6 Toshiba Medical Systems Corp.

The presence of many endangered species, such as Tokyo daruma pond frogs, great purple emperors, Ascalaphus ramburi, and Japanese grass lizards has been confirmed at the company's production site and in neighboring areas. The company is striving to survey and protect these living organisms with the aim of creating an environment in which as many of them as possible may live.

● Species covered by "red lists," the existence of which has been confirmed at the site and in neighboring areas (examples)

Ascalaphus ramburi (Species designated by Tochigi Prefecture as requiring attention)



Great purple emperor (Species designated by the Ministry of the Environment as near threatened)

Ricciocarpus natans (Species designated by the Ministry of the Environment as near threatened)

Northern goshawk (Species designated by the Ministry of the Environment as near threatened)

Tokyo daruma pond frog (Species designated by the Ministry of the Environment as near threatened)

Plestiodon japonicus (Species designated by Tochigi Prefecture as endangered type II)

● Confirmed insects (examples)

Cetonia pilifera

Indian fritillary

Sympetrum infuscatum

● Natural environment within the site and in neighboring areas

Plants at the production site that are home to snakes and lizards

Large birds fly over above plant communities in a field that has been abandoned and left uncultivated

Grassy area

Example 1-7 Toshiba Information Equipment (Philippines), Inc.

The company strives to conserve five endangered species, including narra, white lauan, and ipil trees, in the environs of its production site and distributes seeds of these trees to nearby schools and suppliers to increase the number of ex-situ conservation sites.

Narra

White lauan

Ipil tree

Narra, the national tree of the Philippines, once grew throughout the country, but owing to excessive felling, it is now designated as an endangered species. Narra trees were felled mainly because they were highly valuable as construction materials; it is said that many of the felled trees were exported to Japan.
It is highly significant that Toshiba Information Equipment (Philippines), a Japanese-affiliated company, protects narra and expands narra forests.

Conservation of Biodiversity

Range of travel of plants and animals in ex-situ conservation

In order to ensure ex-situ conservation, it is necessary to pay attention to the range of travel of plants and animals. For example, it is not desirable to protect Hokkaido's endangered species at a factory in Kyushu, which has a different climate and living environment. How far, then, can endangered species be transferred?

One guideline is to keep them within a river basin. "Basin" refers to the area of land where rivers catch the rain that falls and can be considered to be a single unit of an ecosystem. Therefore, Toshiba Group has a principle of moving plants and animals within the same basin when its business and production sites do so for the purpose of ex-situ conservation.

In Japan, 109 first-class rivers and their valleys occupy about 70% of the country's land, and Toshiba Group has confirmed which valley each of its domestic businesses and production sites are located in. Also at its business and production sites outside Japan, the Group promotes ex-situ conservation as necessary while referring to maps of basins and vegetation distribution charts for each region, marshland characteristics, and other data as well as paying attention to ecosystem units.

Significance of promoting ex-situ conservation in production site environs

Toshiba Group considers corporate production sites to be suitable for ex-situ conservation for two reasons. First, such sites can be managed by employees. Second, it is less likely that endangered species will be stolen or excessively hunted by third parties or that they will be eaten by natural predators or introduced invasive species.

In in-situ conservation*, which is widely practiced today to conserve biodiversity, it is difficult to carry out nature conservation activities and perform management work on the spot every day. At production sites, however, employees can take care of and observe plants and animals on a daily basis and detect any abnormalities early on. In addition, since security is maintained at production sites, there is practically no risk of endangered species being stolen by third parties or eaten due to unintended growth in populations of organisms such as raccoons or deer. From the viewpoint of conserving biodiversity, corporate production sites can become reserves for extremely important plants and animals.

* In-situ conservation (Article 8 of the Convention on Biological Diversity) refers to activities to conserve the ecosystem as a whole. Examples include conservation of forests through afforestation and thinning, preservation of satoyama, cleaning of rivers, and management of tidal flats. "Nature conservation activities" usually refer to in-situ conservation as defined above.

Toward mainstreaming biodiversity

Since the need to conserve biodiversity is less well known than the needs to address climate change and waste management, efforts are underway to make biodiversity conservation a mainstream part of environmental activities around the world.

In general, mentioning biodiversity conservation may remind one of, say, protecting the tropical rainforests in the Amazon valley or preserving satoyama far from urban areas. When working to establish an ecosystem network with business and production sites as the core and to conserve rare flora and fauna ex-situ, Toshiba Group attempts to carry out straightforward initiatives that are close to its employees and their families as well as to local residents so that they can work on such initiatives together. Toshiba Group believes that allowing people to make contact with nature and touch living organisms in their daily lives, whether they are in office districts, residential areas, or industrial zones, leads to a change in biodiversity awareness, which in turn provides a shortcut to mainstreaming biodiversity.

Human society benefits from ecosystems; these blessings from nature are known as "ecosystem services." Ecosystem services can be divided into three broad categories: provisioning, regulating, and cultural.

■ Map of basins of first-class rivers

(109 river basins: the names of 28 are written on the map and the other 81 are listed in the table)

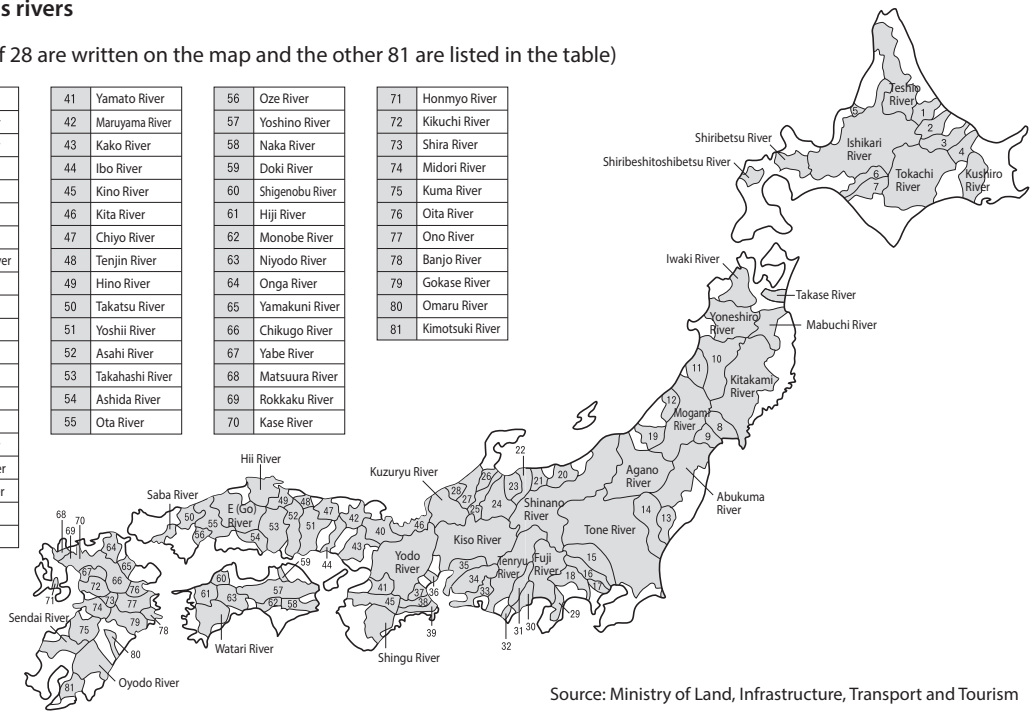
1	Shokotsu River
2	Yubetsu River
3	Tokoro River
4	Abashiri River
5	Rumoi River
6	Mu River
7	Saru River
8	Naruse River
9	Natori River
10	Omono River
11	Koyoshi River
12	Aka River
13	Kuji River
14	Naka River
15	Arakawa River
16	Tama River
17	Tsurumi River
18	Sagami River
19	Arakawa River
20	Seki River

21	Hime River
22	Kurobe River
23	Joganji River
24	Jintsu River
25	Sho River
26	Oyabe River
27	Tedori River
28	Kakehashi River
29	Kano River
30	Abe River
31	Oi River
32	Kiku River
33	Toyo River
34	Yahagi River
35	Shonai River
36	Suzuka River
37	Kumozu River
38	Kushida River
39	Miya River
40	Yura River

41	Yamato River
42	Maruyama River
43	Kako River
44	Ibo River
45	Kino River
46	Kita River
47	Chiyo River
48	Tenjin River
49	Hino River
50	Takatsu River
51	Yoshii River
52	Asahi River
53	Takahashi River
54	Ashida River
55	Ota River

56	Oze River
57	Yoshino River
58	Naka River
59	Doki River
60	Shigenobu River
61	Hiji River
62	Monobe River
63	Niyodo River
64	Onga River
65	Yamakuni River
66	Chikugo River
67	Yabe River
68	Matsuura River
69	Rokkaku River
70	Kase River

71	Honmyo River
72	Kikuchi River
73	Shira River
74	Midori River
75	Kuma River
76	Oita River
77	Ono River
78	Banjo River
79	Gokase River
80	Omaru River
81	Kimotsuki River



Source: Ministry of Land, Infrastructure, Transport and Tourism

■ **Ecosystem services**

Ecosystem services	(1) Provisioning services	Supply of materials such as food, water, wood and fuel
	(2) Regulating services	Waste decomposition, water purification and weather regulation
	(3) Cultural services	Recreation as well as spiritual, cultural and intellectual benefits

In order to maintain and improve provisioning and regulating services, it is necessary to protect nature and ensure in-situ conservation. At the same time, Toshiba Group aims to contribute to cultural services with the two policies it is advancing. Further, the Group believes that enhancing these cultural services is the most essential ingredient to accelerate the mainstreaming of biodiversity globally in the future.
Going forward, Toshiba Group will continue striving to conserve biodiversity around the world in cooperation with a wide range of stakeholders.

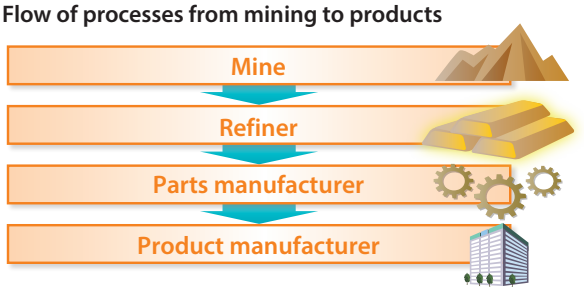
Supply chain initiatives

In addition to conventional green procurement, procuring raw materials in consideration of the ecosystem will be one important element of future biodiversity conservation initiatives. Toshiba is working to develop tools that can be applied to assess the effects of procured materials.

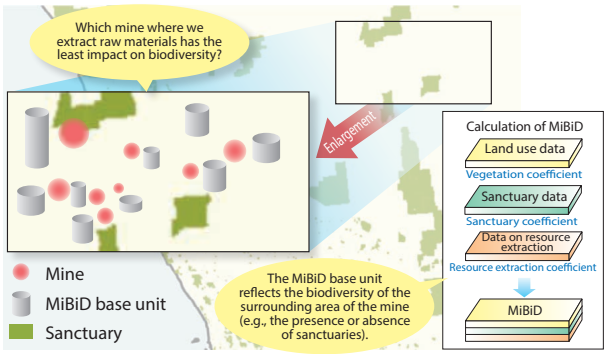
● **Index of Mining Impact on Biodiversity (MiBiD™)**

Toshiba Group has developed the MiBiD™ method to quantify the impacts of materials that constitute its products on the biodiversity of areas adjacent to mines when they are extracted. The Group has created a database of minerals extracted from mines around the world that records the relationships between the production scale of the mines and the surrounding reserves and vegetation using MiBiD/kg as the base unit. Until recently, this method covered iron, copper, and aluminum, which are all used in large quantities globally and indispensable to electric products, and now the MiBiD database includes zinc and lead as well. Application of MiBiD™ may enable us to procure materials while taking mining's effects on biodiversity into consideration. In order to identify the mines from which materials used for products and at business and production sites are procured, it is essential to obtain supply-chain information (e.g., the names of mines from which materials are extracted and the amounts of minerals used). Toshiba Group believes that in the future, if an environment that enables us to obtain such information becomes available, MiBiD™ will contribute to building our supply chain while taking biodiversity into consideration.

■ **Flow of processes from mining to products**



■ **Example of calculating the MiBiD base unit (MiBiD/kg) for each mine**



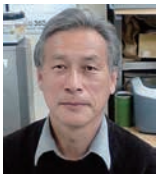
Note: MiBiD™: Index of Mining Impact on Biodiversity

Contributions to society

Toshiba Group's 1.5 Million Tree-Planting Project contributes to realizing ecosystems that are suitable for the growth of various organisms by pruning and thinning trees for proper forest management. Furthermore, the Group provides human resource development services for those who love nature, such as tree-planting events for employees, nature observation programs and training for nature observation instructors.


Nature observation program


Afforestation



Tsurumi River Basin Networking (NPO)
Representative Director
Professor Emeritus of Keio University

Mr. Yuji Kishi

In other words, mainstreaming biodiversity means that all individuals and organizations confirm the crisis of and hope for biodiversity in their daily lives and business activities, find ways of contributing to conservation and reconstruction, and implement these on a daily basis. The potentials of production sites are drastically being reconsidered today from this new perspective. For example, a review of production sites in the context of vast expanses of land (ecosystems) such as nearby river systems and their basins indicates that each site is a party to the crisis and represents hope for its ecosystem because it is an important part of the ecosystem and fulfills a role unique to the area where it is located. Also, it is a focus of great expectation and hope as a new place that provides a living environment to neighboring organisms that can fly, or as a candidate for ex-situ conservation for those which are endangered in the local ecosystem and cannot fly. Furthermore, nature reserves of corporate sites are characteristically managed strictly because they are placed under rigorous security management. If we just realize this, the logical conclusion is that corporate sites can be centers of hope for the conservation and restoration of biodiversity in the ecological spaces (including river systems and their valleys, hills, etc.) where they are located.
The biodiversity crisis will be overcome through diverse ways and means when individuals and organizations figure out, in all aspects of their daily lives and business activities, and recognize this as a challenge that they should solve and take action for on their own initiative in cooperation with their local communities. I sincerely hope that Toshiba, which has brilliantly realized this simple, clear, and powerful truth and started a local and global biotope strategy, will play an active role in mainstreaming biodiversity.

Chapter 2

Expansion of ECPs

Aiming to achieve the highest level of environmental performance, we strive to expand the creation and widespread use of Excellent ECPs.

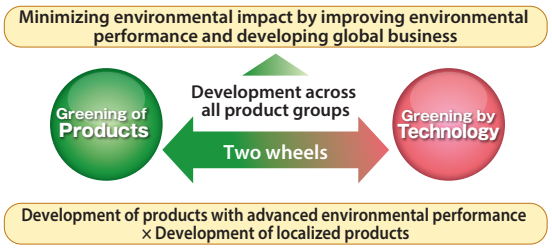
INDEX

Summary of activities in FY2012

Promoting the creation of products with the highest level of environmental performance

Toshiba Group is making efforts to achieve the highest level of environmental performance for all products that we develop. We will accelerate the creation of ECPs with high levels of environmental performance in all product areas through "Greening of Products" initiatives aimed at minimizing the environmental impact of products throughout their entire life cycles and "Greening by Technology" initiatives aimed at providing a stable power supply and mitigating climate change worldwide using low-carbon energy supply technologies. At the same time, we will promote the development of localized products to meet the individualized needs of different countries and areas, including developed countries as well as developing countries, where environmental impact is likely to increase as a result of economic growth.

■ **Toshiba's ECP expansion strategy**

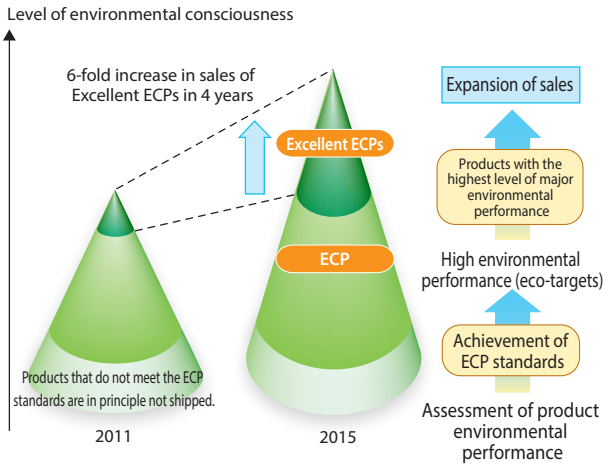


● **Aiming to create products with the highest level of environmental performance at the time of product release**

To create ECPs, Toshiba Group sets "eco-targets" to develop products with the highest level of environmental performance in the business strategy formulation and product planning stages. Then, in the product development and design stages, we make environmental assessments of the products to ensure that they meet the Toshiba environmental standards. During the environmental assessments, we check whether the products comply with laws and regulations as well as meet the ECP standards (the Toshiba environmental standards) in all three aspects throughout all stages of their life cycles. In the product approval stage, we check the level of achievement of the eco-targets and whether the products are in compliance with the ECP standards, certifying those products with the highest level of environmental performance.

* Environmentally Conscious Products (ECPs) are designed to minimize environmental impact throughout all stages of their life cycles, including during procurement of materials, manufacture, distribution, use, disposal and recycling.

■ Expansion of creation of Excellent ECPs



Three elements of ECPs

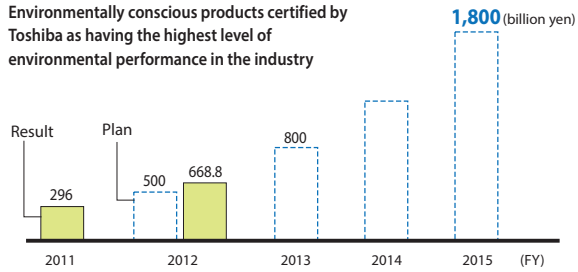
Mitigation of climate change	Efficient use of resources	Management of Chemicals
•Reductions in power consumption •Reductions in standby electricity •Visualization of power consumption •Energy-saving mode •Shipment mode, etc.	•Reductions in the use of raw materials •Use of recycled materials •Easy to disassemble •Reductions in the use of packaging materials •Reductions in the use of supplies •Upgrades, longer useful lives, etc.	•Reductions in the use of specified hazardous substances •Green procurement •Distribution of information on chemicals •Compliance with chemical regulations in different countries, etc.

Target and Result of Creation of Excellent ECPs

● Results of FY2012 and future initiatives

In an effort to enhance the creation of Excellent ECPs, Toshiba Group has introduced sales of Excellent ECPs as a new indicator. As a result of expanding the range of certified products in the areas of social infrastructure and electronic devices, Toshiba Group's sales of Excellent ECPs in FY2012 totaled 668.8 billion yen, greatly exceeding the goal (500 billion yen). We will accelerate the creation of Excellent ECPs in the areas of solutions and system products to achieve sales of Excellent ECPs totaling 1.8 trillion yen in FY2015.

■ Sales of Excellent ECPs



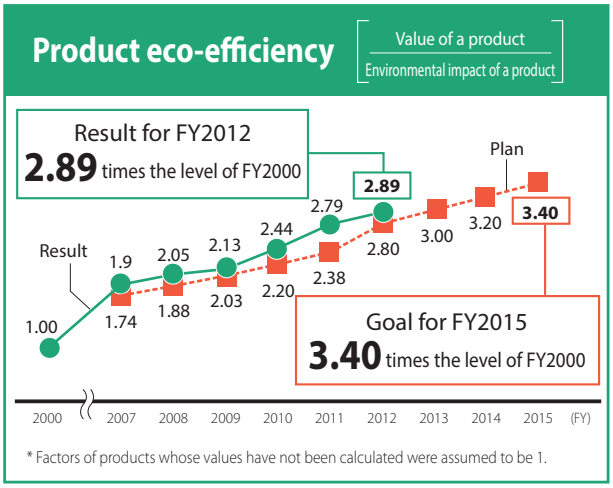
Aiming to increase product eco-efficiency by 3.4 times in FY2015

Viewing the product eco-efficiency (details on page 37) as an important indicator, Toshiba Group is promoting activities to create ECPs.

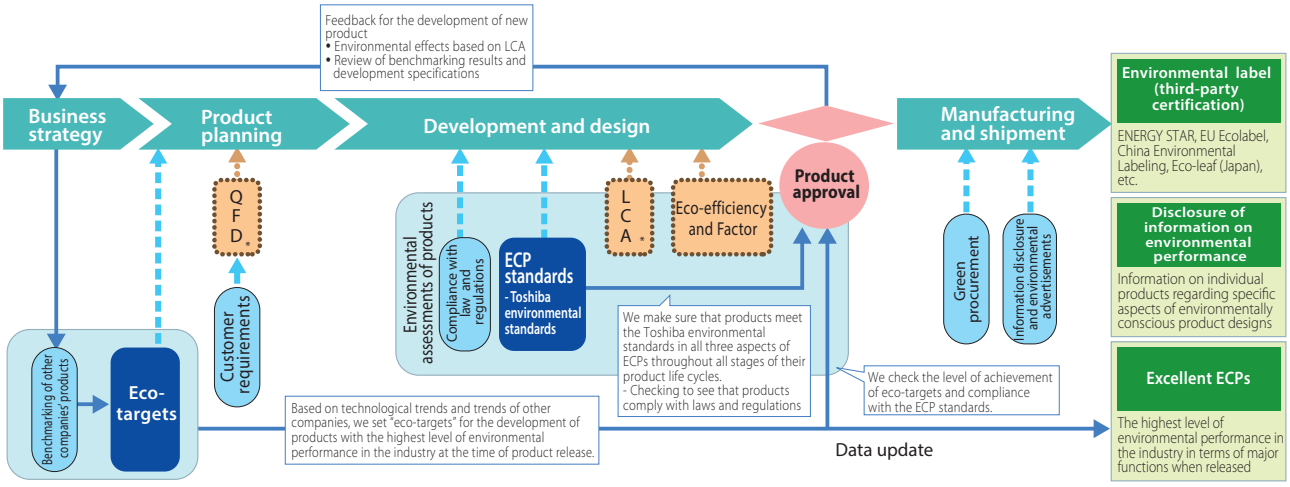
● Results of FY2012 and future initiatives

By the end of FY2012, we calculated the Factor values (degree of improvement in eco-efficiency) for almost all Toshiba Group products. By enhancing the value of products and by reducing their environmental impact, Toshiba Group was able to achieve a Factor of 2.89, which far exceeded the goal of 2.8.

We aim to increase the product eco-efficiency to 3.0 times the level of the base year (FY2000) in FY2013 and 3.4 times the level of the base year in FY2015.



■ Process of creating Excellent ECPs



* For the details of QFD and LCA, see page 37.

Creation of Excellent ECPs

Group-wide efforts for the creation of products with the highest level of environmental performance

● Results of FY2012

Toshiba Group is striving to create "Excellent ECPs" with the industry's highest level of major environmental performance and to promote their use. In FY2012, we certified 72 products as "Excellent ECPs." Sales of "Excellent ECPs" for FY2012 totaled 668.8 billion yen, accounting for approximately 12% of all group companies' sales.

● Future initiatives

We will increase the number of Excellent ECPs not only in the areas of home appliances and digital products, but also in the area of social infrastructure products and achieve sales of 1.8 trillion yen in FY2015.

● Products certified as Excellent ECPs in FY2012

Audio-visual and digital products

LCD TV

40/32PB200 (April/May 2012 release, developing countries)
40/32PU200 (July 2012 release, developing countries)

- The highest level of resource-saving performance*
  (32PB200/PU200 body weight: 5.5 kg)
  (40PB200/PU200 body weight: 8.0 kg)

Ultrabook™

dynabook R632
(June 2012 release)

- The highest level of energy- and resource-saving performance*
  (ENERGY STAR TEC value★: 15.8 kWh)
  (Body weight: approx. 1.12 kg)
- EPEAT Gold rating (22 points)
  (U.S. model)

Blu-ray disk recorder

DBR-T350/T360 (November 2012 release)

- The highest level of energy-saving performance*
  (T350: Annual power consumption of 22.7 kWh)
  (T360: Annual power consumption of 23.5 kWh)
- The highest level of resource-saving performance*
  (T350 body weight: 2.6 kg)
  (T360 body volume: 4,605 cm³)

Tablet

AT700 (October 2011 release)

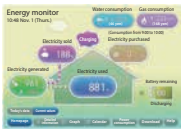
- The highest level of resource-saving performance*
  (Body weight: approx. 535 g;
  Thickness: approx. 7.7 mm;
  Body volume: approx. 347 cm³)

★ TEC value: Power consumption calculated based on the standard conditions for assessing appropriateness for the International Energy Star Program

Home appliances

Home IT system

HEMS/Feminity (March 2012 release, Japan)



- Use of ECHONET Lite before other companies
- Support for energy saving through visualization
- Winner of the FY2012 Eco-Products Award for Outstanding Products
  (Eco-Service Category)

Refrigerator/freezer

GR-F56FXV, GR-F51FXV,
GR-F48FS, GR-F48FX
(GR-F51FXV, November 2012 release)

- The lowest level of annual power consumption in its product class
  (180 kWh/yr. for GR-F51FXV)
- The industry's lowest level of power consumption (for defrosting)
  (93 W for GR-F51FXV)

Washing machine with dryer

TW-Z9500/Z8500 (October 2012 release)

- Best-in-class energy-saving performance
  Power consumption: 620 Wh
  (When washing and drying 6 kg of clothes)
  Water consumption: 49 L
  (When washing and drying 6 kg of clothes)

LED light bulb

LDA9L-G and LDA9N-G
(May 2012 release)

Wide light distribution type with luminosity equivalent to a 60-W lightbulb

- The highest level of luminous efficiency*
  (92 lm/W)

LDA6L-H-E17/S
LDA6N-H-E17/S
(July 2012 release)

Luminosity equivalent to a 50-W mini krypton bulb

- The highest level of luminous efficiency*
  (110.7 lm/W)

LED lighting equipment

LEDD-50103W-LD9 and other models
(July 2012 release)

Luminosity equivalent to HID100W

- A unique product that achieves high luminosity with 60-W of power
  Luminous efficiency
  (73.3 lm/W)

Microwave oven

ER-KD520 and other models
(September 2012 release, Japan)

- The highest level of energy-saving performance*
  (Power consumption (warm up function): 52 kWh/yr.)

ENE-FARM, a fuel cell for residential use

TM1-AD (March 2012 release, Japan)

- The highest level of energy-saving performance*
  (General energy efficiency: 94%)
- The highest level of resource-saving performance*
  (Body weight: 94 kg)
  (Durability: 10 years)

Photovoltaic power generation system for residences

(December 2012 release, Japan)

- The world's highest level of module conversion efficiency, 20.1%*
  (Nominal maximum output capacity: 250 W)

Multi air conditioner system for developing countries

MiNi-SMMS MCY-MHP1204HT8-C and other models
(November 2012 release)

- Achieved the industry's highest level of IPLV (5.65)* (China's energy efficiency standard)
- The lightest weight in the industry*
  (164 kg)

* As of when the product was released on the market; this result does not guarantee the current status of the product.

Industrial and social infrastructure products

Combined cycle thermal power generation system

(Japan and elsewhere)

- The highest level of efficiency*
  (≥ 62% (lower heating value basis))

X-ray CT system

Aquilion ONE™ / ViSION Edition
(June 2012 release, Japan)

- The highest level of energy- and resource-saving performance*
  (Test efficiency, footprint, body weight)
- FY2012 Eco-Products Award for Outstanding Products
  (Eco-Products Category)

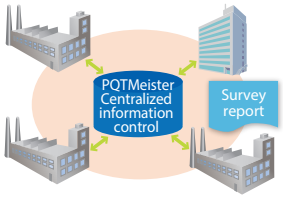
Renewal of existing elevator

ELFRESH
(July 2012 release, Japan)

- The highest level of energy-saving performance*
  (Reduction in power consumption of at most 50%)
- No oiling required for guide rails
- Chemical substance reduction
  (without mercury)

Traceability solution

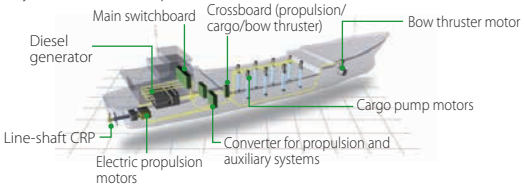
PQTMeister® (July 2012 release, Japan)



- A unique package product in the safety quality area
- The lowest environmental impact during system construction*

Electric propulsion system for ship

Inverter control system, power generator and propulsion motors
(delivery in December 2012, Japan)



- Resource-saving features (footprint: reduced from 2.1 m² to 1.7 m²; weight: reduced from 2.0 tons to 1.5 tons)
- Energy-saving features (20% improvement in fuel efficiency)
  This unique product reduces the number of generators required to start a vessel to one.

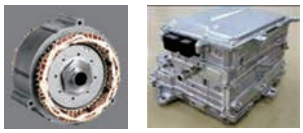
Escalator

Green-concept escalator
Kindmover
(October 2012 release, Japan)

- The highest level of energy-saving performance*
  (Reduction in engine energy consumption of at most 40%)

Motor/Inverter for hybrid vehicles

For U.S. customers (mass production from 2012)



- The highest level of energy-saving performance*
  (Maximum motor efficiency, power density)

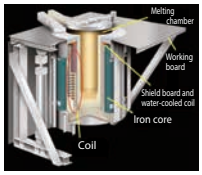
Circulation heating pump unit

CAONS140
HWC-H1401S
(April 2012 release, Japan)

- Maximum leaving water temperature: 90°C
  (Industry first)
- The highest level of energy-saving performance*
  (COP 3.5/leaving water temperature: 65°C)

High-efficiency induction furnace

High-efficiency induction furnace, Ele-save furnace
(Shipment in December 2012)



- The highest level of energy-saving performance*
  (Melting energy per unit production: 472 kWh/t)

Industrial camera

IK-TF5P2/TF7P2
(September 2012 release, Japan)

- The highest level of energy-saving performance*
  TF5P2/TF7P2
  (Power consumption: 3.5 W / 3.1 W)
- The highest level of resource-saving performance*
  (Body volume: 151 ml; Body weight: 158 g)

Color MFP

e-STUDIO2050C/2550C
e-STUDIO2051C/2551C
(July 2012 release, developing countries and elsewhere)

- The highest level of resource-saving performance*
  (Body weight: 57 kg)

Paper reuse system

Loops
(February 2013 release, Japan, Europe and developing countries)

- A unique product that simultaneously removes colors, sorts data and creates electronic data
- Minister of the Environment's Award for Global Warming Prevention Activity
  (December 2011)

POS terminal

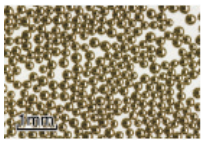
QT-100
(July 2011 release, Japan)

- The highest level of resource-saving performance*
  (Body weight: 14.5 kg)

Electronic devices and parts

Magnetic materials for cryogenic regenerator matrices

HoCu2 (April 2001 release, Japan)



- The highest level of resource-saving performance*
- Mitigation of climate change
  (Reduction in CO_2 emissions as a result of eliminating use of helium as a supplementary liquid)
- Management of hazardous chemicals (reduction in use of lead)
- Product with a global patent

Compressor

A1 dual compressor
(for home air conditioners, Japan)

- Minimum power consumption: 55 W
  (When mounted with an air conditioner)
- Winner of the FY2012 Award of the Japan Society of Mechanical Engineers

* As of when the product was released on the market; this result does not guarantee the current status of the product.

Mitigation of Climate Change

In order to promote developments aimed at mitigating climate change, Toshiba Group assesses the entire life cycle of products. We will reduce CO_2 emissions in a wide range of business areas, from products for supplying energy to those for using energy, in order to contribute to mitigation of climate change.

Two initiatives on mitigation of climate change

With a view to mitigating climate change, Toshiba Group is striving to reduce CO_2 emissions through two initiatives: the "Greening of Products" initiative aimed at developing products by setting eco-targets for mitigation of climate change to improve major environmental performance, and the "Greening by Technology" initiative aimed at developing energy supply technologies.

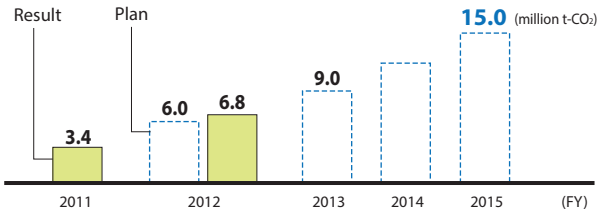
Reducing CO_2 emissions through the "Greening of Products" initiative

Toshiba Group's products cover a wide range of categories from consumer electronics to power generation plants, and CO_2 emissions from these products in different stages of their life cycle vary from one product to another. Under the Fifth Environmental Action Plan, we will continue to evaluate products throughout their entire life cycle. At the same time, we will focus our efforts on reducing environmental impacts during customers' use of products, which has a large effect on the environmental efforts of Toshiba Group as a whole, and further enhance the annual CO_2 emissions reduction effect that may be achieved if conventional products are replaced by eco products.

● Results of FY2012

Since FY2010, we have set eco-targets regarding the mitigation of climate change in order to develop products with the highest level of environmental performance. In FY2012, we were able to reduce CO_2 emissions by 6.8 million tons per year by offering newly developed products throughout the world.

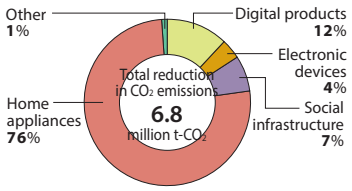
■ Breakdown of reductions in CO_2 emissions (FY2012)



● Future initiatives

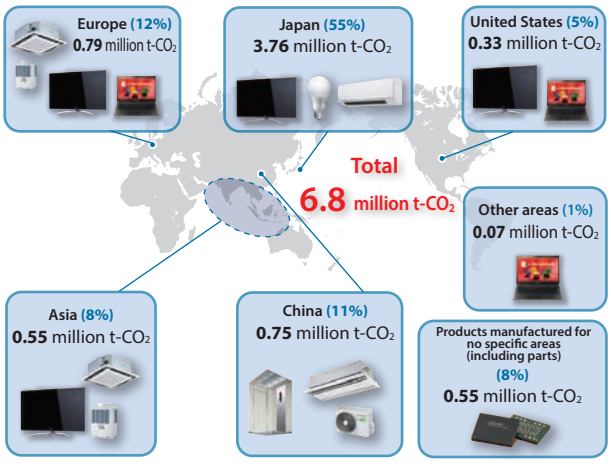
Toshiba Group will continue to reduce CO_2 emissions across all its products by identifying key factors that contribute to reducing CO_2 emissions and by sharing advanced examples and core technologies among group companies. At the same time, we will expand our business in global markets for home appliances, such as digital products that use substantially less energy and LED light bulbs that have large energy-saving effects, as well as for social infrastructure products—especially in markets in emerging countries where there is a rapidly growing demand for products that can achieve great reductions in CO_2 emissions. Through these measures, we aim to achieve a reduction in CO_2 emissions of 15 million tons by FY2015.

■ Breakdown of reductions in CO_2 emissions (FY2012)



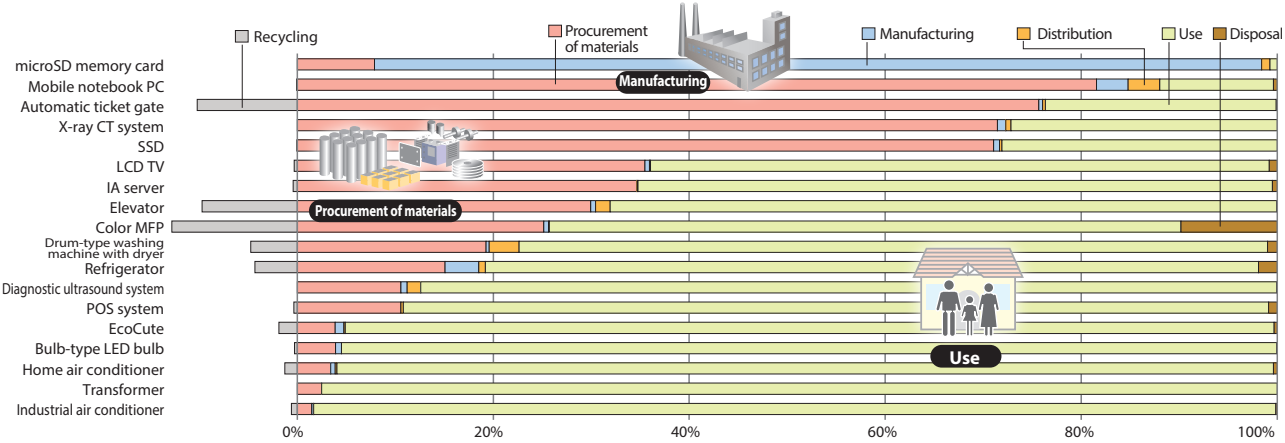
By business segment

■ Breakdown of reductions in CO_2 emissions by area (FY2012)



* The photos is for illustrative purposes only.

■ Percentages of CO_2 emissions from different stages of the life cycle of Toshiba Group's products

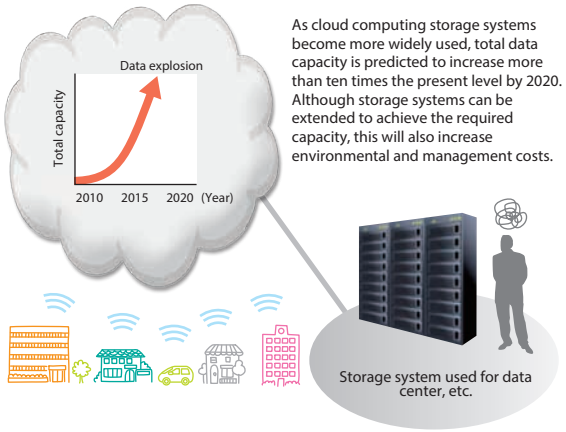


Example 2-1 Saving energy with a tiered storage system

As cloud computing becomes more widely used, energy use also increases due to expansion of total data capacity. To cope with this dilemma, Toshiba Group has developed a tiered storage system that is constructed by combining high-performance Enterprise SSDs*1 and low-cost, large-capacity HDDs*2. This tiered storage system provides access performance approximately 7.5 times higher than a conventional storage system comprised only of Enterprise HDDs. The system also reduces the number of drives by approximately 64% and power consumption by approximately 55%, thereby contributing to cost reduction and mitigation of climate change (percentages calculated by Toshiba).

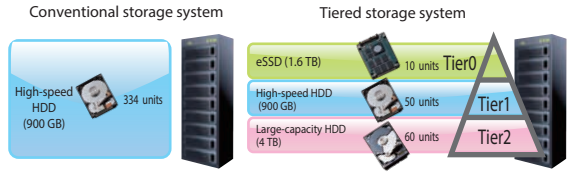
*1 Enterprise SSD : Enterprise Solid State Drive. A flash memory drive for corporate use
*2 HDD : Hard Disk Drive

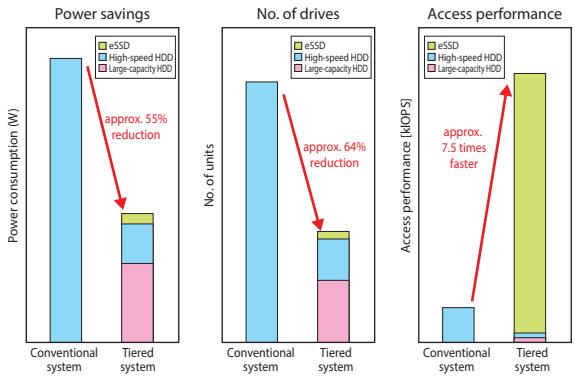
Storage system that supports cloud computing



As cloud computing storage systems become more widely used, total data capacity is predicted to increase more than ten times the present level by 2020. Although storage systems can be extended to achieve the required capacity, this will also increase environmental and management costs.

Benefits of a tiered storage system (calculated for a 300-TB system)





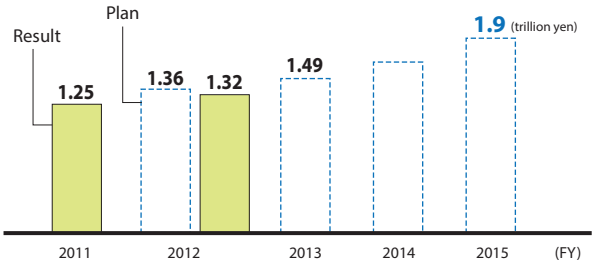
Reducing CO_2 emissions through "Greening by Technology" initiatives

To achieve the goals of Environmental Vision 2050, Toshiba Group is promoting initiatives aimed at providing a stable power supply and mitigating climate change through its low-carbon energy technologies. We are working to develop and promote power generation technologies that use a wide variety of types of renewable energy, including photovoltaic, hydroelectric, geothermal and wind power. At the same time, we are also working to improve the efficiency of thermal power generation technology and to commercialize carbon dioxide capture and storage (CCS) technology, as well as to develop a new thermal power generation cycle that will make it easier to capture CO_2 as well as nuclear power generation technology that ensures a higher level of safety. In the area of power distribution systems, we are striving to develop various technologies based on our know-how acquired through many experimental projects. Our goal is to create smart grids (next-generation power distribution networks) designed to optimize the balance between energy supply and demand by making use of renewable energy. We will further promote the development of smart-grid technologies in order to realize smart communities, which involve water, transportation and healthcare infrastructure (details on page 13).

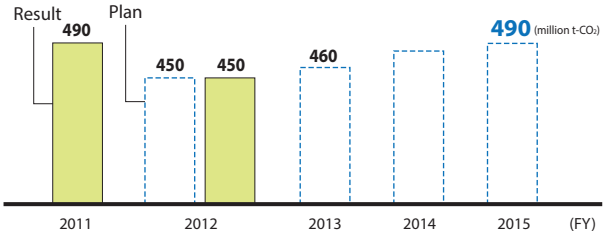
● **Results of FY2012 and future initiatives**

In the Fifth Environmental Action Plan, to start initiatives in the area of energy use, we added a new activity item represented by two indicators: sales of energy-related products and amount of reduction in CO_2 emissions. In FY2012, sales fell short of the goal set in the initial demand plan. However, due to an increase in sales of high-efficiency power generation products, we were able to achieve the goal regarding reduction of CO_2 emissions. We will contribute to providing a stable supply of power and mitigating climate change with the aim of achieving sales of 1.9 trillion yen for energy-related products and a reduction of 490 million tons in CO_2 emissions by FY2015.

■ **Sales for energy-related Products**



■ **Reduction in CO_2 emissions for energy-related products**

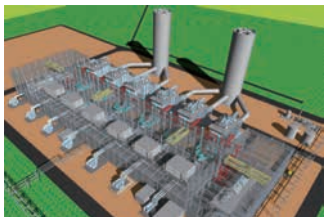


Mitigation of Climate Change by Energy Technologies
Conventional Energy

In order to provide a stable energy supply and mitigate climate change, Toshiba Group is developing various technologies to reduce the amount of CO_2 emitted during thermal power generation as well as making continued efforts to ensure the safety of nuclear power generation.

Combined cycle thermal power generation system with the world's highest level of efficiency (≥ 62%)

Combined cycle thermal power generation is a power generation method that combines gas turbine and steam turbine. By using exhaust gas energy, combined cycle thermal power generation system improves efficiency and reduces CO_2 emissions per unit of electric energy compared with coal-fired conventional thermal power generation. Having developed a power generation system with the world's highest level of efficiency (≥ 62%) (lower heating value basis), Toshiba is now preparing to build a system for Nishi-Nagoya thermal power station that was ordered by the Chubu Electric Power Company. We will continue to further improve efficiency and contribute to reducing CO_2 emissions.



Overview: Combined cycle thermal power plant

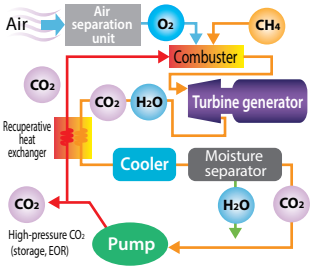
Carbon capture technology: Progress toward commercialization

Toshiba is making progress toward commercializing technology for capturing CO_2 from exhaust gas emitted from thermal power plants. We have conducted verification tests at a pilot plant for a more than 7,300 hours. Based on the know-how acquired through these tests, we are proposing application of the system to potential customers. We are also participating in Plant Biomass Energy Utilization Project of Saga City's Incineration Plant, which aims to capture CO_2 from exhaust gas of the incineration plants to be used for growing agricultural crops and algae.

Pilot plant

Development of a new thermal power generation system that emits no CO_2 into the atmosphere

Toshiba is working to develop the world's first high-efficiency power generation system that operates turbines using CO_2 generated by high-temperature, high-pressure oxygen burning of fuel. CO_2 circulates within the system and is removed to be stored or used for EOR* in addition to being used for power generation. Therefore, CO_2 generated from fossil fuel is not released into the atmosphere. We are currently working to commercialize this system.



* EOR: Enhanced Oil Recovery
Method for injecting high-pressure CO_2 to increase the yield of oil in old oil fields

Striving to the utmost to stabilize the operation of the Fukushima Daiichi Nuclear Power Station and to facilitate decommissioning of the reactors

Working in cooperation with the government and Tokyo Electric Power Company, Toshiba Group is striving to the utmost to stabilize the operation of the Fukushima Daiichi Nuclear Power Station, which was seriously damaged by the March 11, 2011 earthquake, as well as to facilitate the decommissioning of the nuclear reactors. In addition to SARRY™, a treatment system for retained water that continues to operate stably, we have developed and installed a multi-radioactive nuclides removal system (MRRS™) in order to purify the retained water. As part of efforts to decommission the nuclear reactors, we have developed a remote-controlled quadruped robot to survey the inside of the reactor buildings. At the same time, with a view to advancing decontamination, we started using Gammasight™, a gamma camera that visualizes the amount of radiation, as well as proposed the use of a cesium removal system for treating incineration ash.

Installation of a multi-radioactive nuclides removal system (from Tokyo Electric Power Company's homepage)

Quadruped robot

Initiatives for improving the safety of nuclear power generation

The global primary energy demand is predicted to increase to about 1.4 times the current level by 2035.*1 At present, we depend on fossil fuels for about 80% of our energy supplies. Even in the aftermath of the earthquake, there will continue to be demand for nuclear power generation worldwide as a means of ensuring that power supply meets growing needs for electricity without emitting CO_2. In China, Westinghouse Electric Company concluded a contract for building four advanced pressurized water reactors (AP1000™), and is currently building these reactors. In the United States, Westinghouse Electric Company also received a contract for building six AP1000™ reactors, four of which are currently being constructed.

Along with promoting nuclear power generation, countries around the world are also reviewing their safety standards based on the lessons learned from the accident at the Fukushima Daiichi Nuclear Power Station, including making safety assessments and taking measures for severe accidents caused by external factors. Toshiba is cooperating in establishing international safety standards as well as reviewing facility standards. We will reflect these standards in our new plant designs as well as renovations of existing plants and make constant efforts to further improve safety.

*1 Source: World Energy Outlook 2012

Renewable Energy

Toshiba Group is working to develop various power generation technologies that use renewable energy, including photovoltaic, hydroelectric, geothermal and wind power, and to promote the use of such technologies.

Growing into a company that plays a leading role in the use of renewable energy

In order to mitigate climate change and effectively use limited fossil fuel resources, Toshiba Group is working to develop various power generation technologies that use renewable energy, including photovoltaic, hydroelectric, geothermal and wind power, and to promote the use of such technologies.

● Photovoltaic power generation

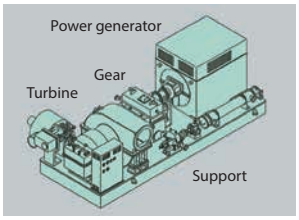
Toshiba Group contributes to reducing CO_2 emissions by providing photovoltaic power generation systems that achieve high levels of efficiency and long-term stability to a wide range of facilities, including power plants, factories and homes.

By using its comprehensive engineering skills acquired through the development of large-scale plants, Toshiba Group offers total support for power companies' development of photovoltaic power generation systems, from system design and coordination through to the start of operation, in order to provide mega solar systems that achieve the highest levels of efficiency and long-term stability. We also make use of our extensive achievements and experience acquired by developing mega solar systems for power companies to develop systems for factories and take an active part in industrial mega solar programs, such as the Tahara Solar-Wind Joint Project, in order to contribute to reducing CO_2 emissions.

In the area of residential photovoltaic power generation systems, we began selling a 250-W solar battery module with the world's highest conversion efficiency, 20.1%, in December 2012. The conversion efficiency of this module has already exceeded the 2020 goal (20%) for service modules set by NEDO in the photovoltaic power generation roadmap. Thanks to its high efficiency, Toshiba's system that uses this globally leading module generates a large amount of power per area, thereby further contributing to reducing CO_2 emissions.

250-W solar battery module

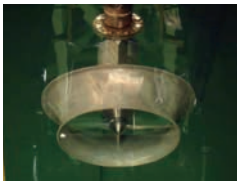
● Geothermal power generation



Compact geothermal power generation system

Toshiba delivers facilities equivalent to 23% of the world's total geothermal power generation capacity. Based on the temperature properties of geothermal sources, we provide optimal geothermal power generation systems, including flush systems, binary systems and flush-binary systems that use the two systems in combination. We also promote the use of Geoportable™, a newly developed 2-MW compact geothermal power generation system. Geoportable™ has a small footprint and contributes to effective use of geothermal energy in locations with only one or two geothermal wells.

● Hydroelectric system



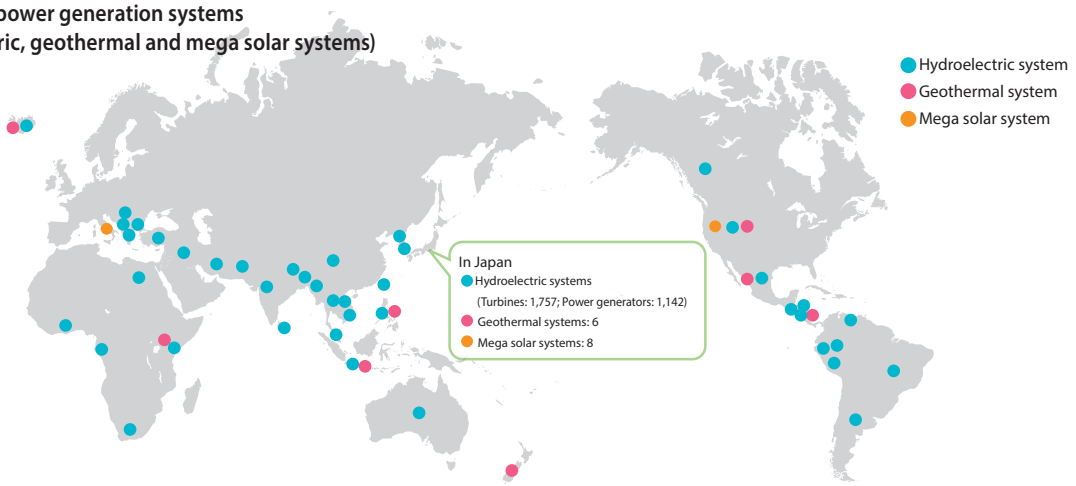
ΣFlow™, a system designed to generate power simply by installing it in a waterway

Toshiba has delivered about 2,000 units of both turbines and generators, totally over 56 GW of hydroelectric power generation facilities, to more than 40 countries around the world. We have the world's best-in-class technologies and achievements for pumped storage systems, in which water is pumped up using surplus power during nighttime and power is generated during daytime to offset power-demand peaks, as well as for adjustable speed pumped storage systems that is effective in power system stabilization. We also take an active part in developing small hydroelectric systems technologies to make effective use of hydroelectric energy. In addition to the Hydro-eKIDS™ series lineup for micro-hydroelectric systems, we have also developed ΣFlow™, a 1-kW hydroelectric system.

● Wind power generation

In addition to providing total solution services from wind turbine development planning, construction and testing through to facility maintenance, Toshiba also actively promotes wind power generation by proposing solutions for managing wind farms comprised of multiple wind turbine and for stabilizing the amount of power generated by combining wind power with storage batteries.

● Delivery of power generation systems (hydroelectric, geothermal and mega solar systems)



Mitigation of Climate Change by Energy Technologies
Power Distribution

Toshiba Group is working to develop various technologies for smart grids, which are next-generation power distribution networks designed to optimize the balance between energy supply and demand, including those for use of renewable energy.

Next-generation energy supply-demand control system developed by Toshiba, which plays a leading role in verification tests

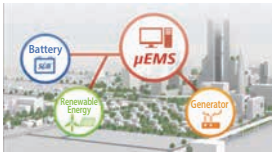
Smart grid (next-generation power distribution network) technologies are attracting attention as technologies for using renewable energy which are likely to be used more widely in the future. The amount of power generated by power generation methods relying on renewable energy sources such as sunlight and wind varies with the weather. Therefore, when renewable energy is introduced in large amounts, the frequency and voltage of power distribution systems will be affected and such fluctuations must be adequately controlled. Toshiba is working to commercialize community-wide energy control systems by combining output control functions that use storage batteries with functions for forecasting energy supply and demand. For example, at a major shopping center in Indiana, the United States, we started an operation designed to stabilize power distribution system by storing electricity generated by photovoltaic power generation in stationary storage batteries and by placing priority on discharge from storage batteries when recharging electric vehicles. Through the introduction of smart grid systems, we will ensure adequate control of photovoltaic power generation systems and storage battery systems in order to realize stable power system operation.

Contributing to the world with a wide range of solutions

Based on the power distribution technologies that it has developed in the past, Toshiba Group provides various smart grid-related solutions.

● **µEMS*: Grid monitoring/control device**

The Micro Energy Management System (µEMS) is one of the core technologies that serves as the brain of a smart grid by monitoring and controlling the local supply and demand of electricity. It improves overall energy efficiency by controlling electricity supply and demand, including absorbing variations in power consumption within a grid and minimizing the effects of these variations on the electricity network. It becomes particularly important to accurately forecast and control electricity supply and demand with the introduction of photovoltaic power generation and new large-scale transportation systems that feature electric vehicles which may change the demand side considerably. In addition to the verification test project conducted by the New Energy and Industrial Technology Development Organization (NEDO) in cooperation with the state government of New Mexico, the United States, Toshiba has also received contracts for other verification test projects and commercial projects in order to carry out optimum energy control initiatives in countries around the world.



* µEMS (Micro Energy Management System)

● **Smart meter**

A smart meter is a high-performance system that collects data on power consumption and transmits the data to power utilities. It is able to collect detailed data on power consumption in buildings and houses and transmits such data to power utilities via the network. Users can also obtain information on their power consumption charges in real time. Smart meters are capable of two-way communication. When receiving an order from the grid monitoring system to reduce power demand (demand response program), the smart meter manages the power consumption of the connected appliances for which consumption is to be reduced. Toshiba has concluded an agreement with Tokyo Electric Power Company for an order of a communication system for smart meters and is using Landis+Gyr AG's international standard communication technologies, which have a proven track record. Toshiba has also acquired the U.S.-based Consert Inc., a company with demand response-related technologies, with a view to accelerating the speed of construction and overseas development of infrastructure for smart grid systems, including DR solutions.

● **Smart battery, a stationary storage battery system**

Smart batteries are part of the stationary storage battery system proposed by Toshiba. By using Toshiba's SCiB™ rechargeable lithium ion battery, Toshiba provides a scalable battery system that covers a wide range of areas, from residences and factories through to power systems. We provide solutions for controlling groups of smart batteries in coordination with power systems, thereby contributing to the realization of a low-carbon society and climate change mitigation.

Large-scale stationary storage battery system

Contributing to environmental protection with a wide range of products

In the area of power distribution systems and power receiving and transforming facilities for users, Toshiba also contributes to climate change mitigation through environmentally conscious products.

● **Top-runner transformer**

Toshiba's products have various features, including not only those for reducing energy consumption to mitigate climate change but also high reliability and compactness as well as safety, disaster resistance and quiet operation. Used by many users, Toshiba's products are contributing to reducing energy consumption.

● **Canola oil-immersed transformer**

This transformer uses canola oil as an insulating oil and reduces CO_2 emissions by the carbon neutral effect.

● **Solid insulated switchgear**

A special high-pressure switchgear that does not use SF_6 gas, which is one of the greenhouse gases; this product is also designed to be compact and to ensure safety by insulating the major circuit with epoxy resin.

Top-runner transformer

Canola oil-immersed transformer

Solid insulated switchgear

Efficient Use of Resources

Toshiba Group promotes 3R (reduce, reuse and recycle) initiatives for products to reduce resource consumption and increase incoming and outgoing recycling.

Toshiba Group's 3R* initiatives for products

In order to create a sound material-cycle society, there is a need to reduce the amount of resources extracted and discharged as waste throughout the product life cycle. Toshiba Group is promoting 3R initiatives for products aimed at reducing waste, increasing incoming recycling and improving outgoing recycling. We are also taking measures to promote design for 3Rs of product and recycling systems and are implementing activities to reduce the environmental impact of our products throughout their life cycles.

* Reduce, reuse and recycle

● Waste reduction

We achieve waste reduction through various means, including reducing the amount of resources used to manufacture products (reducing weight and size) and extending product lives (including upgrades and maintenance).

● Incoming recycling

Incoming recycling refers to the application of recycled materials in products. We will work to improve our incoming recycling rate by increasing our use of recycled materials, plant-derived materials and reusable parts.

● Outgoing recycling

Outgoing recycling refers to the collection and recycling of end-of-life products. By promoting designs for reusing and recycling materials, we improve outgoing recycling while simultaneously improving the system design for recycling end-of-life products further.

Increase in the percentage of resource savings

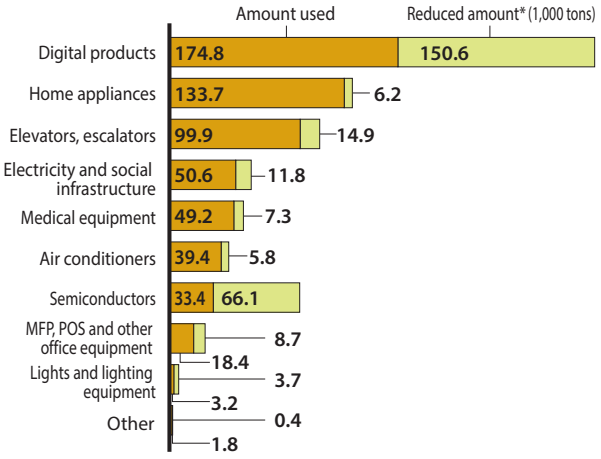
● Results of FY2012

Under the Fifth Environmental Action Plan, we aim to further increase the amount of resources reduced to 1.5 times the FY2010 level. In FY2012, the total amount of resources used in Toshiba Group's major products, estimated by multiplying the amount used for products and packaging materials by the number of shipments, was approximately 600,000 tons. Based on comparisons with the previous product models and adjusting for the expected number of years of use, we also estimated to what extent resource consumption has been reduced for different products. Our comparisons show that we have reduced the use of resources by 280,000 tons, or by 29% compared to previous product models. In addition to reductions in the size and weight of LCD TVs and other digital devices, this result is also due to reductions in industrial product resource consumption, including reductions in the weight of elevators as well as increases in the capacities of magnetic disks (due to reductions in the number of units produced).

● Future initiatives

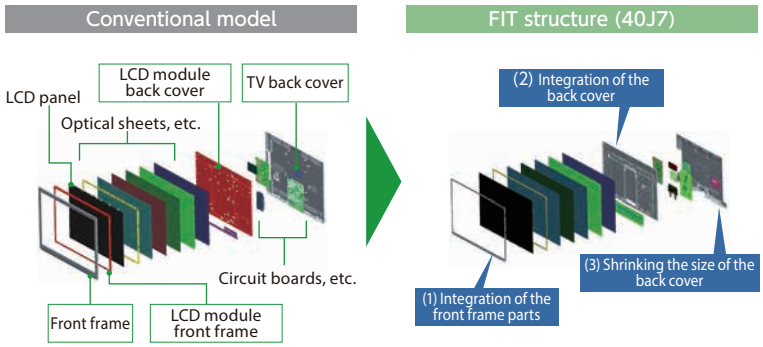
We will continue to promote resource-saving designs for all products with the aim of further reducing resource consumption.

■ Amount of resources used by Toshiba Group and reductions in resource consumption (FY2012)



* Calculated by comparison with the previous product models adjusting for the expected number of years of use

Example 2-2 Resource-saving design for LCD TVs



Toshiba Corp. Digital Products & Services Company

Thanks to Toshiba's unique lightweight design, the 40J7 model for the Japanese market achieved the industry's highest level of resource-saving performance. In addition to enhancing the strength of the front bezel material, we succeeded in reducing the width of the frame by creating the industry's first integrated back cover design. This model, which features reduced body weight and smaller packaging, thereby achieving the highest level of resource-saving performance*, was certified as an Excellent ECP for FY2012.

* Compared to products in the same category at the time of product release

Efficient Use of Resources

Increase in the use of recycled plastics

Toshiba Group is promoting initiatives to recycle plastic waste generated by end-of-life products.

● **Results of FY2012**

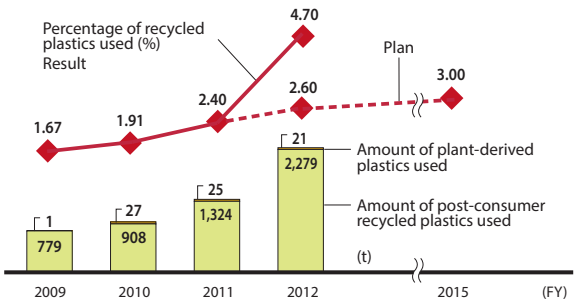
In addition to a significant increase in the use of recycled plastics for washing machines, refrigerators and vacuum cleaners, recycled plastics were also used for office machines (elevators, escalators and systems installed in cars). As a result, use of recycled plastics increased to 2,300 tons in FY2012. The percentage of recycled plastics*1 used in Toshiba Group products was 4.7%, greatly exceeding the target of 2.6%. We are also using plant-derived plastics to manufacture some plastic parts for LCD TVs and POS systems.

● **Future initiatives**

In order to further increase the percentage of recycled plastics used in our products, we will secure a supply of waste plastics as well as develop new uses for recycled plastics in all product groups.

*1 [Amount of recyclable plastics] / [Amount of plastics used for products] × 100

■ **Amounts and percentages of recycled plastics used**



Post-consumer recycled materials vary in quantity available and quality depending on how they are obtained. At times, we may need to use virgin materials due to insufficient supply or quality problems.

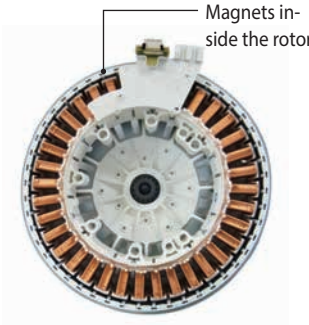
Initiatives regarding rare earths and rare metals

● **Results of FY2012**

Toshiba Group is working to reduce risks, such as increases in the prices of rare earths and rare metals and restrictions on the export of such materials. Among the rare earths used in home appliances, neodymium (Nd) and dysprosium (Dy), which are used as materials for permanent magnets, must be given high priority in consideration of the fact that they are used in large quantities. We adopted the grain boundary diffusion method for rare earth magnets used in air conditioner compressors ahead of other companies and reduced the use of Dy by approximately 50%. In addition to using ferrite magnets that contain no rare metals as alternatives to neodymium magnets in washing machine motors, we have also developed samarium-cobalt magnets that contain no dysprosium. We will continue to make efforts to reduce and eliminate the use of dysprosium.

■ **Example of product parts where an alternative material is used**

Air conditioner compressor



GDD motor for washing machines

Example 2-3 Use of recycled plastics in refrigerators

Toshiba Home Appliances Corporation

The percentage of recycled plastics used in Toshiba's VEGETA/GR-F56FXV refrigerator has significantly increased compared to the equivalent model for the previous year (GR-E55FX). The main reason for this increase is that recycled plastics were used for the parts embedded in polyurethane and the parts inside the machine chamber that do no affect product appearance. In addition to design improvements, improvements in recycling processes, including an increase in the supply, development of new recycled materials, and transport to overseas production sites, have made it possible to use such recycled products.

1 Initiatives for product design
Assessment of the usability of recycled plastics for different parts, selection of parts made of recycled plastics, and expansion of their use

2 Initiatives at recycling plants
Manual dismantling of products to retrieve parts made of a single material and improvement in the selection of high-purity plastics from mixed broken-down products

3 Collaboration with plastic recyclers
Adjustment of physical properties (thermal resistance, strength, color, etc.) to develop and manufacture recycled materials suited for different uses

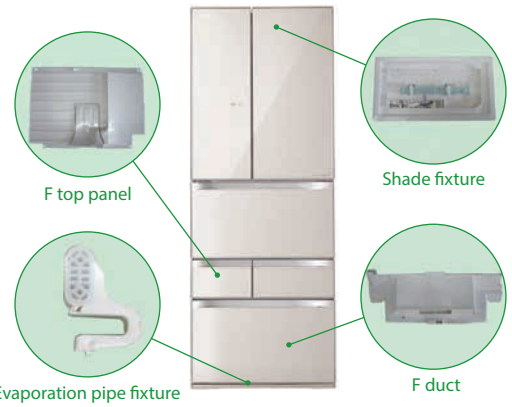
4 Transport to overseas production sites
Establishment of overseas recycled plastic supply routes

Securing of a supply of recycled plastics

Expansion of the use of parts made of recycled plastics

GR-F56FXV (FY2012 model)

VEGETA
Toshiba Refrigerator/Freezer (VEGETA)



Initiatives regarding the assessment of water footprints

The water footprint (WF) of a product is an assessment of its effects on water resources throughout its life cycle. Toshiba has started to estimate WFs for its products, an industry first, in order to assess the effects of its business on water resources.

● **Results of FY2012**

In last year's report, we presented the WFs we estimated for our refrigerators and washing machines with dryers. In addition, we assessed these products' contributions to reducing water consumption in homes. We also estimated water consumption of paper reuse systems. We quantitatively showed that reusing paper reduces not only CO_2 emissions but also water consumption.

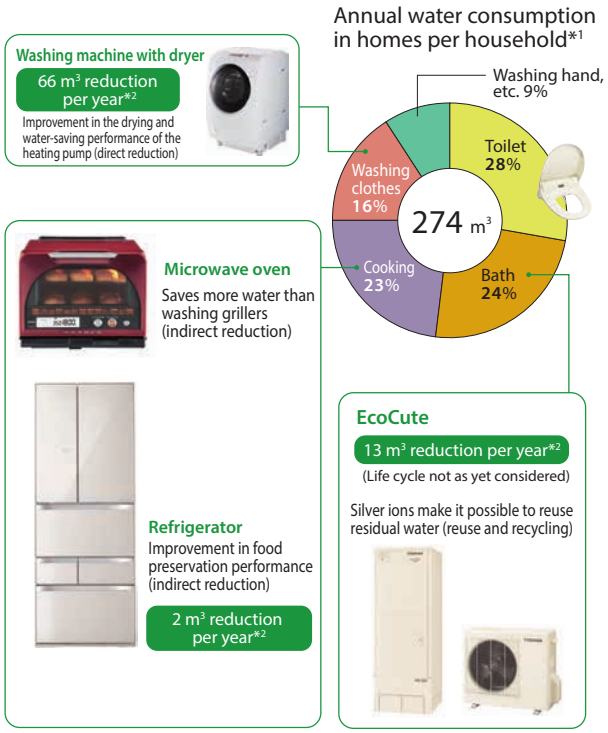
● **Contribution to the establishment of international standards**

Standards for principles and requirements regarding WFs are being established in ISO/TC207 (environmental management)/SC5 (life cycle assessment). Toshiba Group participated in a working group meeting held in June 2013 in the Republic of Botswana as an international expert member, presenting its opinion as a company in order to help establish more practical procedures.

● **Future initiatives**

We will continue to improve our method for assessing environmental effects and to expand the scope of assessment. At the same time, we will also take an active part in establishing international standards.

■ **Examples of reduction in water consumption in homes**



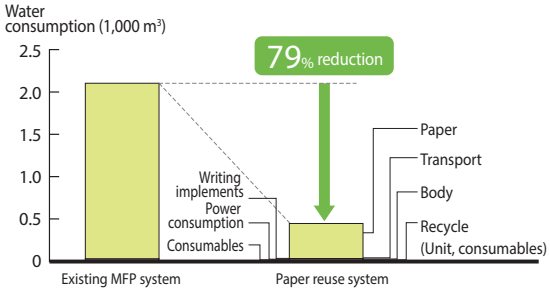
*1 Calculated by Toshiba based on "FY2011 Japan's Resources"
*2 Compared with Toshiba FY2000 model

Example 2-4 Estimation of the WF of a paper reuse system

Toshiba TEC Corp.

Paper reuse system

This paper reuse system, which removes colors, sorts paper, and creates electronic data all at the same time, was certified as an Excellent ECP in FY2012. By enabling reuse of paper, the system reduces water consumption by 79% throughout its life cycle.



<Assessment conditions>
An MFP system is used for five years to print 540,000 A4-size sheets of paper.
Each sheet of paper is used five times. 40 users use 0.5 dedicated writing implements per man-month.
See the reference material* for detailed information, including per-unit production databases used for the assessment.
* Yokoyama et al. (2013), 8th Conference of the Institute of Life Cycle Assessment, Japan, A1-07

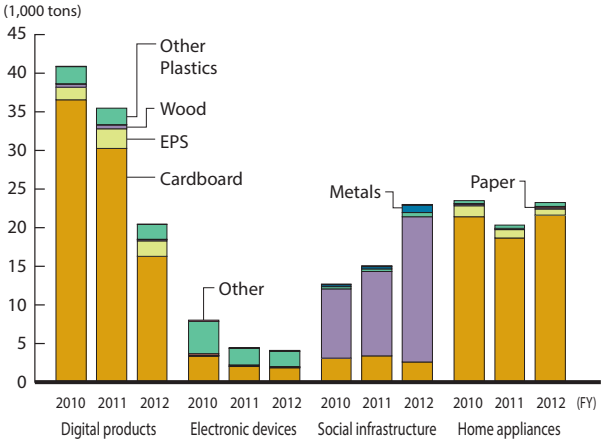
3R initiatives for packaging material

We will streamline the use of packaging as well as product materials to reduce environmental impacts throughout their entire life cycles.

● **Results of FY2012**

The amount of packaging materials used by Toshiba Group in FY2012 was 70,000 tons. As the number of shipments increases, the amount of packaging materials used also tends to increase. Nevertheless, we will work to reduce the use of packaging materials in accordance with the characteristics of each business area and product category through various measures, such as reducing packaging volume, enlarging the size of returnable (reusable) cases and using materials with low environmental impact.

■ **Amount of packaging materials used by Toshiba Group**



Management of Chemicals in Products

In addition to ensuring proper management of chemicals contained in products, Toshiba Group also promotes communication of information on such chemicals in order to minimize risks to human health and the global environment.

Initiatives for the management of chemicals contained in Toshiba Group products

Toshiba Group manufactures and sells a wide range of products, from electronic parts (e.g., semiconductors and hard disks) to home appliances (e.g., refrigerators, washing machines and air conditioners) to audio-visual products (e.g., PCs and TVs) and social infrastructure products (e.g., medical equipment, transformers and weather radars). Various chemicals are used to manufacture these products. In recent years, regulations on the management of chemicals have become increasingly strict in countries around the world. For example, the EU revised the RoHS Directive*1 in January 2013 and expanded the restriction of certain hazardous substances to all electric and electronic products. In addition to the EU, countries such as Vietnam, China, Jordan and India are preparing to implement similar directives. (For details, see the figure below.) The similar movements are taking place in countries around the world.

Against this background, we are collaborating with the Local Environment Division to collect, aggregate and analyze the latest information on relevant regulations in order to implement appropriate measures for ensuring legal compliance. Furthermore, Toshiba Group has its own standards for the management of chemicals; these standards are applied worldwide to all its products so that customers can use Toshiba products with a sense of security.

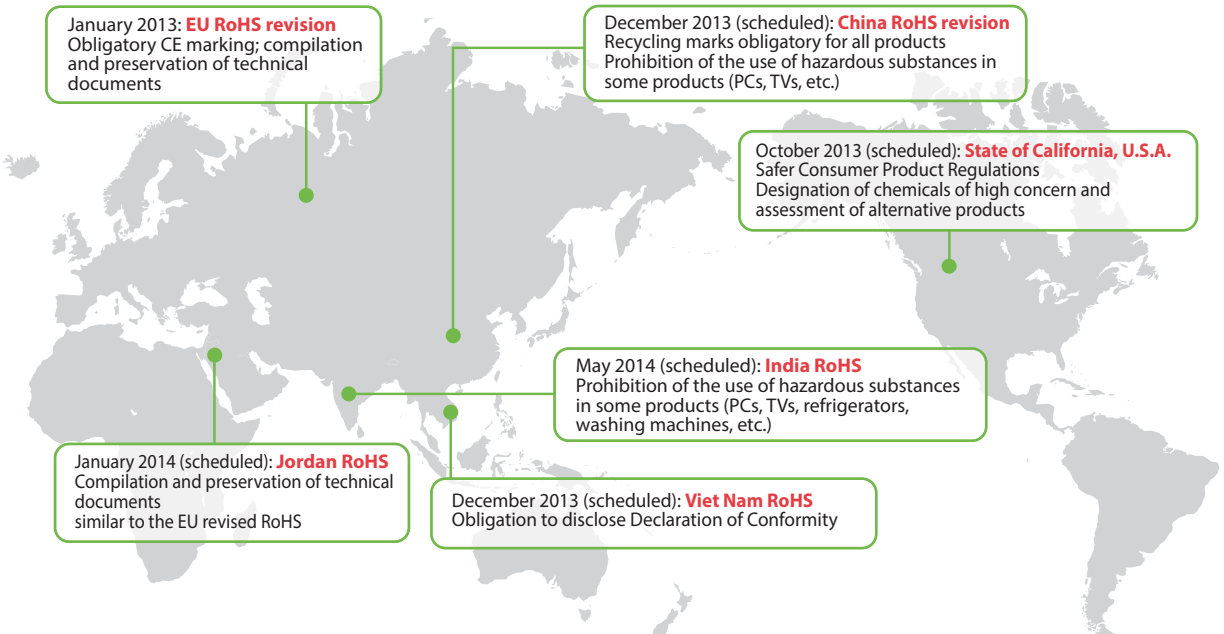
With a view to achieving the goal of minimizing risks involved in the use of chemicals, which was proposed and adopted at the World Summit on Sustainable Development (WSSD*2) and other conferences, Toshiba Group has been promoting initiatives to eliminate the use of specified chemicals, to reduce the amount of chemicals contained in products and to use substitute materials. As part of these initiatives, we have selected chemicals whose use is restricted by typical laws in Japan and elsewhere and chemicals that Toshiba Group is managing on voluntary basis and created the Toshiba Group Environment-related Substance List in order to manage the chemicals contained in products by grouping substances into two categories: rank A (prohibited substances) and rank B (managed substances). (For details, see the table below.)

■ Toshiba Group Environment-related Substance List

Category	Definition
Rank A (Prohibited Substances)	Substances whose presence is prohibited in procurement items (including packaging) in the Toshiba Group. Substances whose use in products (including packaging) is prohibited or restricted by domestic and foreign laws and regulations.
Rank B (Managed Substances)	Substances whose environmental impact should be reduced, based on their actual usage, via reduction of use and substitution, or recovery and detoxification in a closed system.

Due to industry trends and other circumstances, details of the management of chemicals (substances managed, management levels, threshold values, etc.) may differ among Toshiba Group companies.

■ Examples of regulations on chemicals contained in products in different countries



*1 RoHS (Restriction of certain Hazardous Substances) directive: A directive which limits the use of specified hazardous substances in electrical and electronic devices
*2 WSSD: World Summit on Sustainable Development
*3 Regulations on PVC and BFRs in major countries:
Many national governments regulate PVC when used as an additive to soften resins (generally known as a "plasticizer").

Example 1 : Phthalate esters contained in PVC (DEHP, BBP, DBP, DIBP) are designated as substances to be authorized or to be restricted (under examination) in the EU REACH regulation and the priority hazardous substances in the revised RoHS directive.
Example 2 : Organic tins contained in PVC (DOP and DBP): the EU REACH regulations (substances to be controlled)
Example 3 : In addition to PBDEs and PBBs, which are forbidden as flame retardants in the RoHS directive, hazard assessments of various other BFRs are underway in countries around the world.

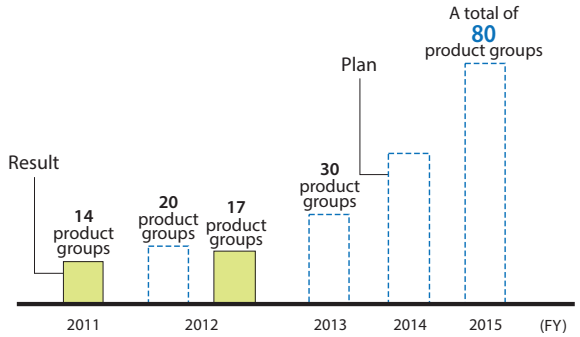
Promoting the use of alternatives to PVC/BFRs

● Results of FY2012 and future initiatives

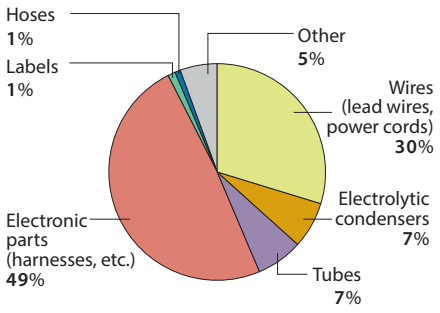
In the Fifth Environmental Action Plan, which started in FY2012, we set a goal of using substitute materials to replace polyvinyl chloride (PVC) and brominated flame retardants (BFRs) contained in products across a total of 80 product groups in FY2015.

In FY2012, we studied the amounts of PVC and BFRs contained in Toshiba Group products to formulate a reduction plan for the future. Unfortunately, assessing the reliability of alternative parts took significant time, and as a result, we were able to use substitute materials for only 17 product groups, falling short of the goal (20 product groups). However, we have successfully reduced the use of PVC and BFR in some of our newly created products, such as the OCR scanner. (See the examples below.)

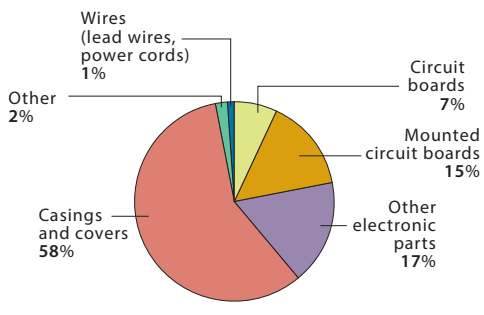
■ Product groups covered by the PVC/BFR substitution initiative



■ Use of PVC at Toshiba Group companies (Results for FY2012)



■ Use of BFRs among Toshiba Group companies (Results for FY2012)



Initiatives for communication of information on chemicals throughout the supply chain

REACH*4, the European regulations on chemicals that came into force in June 2007, mandates development of a system for effectively disclosing and communicating information on chemicals contained in parts, materials, and products throughout the supply chain. Toshiba Group has actively adopted the JAMP*5/AIS*6 format, the industry's standard survey format, to promote effective communication of information on chemicals contained in products throughout the supply chain.

To promote business activities aimed at reducing the environmental impacts of hazardous chemicals and the risks involved in using them, it is essential to obtain the cooperation of suppliers, our business partners, for those activities for which the supply chain as a whole must be targeted. We request the understanding and cooperation of our suppliers in our green procurement initiatives aimed at creating a sustainable society. We also request that they make environmental assessments and conduct research on and evaluations of the chemicals contained in the materials and parts they supply and report the results of independent assessments on their level of green procurement (according to Toshiba's standards) in accordance with ISO 14001.

*4 REACH (Registration, Evaluation, Authorization and Restriction of Chemicals): Regulations on registration, evaluation, authorization and restrictions related to chemicals
*5 JAMP: Joint Article Management Promotion-consortium
*6 AIS (Article Information Sheet): JAMP-recommended information sheet used to communicate information on chemicals contained in products

■ Suppliers' levels of green procurement for FY2012

(%)

Rank S	Rank A	Rank B	Lower than Rank B
85.4	11.8	1.8	1.0

Note: Rank S (Priority), Rank A (Excellent), Rank B and Lower than Rank B (Improvement requested)

Example 2-5 OCR Scanner S3500

Toshiba Solutions Corporation

Desktop OCR scanner with the highest speed*1 in Japan (200 B&W, A4-size horizontal sheets per minute). This product complies with the International Energy Star Program standards and has the industry's lowest level of standby power consumption. It also contains reduced amounts of chemicals (e.g., mercury, PVC and BFRs) compared to previous models.

*1 Internal data as of July 2013

● Mercury-free

Light Emitting Diodes (LEDs) are used as light sources to eliminate use of mercury and to extend product lives.

● PVC/BFR-free

The design reduces the discharge of hazardous substances during incineration by eliminating use of PVC (polyvinyl chloride) for the AC cable and use of BFRs (brominated flame retardants) for the printed circuit board.

Product Eco-efficiency

Eco-efficiency

The concept of eco-efficiency was developed to realize a sustainable society by providing products and services designed to improve the quality of life while reducing environmental impact.
The Factor indicates the degree of improvement in eco-efficiency by comparing to a benchmark period. Factor values of 4 and 10 are widely known as the targets required to realize a sustainable society. The greater its Factor, the more a product contributes to creating value and reducing environmental impact through technological progress and innovation.

$$\text{Eco-efficiency} = \frac{\text{Value of product/service}}{\text{Environmental impact}}$$

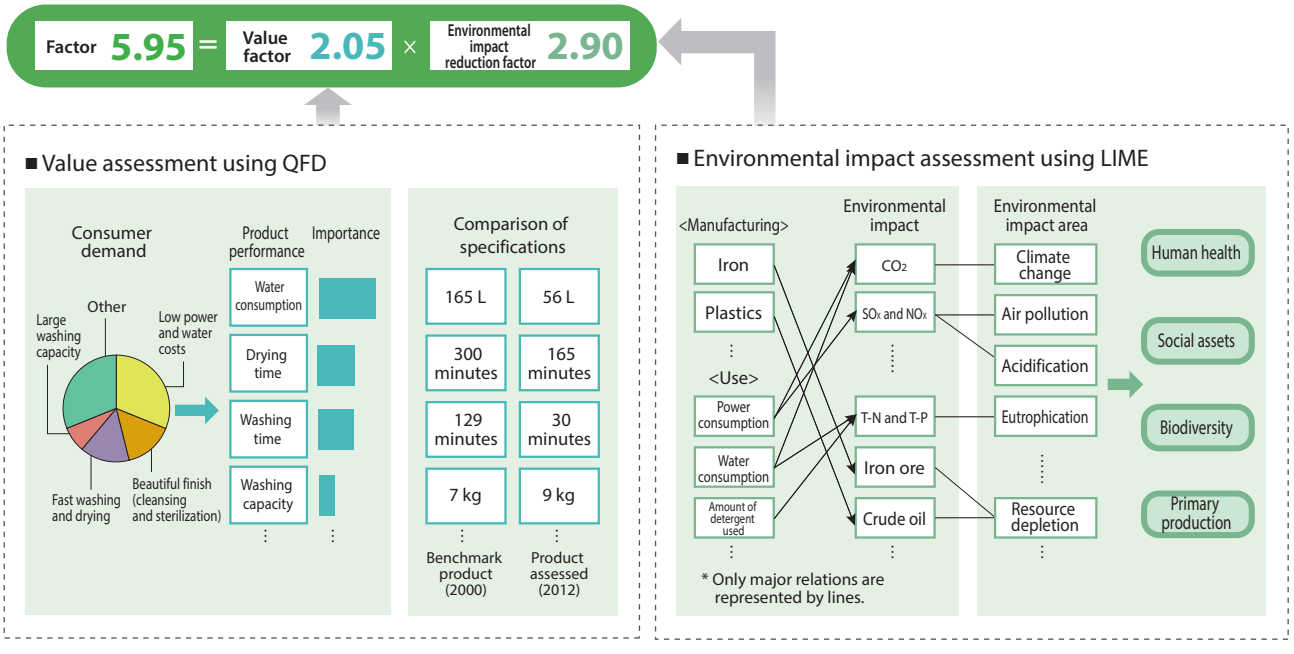
$$\text{Factor} = \text{Degree of improvement in eco-efficiency compared to the benchmark period}$$

Toshiba Group originally developed a method for calculating eco-efficiency to introduce an indicator that enables overall assessment of products' environmental friendliness. Comprehensive activities for creating ECPs that are aimed at increasing the Factor are part of the Factor T initiative, so named after Toshiba's initial. Factor T has the following characteristics: ① it is expressed as a multiplication of a value factor and an environmental impact reduction factor; ② it quantifies the value of a product or service (numerator) using QFD; ③ it assesses environmental impact (denominator) using LIME (*).

For detailed information about the calculation method and its application to Toshiba products, see the explanatory materials ("[Factor T] Reader" and "Encouragement of [Factor T]."
http://www.toshiba.co.jp/env/jp/factor_t/index_j.htm (in Japanese only)
http://www.toshiba.co.jp/env/jp/report/pdf/factor_t2012_2.pdf (in Japanese only)

These materials were awarded the Bronze Award in the 2013 Nikkei BtoB Advertising Award's product catalog (general) category.

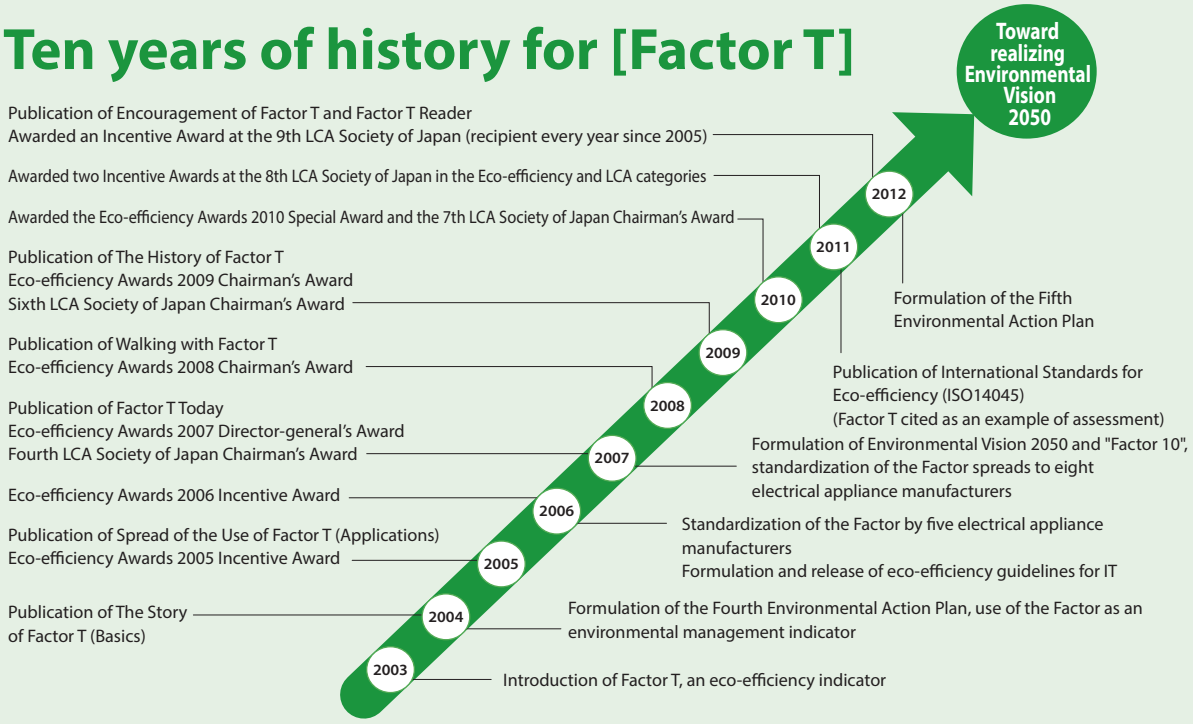
■ Factor T



* LIME: One of the leading environmental assessment methods in Japan, LIME (Life-cycle Impact assessment Method based on Endpoint modeling) was developed by the Research Centre for Life Cycle Assessment, National Institute of Advanced Industrial Science & Technology, an independent administrative institution.

The Factor T initiative was started in 2003. Under this initiative, we have carried out various activities involving parties inside and outside Toshiba Group, including the announcement of Environmental Vision 2050, formulation of Environmental Action Plans, conferences with competitors aiming at standardization, and contribution to the establishment of ISO standards. Toshiba Group will continue to pursue the Factor T initiative in order to work toward realizing a sustainable society by incorporating new knowledge.

Ten years of history for [Factor T]



Doubly awarded at the Life Cycle Assessment Society of Japan for the development and promotion of advanced Eco-efficiency assessment methods

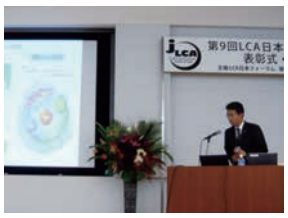
In addition to developing and promoting eco-efficiency assessments appropriate for different business areas, Toshiba Group is also working to address new international trends ahead of other companies.

● **Initiative in the area of medical equipment**

Toshiba Medical Systems Corporation has been working to create eco-designs in the area of medical equipment. In the design of medical equipment, the highest priority is placed on clinical performance. This priority must be balanced against other requirements, such as those for energy-saving, resource-saving and space-saving performance. When installing equipment, increased product sizes often necessitate that building walls be knocked down or hallway doors be removed. For this reason, it is also important to reduce the waste generated during delivery and installation of such equipment. Toshiba Medical Systems Corporation has created a system in which competitors' products are always chosen as benchmarks and goals are set for environmental performance during the product planning and development stages. The company also takes an active part in disclosing information about improvements in products' environmental performance as product features, thereby promoting communication with customers. At the 9th LCA Society of Japan held in FY2012, Toshiba was awarded the Incentive Award for its activities promoting environmental management in the area of medical equipment through life cycle assessment.

● **Initiative in the water related area**

From early on, the Environment Management Division has focused on the importance of water resources, which have recently been attracting attention as a critical environmental issue, and has been considering incorporating water resources into conventional LCA. We are actively promoting the use of information on water resources within group companies and also publicizing the importance of such information through various activities, including compiling data on water consumption per unit production using input-output tables, participating in the activities of external working groups, and publishing the water footprints (WFs) of products and services at Eco-products Exhibitions and in our environmental reports. In our home appliance case studies, we estimated reductions in WF resulting from improvements in the water-saving performance of washing machines with dryers and the food preservation performance of refrigerators, thereby adding value to products. We also participate in external study meetings to review water consumption management at production sites, thereby responding to international trends to develop in-house measures in a timely manner, including enhancing water management at production sites in water-stressed areas. For these water footprint activities, Toshiba Group was awarded a second Incentive Award.



● **Looking back on the awards ceremony**

Toshiba Group has received awards from the LCA Society of Japan six times in five consecutive years. We believe these results reflect our continued efforts to assess eco-efficiency using our Factor approach. We will continue our group-wide efforts to develop and promote eco-efficiency assessment.

Chapter 3

High-efficiency Manufacturing

We are pursuing world's lowest level of environmental impacts in manufacturing.

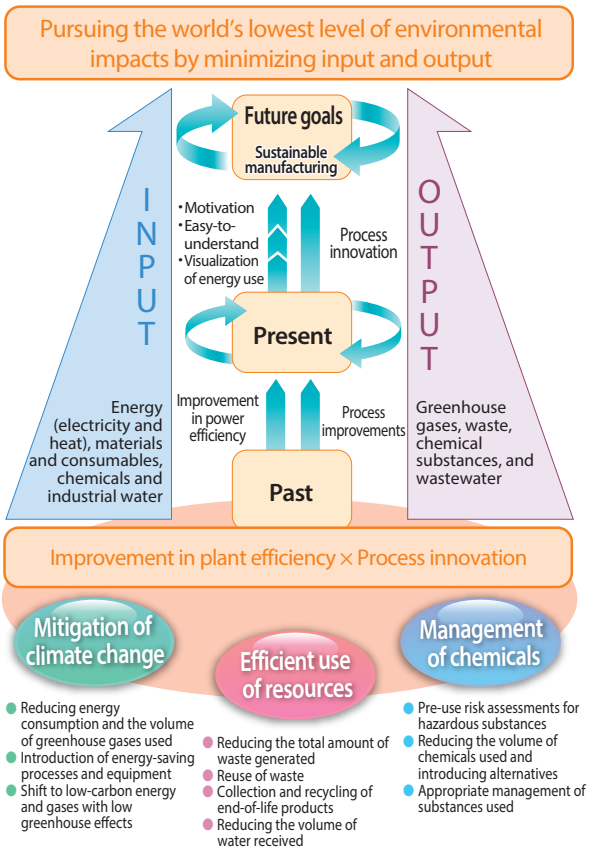
INDEX

Summary of activities in FY2012

Pursuing the world's lowest level of environmental impacts

Toshiba Group is promoting Greening of Process, an initiative for high-efficiency manufacturing, which aims to minimize resource inputs in production processes in Japan and abroad, eliminate waste in manufacturing processes, and reduce to a minimum emissions into the atmosphere and waters, thus achieving the world's lowest level of environmental impact. Specifically, this initiative consists of two efforts: "improvement of plant efficiency," which refers to efforts to grasp energy consumption appropriately in order to ensure effective improvement of equipment operation and introduce high-efficiency equipment, and "process innovation," which aims to achieve sustainable manufacturing in collaboration with all units involved in manufacturing.

■ **High-efficiency manufacturing strategy**



Toshiba Group is promoting the Greening of Process initiative from three perspectives: mitigation of climate change, effective use of resources, and management of chemical substances. In terms of climate change, the CO_2 emission coeffcient for electricity in Japan has deteriorated considerably due to the effects of the March 11, 2011 Great East Japan Earthquake, and indications are that this is greatly affecting Toshiba Group, where electricity-derived CO_2 emissions account for a majority of total GHG emissions. Toshiba Group is actively taking energy conservation measures on a company-wide scale. We will grasp energy consumption in real time (visualization), analyze data (easy-to-understand), and take actions for improvement (motivation). Especially in FY2013, the Group plans to reduce CO_2 emissions by approximately 60,000 tons by concentrating efforts on semiconductor plants, which account for nearly half of the Group's total GHG emissions. In terms of effective use of resources, we will continue to make maximum use of our ingenuity to reduce the total volume of waste generated and final waste disposal volumes as well as strive to use valuable water resources effectively. As for management of chemicals, the Group will make efforts to reduce the amount of targeted substances handled and discharged mainly through the introduction of alternative substances and process improvements. In the future, we will endeavor to achieve the world's lowest level of environmental impacts by realizing high-efficiency manufacturing that enhances our business competitiveness.

Increasing business process eco-efficiency to 1.5 times the FY2000 level in FY2015

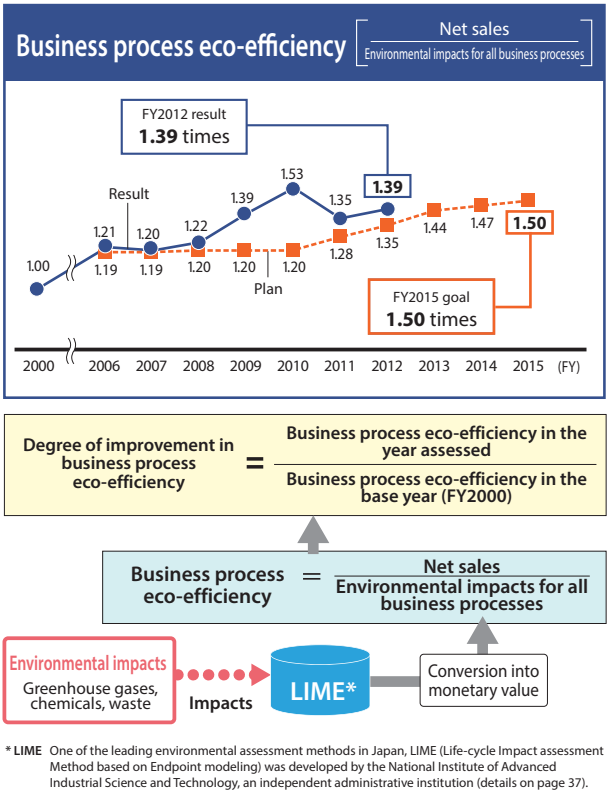
Toshiba Group, which comprehensively assesses the effects of environmental impacts in its business operations, views business process eco-efficiency as an important indicator of high-efficiency manufacturing and is working to reduce environmental impacts in manufacturing processes.

● Results of FY2012

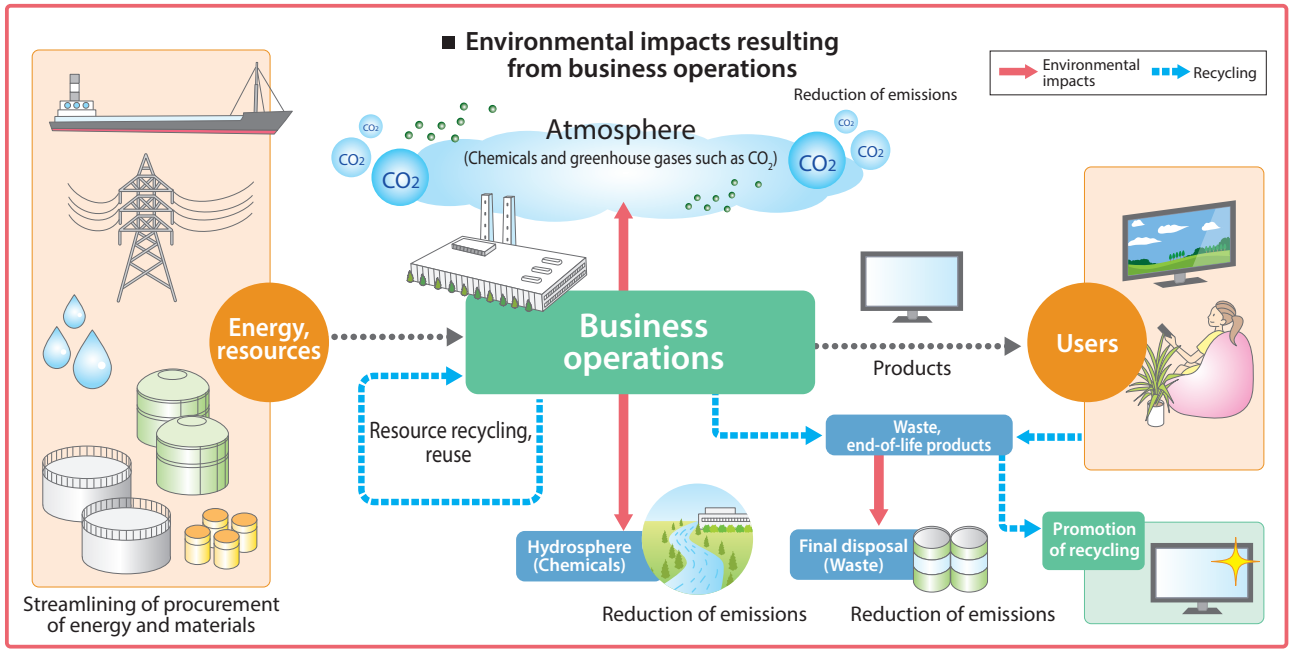
Sales decreased in FY2012 compared to the previous year. However, due to reductions in GHG emissions through energy conservation efforts and other factors, business process eco-efficiency improved compared to the previous year to 1.39 times (in comparison with the FY2000 level), exceeding the goal of 1.35 times.

● Future initiatives

The goal of the Fifth Environmental Action Plan is to increase business process eco-efficiency to 1.5 times compared to the FY2000 level in FY2015. To achieve this goal, Toshiba Group will work to reduce environmental impacts according to the nine specific targets (details on page 12).



* **LIME** One of the leading environmental assessment methods in Japan, LIME (Life-cycle Impact assessment Method based on Endpoint modeling) was developed by the National Institute of Advanced Industrial Science and Technology, an independent administrative institution (details on page 37).



Mitigation of Climate Change

In order to contribute to the mitigation of climate change, Toshiba Group strives to curb CO_2 emissions resulting from product logistics, to reduce greenhouse gas (GHG) emissions, and to analyze CO_2 emissions throughout the entire supply chain.

Reducing total GHG emissions

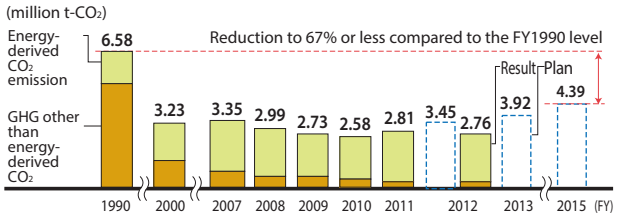
Toshiba Group proactively installed systems to collect and/or remove sulfur hexafluoride (SF_6), which is used to insulate heavy electric machinery, and perfluorocarbons (PFCs), which are used to produce semiconductors. As a result, in FY2000, the Group nearly halved the total amount of GHG emitted* compared to the FY1990 level, and in subsequent years, GHG emissions continued to decrease as the Group steadily took measures to improve its production processes. Meanwhile, energy-derived CO_2 emissions resulting from the use of electricity, which peaked in FY2007, when production reached its highest level, have been reduced since FY2008 by taking energy conservation measures at all business and production sites, including ones overseas, restructuring production sites, and introducing renewable energy proactively.

*Six types of greenhouse gases targeted for reduction in the Kyoto Protocol: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)

● Results of FY2012 and future initiatives

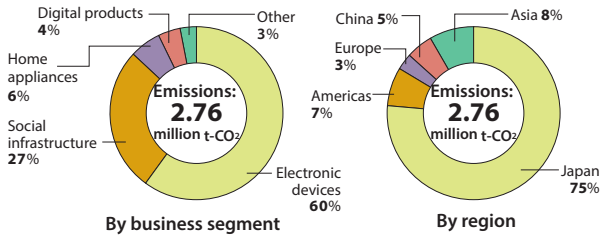
In FY2012, Toshiba Group reduced GHG emissions other than energy-derived CO_2 by 79% compared to the FY2000 level mainly by installing PFC removal equipment. Meanwhile, electricity consumption decreased compared to FY2010 due to proactive electricity conservation measures, including capital investments, but energy-derived CO_2 emissions increased as in 2011 because of a deteriorating CO_2 emission coefficient for electricity due to the effects of the Great East Japan Earthquake. Nevertheless, CO_2 emissions decreased compared to the previous year. The CO_2 emission coefficient for electricity is expected to deteriorate in the future, but Toshiba Group will continue to make steady efforts to reduce total GHG emissions by investing proactively in high-efficiency equipment. The Group's goal is to reduce total GHG emissions to 3.92 million tons or less (60% compared to the FY1990 level) in FY2013 and 4.39 million tons or less (67%) in FY2015.

■ Changes in total GHG emissions



* The CO_2 emissions coefficient for electricity is used to calculate energy-derived CO_2 emissions (in Japan, 3.50 t-CO_2/10,000 kWh in FY2010, 4.76 t-CO_2/10,000 kWh in FY2011, and 4.87 t-CO_2/10,000 kWh in FY2012). Overseas electricity is based on the GHG Protocol.

■ Breakdown of GHG emissions (FY2012)



Reducing energy-derived CO_2 emissions

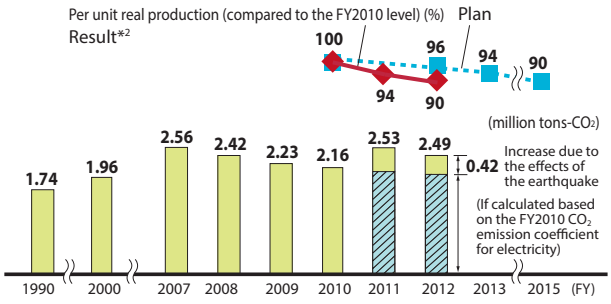
● Results of FY2012

Under the Fifth Environmental Action Plan, in order to assess CO_2 emissions measures consisting mainly of those for electricity conservation, the Group uses energy-derived CO_2 emissions per unit production by fixing the CO_2emission coefficient to FY2000. In FY2012, as a result of measures such as energy-saving investments, proactive electricity conservation, and reductions in power consumption by production adjustments, Toshiba Group was able to reduce energy-derived CO_2 emissions per unit production to 90% of the FY2010 level, thus reducing such emissions by 10%, which is six percentage points higher than the initial goal. Meanwhile, affected greatly by the deterioration of the CO_2 emission coefficient for electricity due to the earthquake, total energy-derived CO_2 emissions increased substantially to 2.49 million tons (0.33 million-ton increase compared to the FY2010 level). Nevertheless, compared to the previous year, total emissions decreased by 0.4 million tons.

● Future initiatives

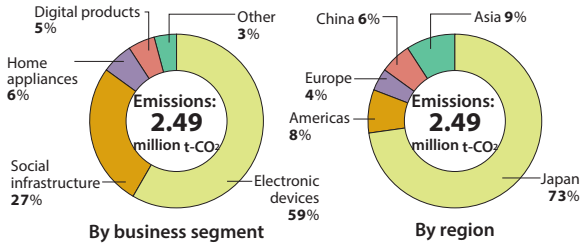
In order to meet growing market demand, Toshiba Group plans to construct new plants, mainly those for manufacturing semiconductors. Therefore, energy-derived CO_2 emissions are likely to increase in the near future. The Group will continue its efforts to reduce CO_2 emissions per unit production by 10% compared to the FY2010 level in FY2015 by adopting a variety of energy conservation measures, including performing energy-saving diagnoses and investing in energy-saving facilities.

■ Changes in energy-derived CO_2 emissions per unit production



* The CO_2 emissions coefficient for electricity is used to calculate energy-derived CO_2 emissions (in Japan, 3.50 t-CO_2/10,000 kWh in FY2010, 4.76 t-CO_2/10,000 kWh in FY2011, and 4.87 t-CO_2/10,000 kWh in FY2012). Overseas electricity is based on the GHG Protocol.
*2 The electricity coefficient is fixed to that of FY2010.

■ Breakdown of energy-derived CO_2 emissions (FY2012)



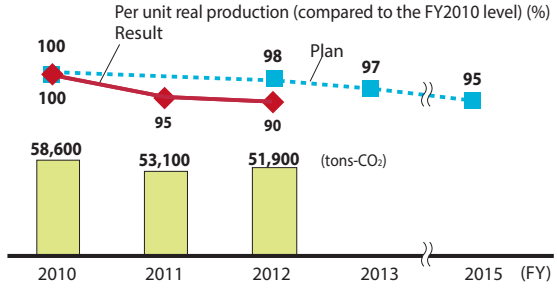
Reducing CO_2 emissions associated with product logistics

● Results of FY2012 and future initiatives

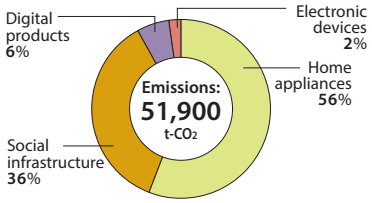
In FY2012, Toshiba Group strove to reduce energy consumption during product logistics by taking various measures, including improving load factors when transporting products, applying modal shifts to a wider range of products, and shortening the transport distance by restructuring distribution centers. As a result, it reduced CO_2 emissions per unit production by 10% compared to the FY2010 level, exceeding the initial target for FY2012 by 8%.

In the future, Toshiba Group will continue its efforts to reduce CO_2 emissions associated with product logistics with a view to reducing CO_2 emissions per unit production by 5% compared to the FY2010 level in FY2015.

■ Reduction in CO_2 emissions associated with product logistics in Japan



■ Breakdown of CO_2 emissions associated with product logistics in Japan in FY2012



By business segment

■ CO_2 emissions associated with overseas and international logistics (approximate figures)

Toshiba Group collects data on overseas and international logistics for the group and calculates approximate CO_2 emissions associated with such logistics.

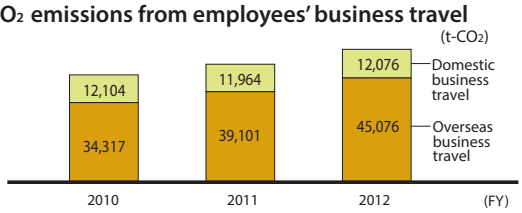
■ Total: 466,000 t-CO_2 (FY2012)
(Breakdown) Logistics in overseas countries: 27,000 t-CO_2
International logistics: 439,000 t-CO_2

Reductions in CO_2 emissions from employees' business travel

Toshiba Group is working to analyze CO_2 emissions resulting from employees' business travel. The table below indicates CO_2 emissions from employees' business travel by air from FY2010 to FY2012.

In FY2012, CO_2 emissions increased due to a larger number of employees traveling on a business trip to ensure the safety of nuclear power stations and to launch new businesses.

■ CO_2 emissions from employees' business travel



* CO_2 emissions per unit passenger transport × Distance of travel × Seat class coefficient (overseas business travel only) (from the Japanese Ministry of the Environment's guidelines)

Use of renewable energy

Toshiba Group is continuously striving to use renewable energy for a wider range of its operations. In FY2012, the Group used 29,645 MWh's worth of renewable energy. This means that the Group reduced about 14,000 tons* of CO_2 emissions. Toshiba Corp. has also used a green power system since January 2005 and has since been purchasing 2,000 MWh of electricity under a green power certificate annually.

* Calculated based on 4.76 t-CO_2/10,000 kWh

Example 3-2 Introduction of a solar power generation system

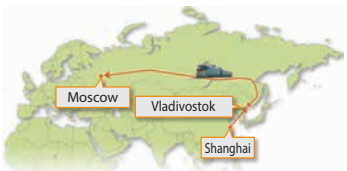
Toshiba America Information Systems, Inc.

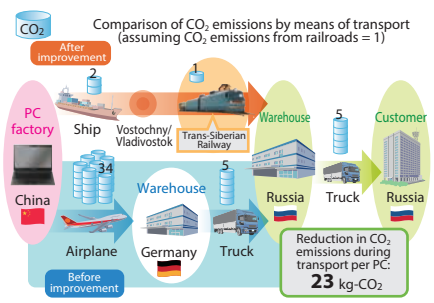
In order to mitigate climate change, Toshiba America Information Systems, Inc. has installed a solar power generation system in its plant parking lot. The company performed a simulation before constructing the power generation system and decided to use its own high-transformation-efficiency inverter, which it found to be best suited for the system. As a result, the company was able to construct a system with a standard generating capacity of 105 kW (using a total of 700 power generation panels) and an annual power generation output of 155 MWh. As a result, the company is able to reduce annual CO_2 emissions by approximately 88.9 tons. This system also significantly contributed to the renewable energy development policy promoted by the State of California.

Example 3-1 Promotion of modal shifts using the Russian Trans-Siberian Railway (PC products)

Toshiba Logistics Corp.

In order to reduce lead times, Toshiba Logistics Corp. had been using aircraft to transport its products into Russia; however, this lead to a large amount of CO_2 emissions during transport. Accordingly, the company switched to transport via the Trans-Siberian Railway (modal shift) and also developed a new type of packaging capable of withstanding long-distance railway transport. As a result, the company reduced CO_2 emissions during transport by 23 kg per PC compared to the previous level.



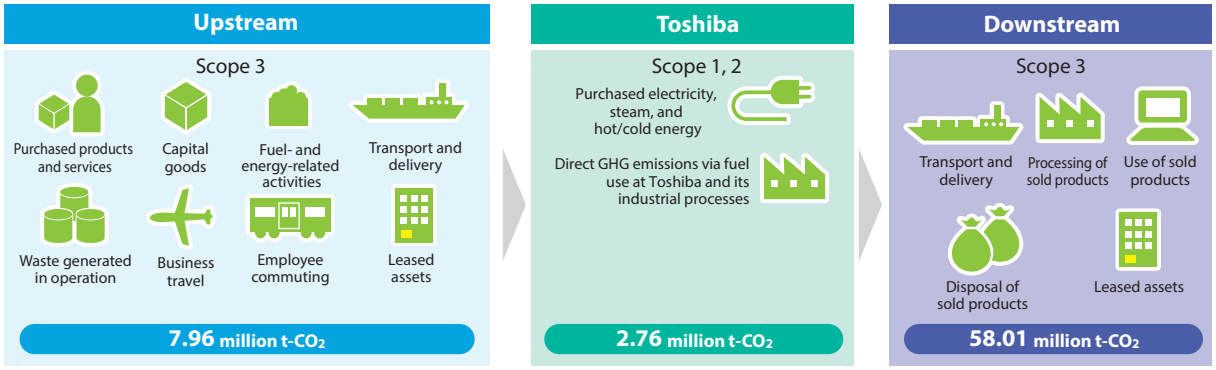


Mitigation of Climate Change

Topics | Making GHG emissions in the supply chain visible for all categories

Toshiba Group is working to calculate and analyze GHG[*1] emissions throughout its entire supply chain. In FY2012, the Group calculated such emissions for all categories using the calculation methods based on the Ministry of the Environment's guidelines[*2] and compared the results to those for the previous year for each category. The Group reduced GHG emissions during product use (the life cycle stage having the largest amount of emissions) by about 28% compared to the previous year.
Toshiba Group believes that it is important to work effectively to reduce GHG emissions throughout the product life cycle by quantitatively analyzing emissions per category as described above.

*1 CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6
*2 Basic guidelines for calculating GHG emissions throughout the supply chain



Category		Categories covered by calculations	FY2011 Calculation results (million t-CO_2)	FY2012 Calculation results (million t-CO_2)	Change in emissions	Considerations
Upstream	1	Purchased products and services	7.42	6.58	−11.3%	GHG emissions were reduced by using smaller parts and reducing product weight.
	2	Capital goods	0.68	0.57	−15.7%	As a result of screening investments based on their importance, GHG emissions were reduced.
	3	Fuel- and energy-related activities not included in Scope 1 and 2	0.2	0.2	−1.3%	GHG emissions were reduced by about 3,000 tons due to energy conservation efforts.
	4	Transport and delivery (Upstream)	0.57	0.52	−9.1%	GHG emissions were reduced due to modal shifts from airplanes to ships and railways as well as decreases in packing volume and product weight.
	5	Waste generated in operation	0.04	0.03	−15.1%	GHG emissions decreased because waste volume was reduced through sorting and recycling.
	6	Business travel	0.05	0.06	12.8%	GHG emissions increased mainly due to business travels for business expansion.
	7	Employee commuting	–	–		Employee commuting was assessed as accounting for less than 0.1% of total GHG emissions.
	8	Leased assets (Upstream)	–	–		Not covered by the calculation
Toshiba	9	Direct GHG emissions (Scope 1)	0.82	0.76	−7.3%	GHG emissions were reduced mainly through energy conservation efforts and reorganization of business/production sites.
	10	Indirect emissions associated with energy-derived emissions (Scope 2)	2.15	2.0	−7.0%	GHG emissions were reduced mainly through energy conservation efforts and reorganization of business/production sites.
Downstream	11	Transport and delivery (Downstream)	0.11	0.1	−8.9%	GHG emissions were reduced due to decreases in packing volume and product weight.
	12	Processing of sold products	–	–		Not covered by the calculation
	13	Use of sold products	80.51	58.28	−27.6%	GHG emissions decreased mainly because the energy-saving performance of TVs and air conditioners improved.
	14	End of life treatment of sold products	−0.24	−0.37	−57.0%	GHG emission reduction effects increased through use of a wider range of recyclable materials.
	15	Leased assets (Downstream)	–	–		Not covered by the calculation
	16	Franchises	–	–		Not covered by the calculation
	17	Investments	–	–		Not covered by the calculation
Total			92.31	68.73		

Topics | Accelerating the implementation of energy conservation measures through energy-saving diagnosis

Toshiba Group is working with JFE Techno-Research Corp. to perform energy conservation diagnoses at its production sites. By working with a third party, the Group aims to clarify whether there are any elements of waste in production equipment or its operation that have gone unnoticed by internal diagnoses as well as to identify specific improvement measures (including examining the cost effectiveness thereof), thus stepping up efforts to take environmental measures at production sites and enhance overall competitiveness. In the future, the Group will expand the scope of this initiative to cover not only Japanese and Chinese bases but also those in Southeast Asia while simultaneously developing diagnostic teams within its organization, thereby accelerating efforts to establish a global manufacturing system with fewer environmental impacts.

■ **Example energy conservation diagnosis scheme**

Narrowing down of processes to be diagnosed

Presentation of specific improvement measures based on objective data

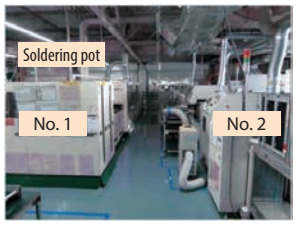
Preparation of preliminary materials	Diagnosis by a third party	Formulation of an implementation plan	Effective measurement of effects
Records of machinery and tools summarizing the number of pieces of equipment and their operating capacities and uses, production capacities, etc.	Analysis of differences between the operating capacities of equipment used and actual operations	Formulation of short-, medium-, and long-term plans based on energy conservation effects and investment costs	Application of measures to other departments

Toshiba Medical Systems Corporation, Nasu Operations

Toshiba Medical Systems Corp. is accelerating its improvement efforts by launching a project to promote energy conservation. Examples include reviewing the operation of 243 facilities, including soldering pots and reflow furnaces, which consume large amounts of energy, and replacing machinery and tools with high-efficiency models, such as introduction of LED lighting earlier than initially planned (installation of 5,700 LED lamps was completed in June 2013). Further, the company is actively striving to conserve energy, including by downsizing machinery and tools through reviewing their specifications.

■ **Improvement of operation of production equipment**

Expected to reduce CO_2 emissions by **62** tons annually



Concentrating production in soldering pot No. 1 and completely discontinuing use of No. 2

Concentrating production in one of three furnaces according to production plans

■ **Use of LEDs for plant lighting**

Expected to reduce CO_2 emissions by **653** tons annually

Replacing 400-watt mercury lamps with 200-watt LED models

Replacing 110-watt fluorescent lamps with 70-watt LED models

Toshiba HA Manufacturing (Nanhai) Co., Ltd.

Toshiba HA Manufacturing (Nanhai) Co., Ltd., one of Toshiba Group's bases in China that emits a large amount of CO_2, is making company-wide improvement efforts with the aim of reducing the amount of standard coal* used by 1,298 tons compared to the 2010 level during the period from 2011 to 2015. In order to accelerate its efforts to take improvement measures, the company has performed an energy conservation diagnosis to identify items (e.g., boilers and plant lighting) that have high potential to result in energy conservation.
The company is currently taking energy conservation measures systematically.

■ **Use of LEDs for plant lighting**

Reduce CO_2 emissions by **1,092** tons annually

■ **Other energy conservation items**

Energy conservation items	Reduction in CO_2 emissions
Energy conservation through improved management of boiler operation (improvement of air ratios and retaining of boilers' and steam pipes' temperatures)	Expected to reduce CO_2 emissions by **1,035** tons annually
Introduction of inverter pumps in the cooling tower to conserve energy through optimization of pump operation speed	
Energy conservation through prevention of air leaks from air compressors	

* Standard coal: A coal equivalent of energy. One kilogram of standard coal has a thermal value of 7,000 kilocalories.

Efficient Use of Resources

In order to help build a sound material-cycle, sustainable society, Toshiba Group works to reduce the volume of raw materials and water resources used for its business operations and to use them effectively, striving to reduce the volume of waste generated and finally disposed of.

Reducing the total waste volume

Toshiba Group is working to reduce waste generation by minimizing the volume of waste generated per unit production, which indicates business process efficiency improvement, as well as by reducing the total volume of waste to a level below the Earth's environmental capacity.

● **Results of FY2012**

In FY2012, the total volume of waste generated per unit production was 96% compared to that of FY2010, exceeding the initial target by 4 percentage points. The volume of waste (excluding that of objects with value) totaled 92 thousand tons, which is 15 thousand tons lower than the initial target.

● **Future initiatives**

In the Fifth Environmental Action Plan, Toshiba Group aims to reduce the volume of waste per unit production in FY2015 by 10% compared to FY2010 and to reduce the total volume of waste to 117 thousand tons.

Reducing the final disposal volume

In order to create a sound material-cycle, sustainable society, Toshiba Group is working to achieve zero waste emission—an initiative of reducing final landfills to zero by promoting the reuse and recycling of waste.

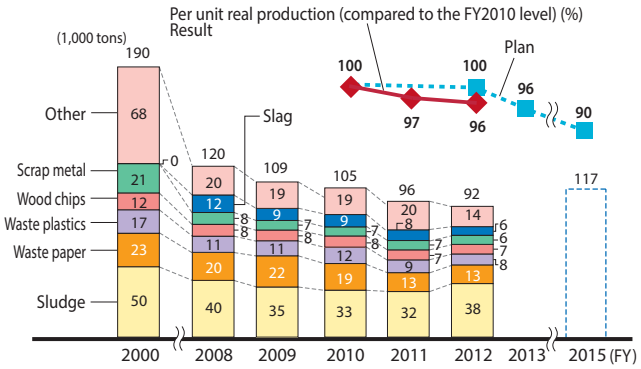
● **Results of FY2012**

The percentage of final landfills to the total volume of waste generated by Toshiba Group in FY2012 was 1.7%, which exceeded the initial target (1.8%).

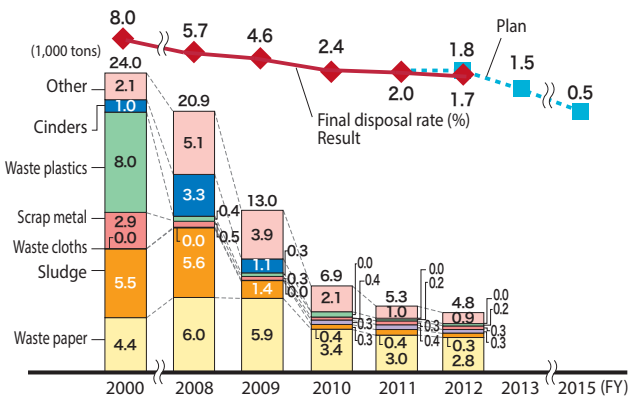
● **Future initiatives**

One goal of the Fifth Environmental Action Plan is to reduce the percentage of final landfills to 0.5% in FY2015. To this end, Toshiba Group will further promote the reuse and recycling of waste, particularly at overseas sites with high reduction potential.

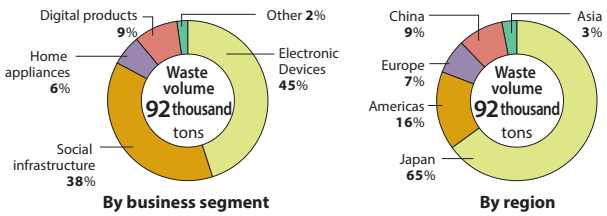
■ **Waste volume and total volume of waste generated per unit production**



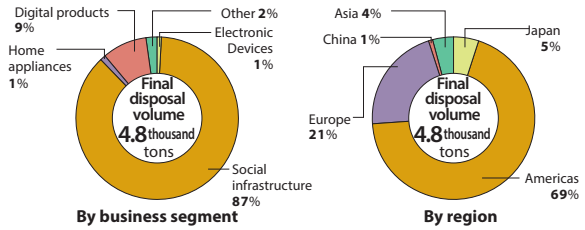
■ **Final waste disposal volume and the final disposal rate**



■ **Breakdown of the total volume of waste generated (FY2012)**



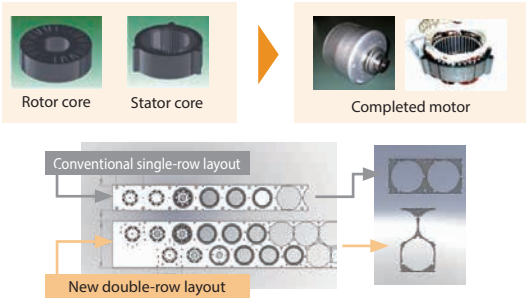
■ **Breakdown of the final waste disposal volume (FY2012)**



Example 3-3 Promoting high-efficiency manufacturing through the development of manufacturing technologies

Toshiba Industrial Products Manufacturing Corporation

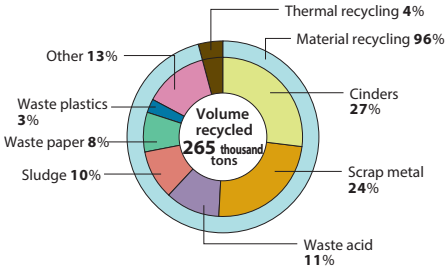
Toshiba Industrial Products Manufacturing Corporation, which manufactures motors for hybrid electric vehicles, uses its original technologies—large high-precision die technology and technology to deliver and stabilize the thin plate and wide material—to perform double-row punching in laminated iron core processing. This new double-row method reduces the volume of waste generated by 50% compared to conventional single-row progressive punching. Double-row punching, which produces two molds with a single press punch, has not only improved manufacturing efficiency but also reduced energy consumption.



● Promoting recycling

In FY2012, Toshiba Group recycled 265 thousand tons of resources, 20 thousand tons more than in FY2011. 94% of the waste generated was reused effectively as various resources. The recycled resources consisted mainly of scrap metal and cinders, and 96% of them were used effectively for material recycling (recycled into materials for products), and the remaining 4% for thermal recycling (heat recovery). In the future, Toshiba Group will continue to increase the total volume of resources recycled and at the same time will strive for higher quality recycling chiefly by increasing the percentage of resources recycled into materials.

■ Breakdown of the volume recycled (FY2012)



Efficient use of water resources

In response to a global increase in concerns regarding water problems, Toshiba Group is promoting sustainable water resource management. In particular, Toshiba Group is stepping up water management at business and production sites located in water stress areas where supply-demand relations in water resources are tight. In recognition of the fact that securing water resources involves environmental impact even in countries with well-developed water supply infrastructure, we are working to reduce the volume of water received.

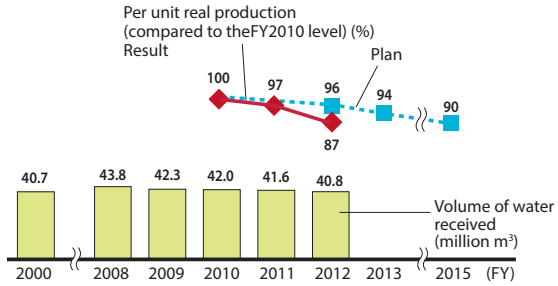
● Results of FY2012

The volume of water received per unit production in FY2012 was 87% of the total for FY2010, exceeding the initial target by 9 percentage points. The total volume of water received was 40.76 million m³, about 0.9 million m³ less than in the previous year.

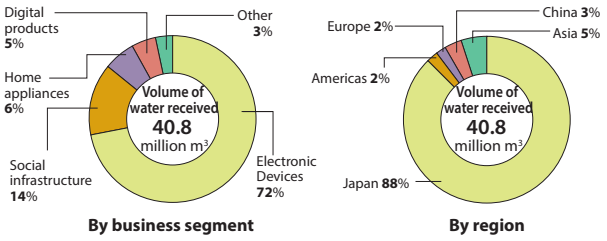
● Future initiatives

Under the Fifth Environmental Action Plan, Toshiba Group aims to reduce the amount of water received per unit real production by 10% compared to the FY2010 level in FY2015. We will continue to promote the reuse and recycling of water at domestic semiconductor plants, which account for 72% of the water received by Toshiba Group. Business and production sites located in countries where the amount of water resources per person is 1,700 m³ or less annually or in watersheds where over 60% of water is taken from rivers represent about 1% of the total amount of water received by the Group. We will step up our efforts to reduce the amount of water received by our business and production sites in such water stress areas.

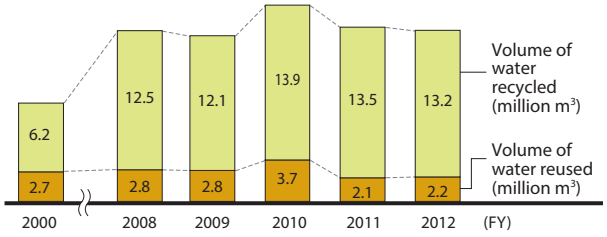
■ Volume of water received and that per unit production



■ Breakdown of the volume of water received (FY2012)



■ Volume of water recycled (FY2012)



Example 3-4 Initiatives for water saving at overseas business and production sites

Toshiba JSW Turbine and Generator Private Limited

Toshiba JSW Turbine and Generator Private Limited, which was established in India in 2008, constructed a comprehensive water recycling system, thereby reducing wastewater to zero. Production wastewater is recycled for use as industrial water in manufacturing processes, while living sewage is recycled for use as water for planting. Also, by storing rainwater and using it as water for planting, the company strives to reduce the volume of precious water received.


Production wastewater treatment facility


Rainwater reservoir

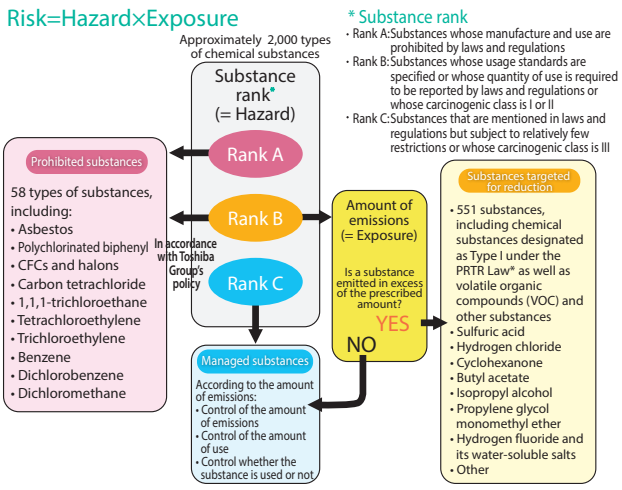
Management of Chemicals

Toshiba Group is striving to manage chemical substances appropriately in the processes of its business operations. Using alternatives, improving processes, and taking other measures, the Group is reducing emissions of the targeted substances.

Managing chemical substances

Toshiba Group classifies standards for the handling of chemical substances into the three categories of prohibition, reduction, and control, and manages chemical substances according to the regulations for each category. The relationship between substance ranking and management classifications, which shows the concept underlying this initiative, is indicated in the figure below. Approximately 2,000 types of chemical substances are classified into three ranks (hazard level A, B, and C) based on the regulatory levels set by environmental legislation, data on carcinogenic chemicals, and other factors. The classifications of prohibition, reduction, and control are determined by judging risks for each chemical substance using the ranking of the substance equivalent to hazard levels and emissions equivalent to exposure to the substance.

■ Substance ranking and management classifications

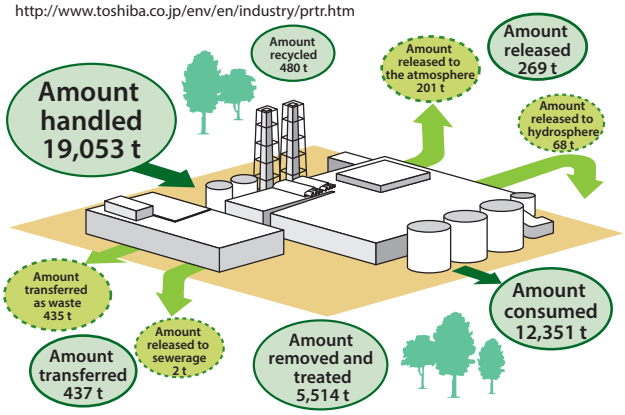


* Law Concerning Pollutant Release and Transfer Register

■ PRTR-based material balance

The balance of Toshiba Group's total material volume based on the PRTR Law.

http://www.toshiba.co.jp/env/en/industry/prtr.htm



- The amount consumed refers to the amount of substances covered by PRTR that are changed into other substances by chemical reaction or transferred outside along with products whether they are contained therein or accompany them.
- The amount of removed and treated refers to the amount of substances covered by PRTR that undergo such processes as incineration, neutralization, decomposition, reaction treatment and are changed into other substances inside operation sites.
- Landfills at operation sites (stable, controlled, or isolated) are equivalent to the amount emitted. The amount released to public sewerage is categorized as the amount transferred.
- The difference between the amounts transferred and recycled is determined based on whether fees are charged for recycling of the materials. Accordingly, waste is included in the amount transferred if Toshiba Group asks contractors to dispose of it and pay for the service even if the purpose is to recycle it.

Reducing emissions of chemical substances

Toshiba Group strives to reduce the consumption of chemical substances by designating substances that have large direct impacts on the environment as those targeted for reduction. By business segment, semiconductors, home appliances and social infrastructure systems account for over 90% of the total emissions of such substances, and by region, 70% of such emissions originate from Japan.

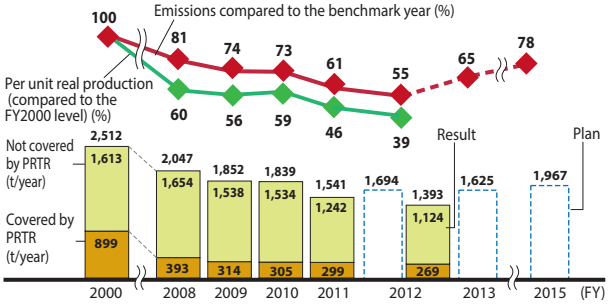
● Results of FY2012

In FY2012, Toshiba Group gave priority to taking measures for solvents used in cleaning and resist coating, which ranked high among such emissions, and promoted such initiatives as using alternative substances, installing combustion detoxifying devices and improving manufacturing processes in order to reduce the use of raw materials. As a result, Toshiba Group reduced emissions of substances targeted for reduction by 10% (approximately 150 tons) compared to the previous year and by 45% compared to the FY2000 level.

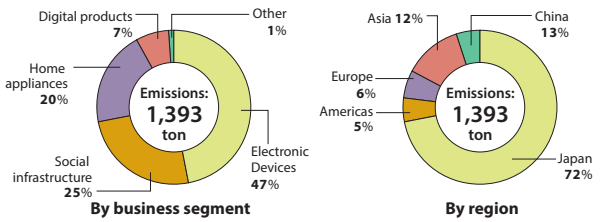
● Future initiatives

In the Fifth Environmental Action Plan, the Group aims to reduce the emissions of substances in FY2015 to 1,967 tons. It plans to use alternative substances and increase material efficiency by improving processes as an incoming countermeasure and introduce emission removal and collection equipment as a outgoing countermeasure.

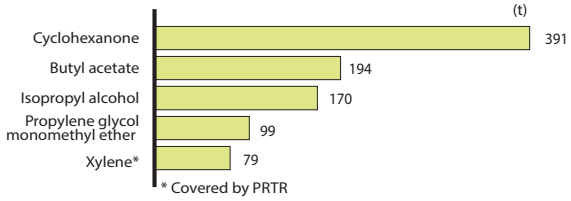
■ Emissions of substances targeted for reduction



■ Breakdown of emissions of substances targeted for reduction (FY2012)



■ Emissions of top five substances targeted for reduction (FY2012)

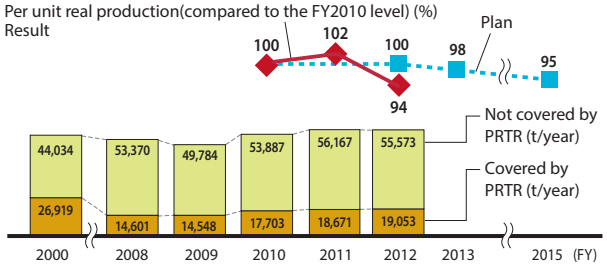


Reduction in the amount handled

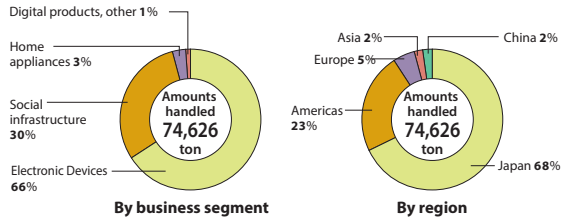
● Results of FY2012 and future initiatives

In FY2012, semiconductors and social infrastructure systems accounted for over 90% of the total amount of chemicals handled, with substances used for chemical reactions and wastewater treatment ranking high among chemicals. The material balance for PRTR-covered chemicals indicates that 29% of them are removed through neutralization and absorption and 65% are consumed together with the products that contain them, which taken together represent the majority of the chemicals handled. It also indicates that only about 1% of the chemicals used are discharged into the atmosphere or hydrosphere. Under the Fifth Environmental Action Plan, the Group is adding the amount of chemicals handled per unit production as a new target indicator, thereby aiming to reduce the amount by 5% compared to the FY2010 level in FY2015.

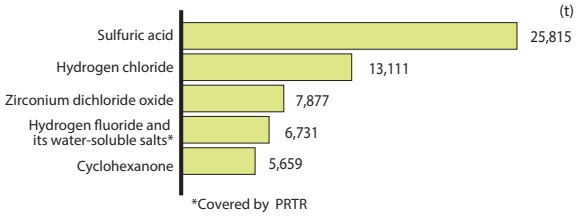
■ Amounts of substances targeted for reduction handled



■ Breakdown of the amounts of substances targeted for reduction handled (FY2012)



■ Amounts of top five substances targeted for reduction handled (FY2012)



Management of substances that have impacts on the atmosphere and hydrosphere

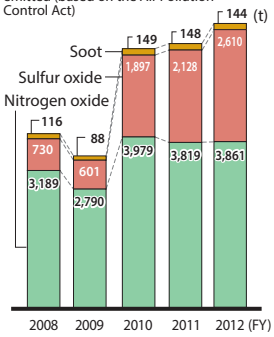
Toshiba Group is working to grasp the extent of emissions of sulfur oxides (SOx) and nitrogen oxides (NOx), both of which are major causes of air pollution, as well as water pollutants and ensure appropriate management of such emissions. Each production site voluntarily sets the maximum permissible levels of concentrations for these substances and complies with these prescribed standards, but total emissions fluctuate as production volumes increase or decrease.

Production sites in Europe and North America have already applied to wastewater the environmental impact risk assessment method (whole effluent toxicity (WET)* method), which uses biological indicators. Those in Japan have also started to consider using it as a new indicator of wastewater management.

* Whole Effluent Toxicity

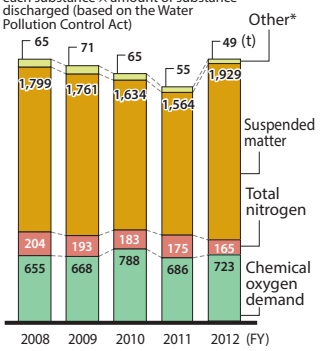
■ Impacts on the atmosphere

Amount of impact = concentration of each substance × amount of substance emitted (based on the Air Pollution Control Act)



■ Impacts on the hydrosphere

Amount of impact = concentration of each substance × amount of substance discharged (based on the Water Pollution Control Act)



Starting in FY2007, data include those for Sigma Power Ariake and Sigma Power Tsuchiura.
* N-hexane extracts, phenols, copper, zinc, soluble iron, soluble manganese, total chromium, total phosphorus, and nickel

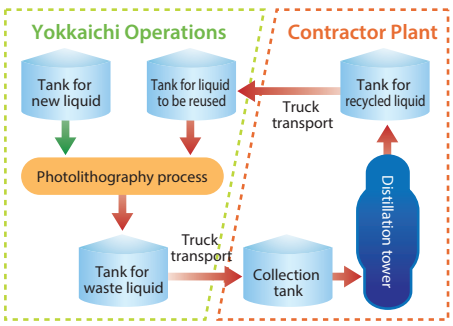
Management of ozone-depleting substances

Toshiba Group possesses specified chlorofluorocarbons (CFCs), which deplete the ozone layer, as coolant for air conditioners installed in factories; we appropriately dispose of such CFCs in accordance with the law. In FY2011, the Group had 14 tons of specified CFCs and 281 tons of other types of fluorocarbons. In FY2012, due to measures such as the replacement of old air conditioning systems with high-efficiency systems, we reduced the amount of specified CFCs to 12 tons and the amount of other fluorocarbons to 256 tons. The amount of specified CFCs possessed by the Group was reduced by 11% compared to the previous year. We will continue to properly manage CFCs.

Example 3-5 Reduction of the amount of chemicals handled through reuse in semiconductor photolithography

Yokkaichi Operations, Toshiba Corp.

Toshiba had been outsourcing the collection of waste chemicals used in semiconductor photolithography to collectors and had been using newly purchased liquids in all processes. In order to reduce the amount of chemicals used, we reviewed the levels of purity required for different processes and identified those processes in which recycled chemicals having lower purity than new liquids could be used. Also, by adjusting the mixing ratio of waste liquids collected from manufacturing processes, which contain different elements, we reduced the workload required for distillation and purification, thereby facilitating delivery of recycled products that meet purity specifications. Toshiba outsources distillation and purification of waste liquids to outside contractors. These measures made it possible to reduce purchases of new liquids by 10%. We are evaluating the possibility of using recycled chemicals in a wider range of processes.



Response to Environmental Risks

Toshiba Group is working to purify contaminated soil and groundwater by ascertaining the present condition of soil and groundwater at its production sites. The Group's basic policy is to prevent chemical substances from contaminating soil and groundwater and identify environmental liabilities such as PCB-containing equipment and dispose of such equipment in a systematic way.

Soil and groundwater purification

Toshiba Group is working to purify contaminated soil and groundwater by ascertaining the present condition of soil and groundwater at its production sites. The Group is also taking safety measures for environment-related equipment to prevent contamination with chemicals and reduce environmental risks. A survey of all production sites confirmed contamination at 14 sites, where soil and groundwater contamination with volatile organic compounds (VOCs) has been purified, and the results are being monitored. VOCs in groundwater are collected and eliminated mainly using the water pumping method.

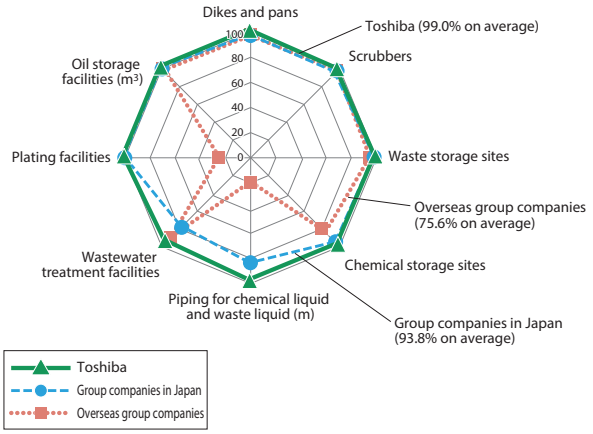
Toshiba Group uses the water pumping method to purify soil and groundwater mainly in areas with high concentrations of VOCs, but if the VOC concentration in such areas is lowered due to progress in purification, the Group takes such measures as stepping up water pumping efforts in other areas with relatively high VOC concentrations. In FY2012, the Group collected 613 kg of VOCs. The amount collected was about 20% less compared to the previous year, but this is chiefly because the amount of VOCs collected per liter of water pumped is gradually decreasing due to the progress made in purification through drastic measures that make the most of the opportunity presented by land modifications, methodological changes (from water pumping to in-situ purification), and declines in relative concentrations of VOCs as a result of purification. In the future, Toshiba Group will continue to advance soil and groundwater purification using appropriate methods, taking into account world trends in the progress of purification technology. At the same time, it will strive to ensure full communication with local governments and residents in neighboring areas through tours of purification facilities and other public relations activities.

Preventing contamination and reducing contamination risks

In order to prevent contamination with chemical substances and reduce contamination risks, Toshiba Group independently established the Structural Design Guidelines to prevent leaks of chemicals at its eight types of environment-related facilities such as wastewater treatment plants, and its overseas sites are also promoting continuous improvements in this area. In FY2012, Toshiba Group achieved a compliance rate of 99.0% for all of Toshiba's sites and 93.8% for all of its group companies' sites in Japan.

In its overseas operations, at the time of establishing a new business or relocating a business, Toshiba Group also assesses contamination risks by investigating land use and contamination histories. Assessments are made in accordance with laws and regulations in each country, and Toshiba Group's own rigorous standards are applied in countries without relevant legislation.

■ **Rate of compliance with the Structural Design Guidelines (FY2012)**



■ **Purification of soil and groundwater contaminated with volatile organic compounds**

Business and production site	Location	Progress in purification	Purification method*1	Amount collected*2 (kg)
Fukaya Complex, Toshiba Corp.	Fukaya, Saitama Prefecture	Being monitored*3	A	—
Former site of Asia Electronics Inc.'s Yokohama Operation Center	Yokohama, Kanagawa Prefecture	Being monitored	A, E, G	—
Komukai Complex, Toshiba Corp.	Kawasaki, Kanagawa Prefecture	Purification in progress	A, G	73.7
Himeji Operations (Semiconductors), Toshiba Corp.	Taishi Town, Ibo County, Hyogo Prefecture	Being monitored (North district)	D, F, G	—
		Purification in progress	A	242.0
Himeji Operations, Toshiba Corp.	Himeji, Hyogo Prefecture	Construction work -> Being monitored	E, F, G	—
Oita Operations, Toshiba Corp.	Oita, Oita Prefecture	Purification in progress	A	0.6
Fuji Operation, Toshiba Carrier Corp.	Fuji, Shizuoka Prefecture	Purification in progress	A, B	117.0
Tsuyama Operation, Toshiba Carrier Corp.	Tsuyama, Okayama Prefecture	Purification in progress	A, B	1.0
Kawamata Seiki Co., Ltd.	Kawamata Town, Date County, Fukushima Prefecture	Purification in progress	A	0.0
Kitashiba Electric Co., Ltd.	Fukushima, Fukushima Prefecture	Purification in progress	A	0.1
Former site of Toshiba Shomei Precision Corp.'s Kawasaki Works	Kawasaki, Kanagawa Prefecture	Being monitored	A, E, F	—
Former site of Toshiba Lighting & Technology Corp.'s Iwase Works	Sakuragawa, Ibaraki Prefecture	Purification in progress	A	0.1
Ibaraki Plant, Lighting Device & Fixture Corp.	Joso, Ibaraki Prefecture	Being monitored	A, B	—
Kimitsu Operation Center, Toshiba Components Co., Ltd.	Kimitsu, Chiba Prefecture	Purification in progress	A, B	178.4

*1 Purification method: (A) groundwater pumping, (B) soil gas suction, (C) reduction decomposition, (D) oxidation decomposition, (E) interception containment, (F) removal by excavating soil, and (G) bio-activation.
*2 Amount collected: Amount collected from April 2012 to March 2013.
*3 Monitoring: Monitoring to confirm how things develop after work that will allow measures to be taken or purification is completed.

In order to ensure effective prevention of groundwater contamination, an act revising part of the Water Pollution Control Act was promulgated on June 22, 2011 and came into force on June 1, 2012. To prevent groundwater from becoming contaminated with hazardous substances*4, new provisions have been added that require those who install facilities where hazardous substances are used, stored, or otherwise handled to comply with structural, equipment, and usage standards to block hazardous substances from entering the ground and to record and maintain records of periodic inspection results. As early as 1990, Toshiba Group established the Structural Design Guidelines, an initiative that anticipated the purpose of these revisions to the Act, and has since taken actions in accordance with the Guidelines.

*4 As stipulated in Article 2 of the Order for Enforcement of the Water Pollution Control Act, the 28 hazardous substances subject to regulation include cadmium, lead, and trichloroethylene (as of April 2013).

Example 3-6 Treatment of volatile organic compounds in soil, Biostimulation method

Himeji Operations, Toshiba Corp.

Toshiba used the biostimulation method to purify volatile organic compounds contained in the soil at Himeji Operations. This method injects purifying chemicals that provide nutrients to microorganisms into the targeted soil in order to activate anaerobic microorganisms within the soil, thereby dechlorinating hazardous substances (trichloroethylene, etc.) and decomposing them into harmless substances.

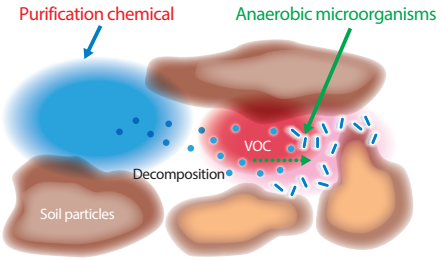


Diagram depicting soil purification by the biostimulation method

Identifying environmental liabilities

With the enforcement of the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes, keepers of PCB waste are required to appropriately dispose of PCB waste. The revision of the Enforcement Ordinance in December 2012 moved back the deadline for disposal of PCB waste until March 2027. At March 2013, Toshiba Group reported environmental liabilities of approximately 8.5 billion yen as expenses for the outsourcing of disposing of PCB waste by making it harmless. These expenses cover the disposal of such items as PCB-containing products stored and managed at production sites nationwide. The Westinghouse Electric Company group, a consolidated subsidiary of Toshiba Corp., complies with U.S. federal, state, and other local legislation concerning the discharge of pollutants, disposal of hazardous waste, and other activities that lead to environmental pollution. These legislations have affected and are expected to affect Toshiba Group in the future, but the status of legislation and regulations, the ability to identify sites that require removal of contamination, waste disposal capacity, and other conditions are uncertain, and therefore, it is difficult to accurately estimate final costs incurred by, and the time required for, future decontamination. Of those costs, approximately 7 billion yen in environmental liabilities was reported as a loss that could reasonably be estimated in March 2013. The amount of environmental liabilities will be revised according to the progress in environmental assessments and purification work, technological innovation, and the new demands of legislation. These do not have serious effects on the financial condition and business performance of Toshiba Group, but the Group will continue to identify and disclose its environmental liabilities properly in the future.

Information such as financial statements
http://www.toshiba.co.jp/about/ir/jp/library/sr/sr2012q4.htm

Storage and management of PCB

Since 1972, when the manufacture of products using polychlorinated biphenyl (PCB) was discontinued in Japan, Toshiba Group has kept PCB and PCB-containing products under strict surveillance, controlled them, and reported their storage to the relevant authorities in accordance with the Waste Management and Public Cleansing Act and the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes. In addition to meeting the prescribed storage standards, the Group makes doubly sure through the installation of dikes and double containers and other measures that they are stored appropriately.
In order to treat PCB and PCB-containing products safely and as swiftly as possible, Toshiba, along with group companies, has registered some 7,400 transformers and condensers with Japan Environmental Safety Corporation (JESCO), which started to provide wide-area PCB treatment services in FY2005. In FY2012 about 523 transformers, large condensers and oil were treated. In the future, Toshiba Group will continue to treat PCB and PCB-containing products properly in accordance with JESCO's treatment plans.

PCB-containing equipment being transported to Japan Environmental Safety Corp.

Recycling of End-of-Life Products

Toshiba Group is expanding the recycling of end-of-life products globally. In Japan, too, the Group is actively promoting the recycling of end-of-life products centered on waste home appliances and personal computers.

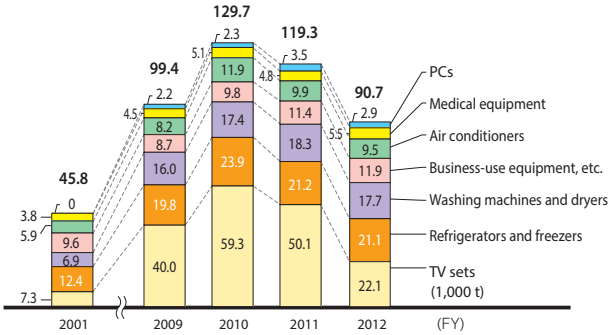
Recycling end-of-life products globally

In order to ensure efficient use of resources and appropriate treatment of hazardous substances, in accordance with recycling regulations in each country and territory of the world, Toshiba Group is promoting the collection and recycling of products that customers have discontinued use of. The Group promotes collection and recycling of end-of-life products while striving to minimize collection and recycling costs as it complies with each country's recycling scheme. In Japan, in addition to products covered by the Act on the Recycling of Specified Kinds of Home Appliances, the Act on the Promotion of Effective Utilization of Resources, and other relevant laws, the Group has established a unique scheme to collect medical equipment, elevators, MFP/POS systems, and other industrial equipment. Toshiba Group also responds appropriately to the Directive on Waste Electric and Electronic Equipment (WEEE) in Europe*1 and state laws in the United States. Furthermore, it is preparing to respond appropriately to recycling-related laws enacted in China, India, and Australia and those expected to be enacted in the future by governments in Asia, Central and South America, and other regions.

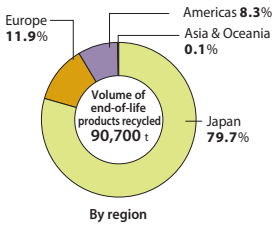
● Results of FY2012

In FY2012, in Japan and abroad, Toshiba Group collected about 112,000 tons of end-of-life products, of which it recycled about 91,000 tons. In Japan, due to the completion of collection of cathode ray TVs as a result of the start of digital terrestrial TV broadcasting, the volume of the four types of waste home appliances collected in Japan fell compared to the previous year. However, the volume of end-of-life products collected overseas, including in Europe and North America, remained fairly constant. In the future, Toshiba Group will continue to increase the volume of end-of-life products collected and recycled in Japan and establish a collection scheme in a wider range of its overseas locations.

■ Volume of end-of-life products recycled (global)



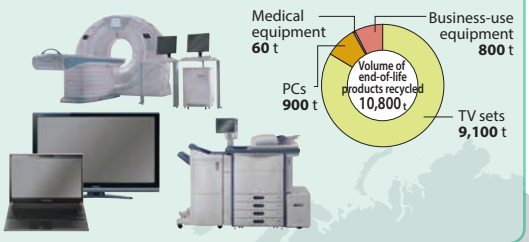
■ Breakdown of the volume of end-of-life products recycled (FY2012)



Looking at the volume of end-of-life products recycled by region, in Japan 80% of the total volume is recycled, with four types of home appliances accounting for the bulk of this. Major items collected and recycled in Europe, which has the next highest recycling ratio after Japan, include TV sets, PCs, multifunctional peripherals (MFPs), and medical equipment. In the U.S., major items include TV sets and PCs. Maintaining the volume of end-of-life products collected in China and other Asian countries as well as preparing to respond to recycling-related laws that are expected to be enacted in other areas are issues to be addressed in the future.

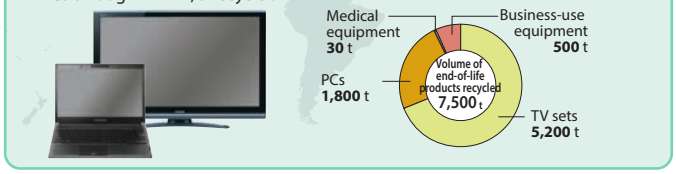
■ Volume of end-of-life products recycled by region (FY2012)

● Europe: 10,800 tons
In accordance with the WEEE Directive, Toshiba is collecting and recycling end-of-life products throughout Europe.

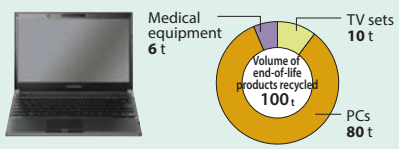


● Japan: 72,200 tons
In addition to the four types of home appliances and PCs, business-use equipment is also collected and recycled.

● Americas: 7,500 tons
Toshiba Group is collecting and recycling end-of-life products such as TV sets and PCs through MRM*2, a recycler.



● Asia and Oceania: 100 tons
Toshiba Group is expanding its PC recycling program globally. In countries in Asia and Oceania, including Singapore, Thailand, Malaysia, and New Zealand, the Group has voluntarily implemented a PC recycling program.



*1 The WEEE Directive is a directive of the European Union concerning waste electrical and electronic equipment.
*2 MRM: Electronic Manufacturers Recycling Management Company, LLC (MRM) is a recycling management firm established jointly with Panasonic Corp. and Sharp Corp. in September 2007. For more details, visit its website: http://www.mrmrecycling.com/

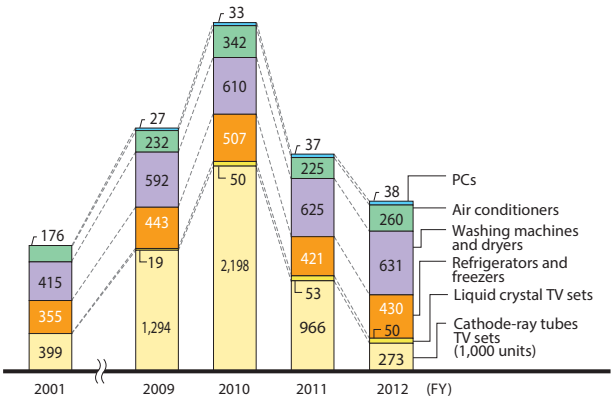
Recycling of end-of-life products in Japan

In Japan, Toshiba Group is collecting and recycling end-of-life products in accordance with the Act on the Recycling of Specified Kinds of Home Appliances and the Act on the Promotion of Effective Utilization of Resources.

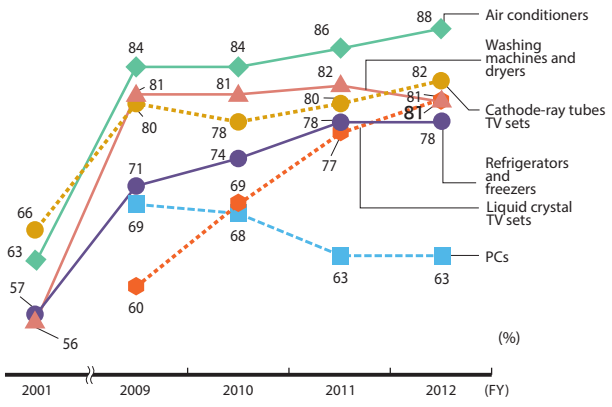
● Results of FY2012

The number of the four types of home appliances collected in FY2012 was approximately 1.65 million. We worked in cooperation with customers and other relevant parties to recycle end-of-life products. The recycling rate for all four types of products in FY2012 was 72% compared to that of the previous year. This was due to a rapid drop in the number of cathode ray TVs collected. The number of these appliances collected by Toshiba Group represented approximately 15% of the total of all such appliances collected in Japan, remaining at nearly the same level as FY2012 (1% increase compared to the previous year). A total of 38,000 end-of-life PCs, a 2% increase compared to the previous year, were collected from businesses and homes for recycling. Toshiba Group will continue to contribute to resource recycling by recycling the four types of home appliances and PCs.

■ Number of four types of home appliances and PCs collected in Japan



■ Percentage of four types of home appliances and PCs recycled in Japan



Examples of recycling initiatives

In order to properly treat hazardous substances and effectively collect and recycle valuables, Toshiba Group is working to develop and apply recycling technology and promoting recycling in cooperation with local communities and governments.

Example 3-7 Promoting recycling through the pelletization of insulation polyurethane for refrigerators

Term Corporation

By pelletizing insulation polyurethane, which accounts for 94% of the waste generated from the dismantling and crushing of refrigerators, Term Corporation contributes to the effective use of resources and reduction in environmental impact, including increasing the percentage of waste that can be sold for recycling* and reducing CO_2 emissions during transport.

Polyurethane material　　Pelletized polyurethane

* Percentage of waste that can be sold for prices relative to the total weight of waste products

Example 3-8 Independent waste collection program for recycling end-of-life electric and electronic devices

Toshiba Sales and Services Sdn Bhd
Toshiba Singapore PTE, LTD.

Toshiba Sales and Services and Toshiba Singapore are working in cooperation with local stores, sales agencies and recycling companies to develop a program* for recycling end-of-life electric and electronic devices. The program started in February this year and approximately 500 end-of-life products (TVs, PCs, refrigerators, etc.) have been collected so far. Through this independent collection program, Toshiba contributes to the reduction of waste and effective use of resources through appropriate recycling in Singapore.

Collection of end-of-life products at the service center

*Target products include home appliances (TVs, refrigerators and washing machines) and IT and telecommunications devices (notebook PCs, tablets, portable HDDs and projectors).

Chapter 4

Compliance and Management

We aim to become the most excellent company globally by stepping up environmental management.

INDEX

Summary of activities in FY2012

Toshiba Group's Policy for the Environment

Toshiba Group promotes environmental management, focusing on environmental issues as one of its top management priorities. It has also formulated the Basic Policy for the Environment which, in accordance with the Group's guiding principles, lays out specific environmental strategies to be shared by all members of the group.

Toshiba Group's Basic Policy for the Environment

We of the Toshiba Group recognize that the basic responsibility of people living today is to hand over the precious global environment to the next generation in a sound condition. Out of this recognition and in accordance with our Environmental Vision, we will strive to create affluence and ensure coexistence with the earth. We will also contribute to realizing a sustainable society by aiming at achieving a low-carbon and recycle-oriented society that strives to coexist with nature through our environmental activities.

◆ **Promoting environmental management**

- Toshiba considers environmental stewardship to be one of management's primary responsibilities and promotes environmental activities in harmony with economic activities.
- Toshiba assesses the impacts of its business activities, products and services on the environment, including with regard to biodiversity, and specifies objectives and targets with respect to the reduction of environmental impacts and prevention of pollution.
- Toshiba strives to continuously improve environmental management through internal audits and reviews of activities.
- Toshiba complies with all laws and regulations, industry guidelines it has endorsed, and its own standards concerning the environment.
- Toshiba strives to enhance the awareness of all its employees with respect to the environment and requires that they make a practical contribution to the environment through their work.
- Toshiba operates globally, and accordingly, promotes environmental activities throughout Toshiba Group.

◆ **Providing environmentally conscious products and services and reducing their environmental impact through business activities**

- Toshiba recognizes that natural resources are finite and implements vigorous environmental measures to promote their effective and practical use in terms of both products and business processes.
- Toshiba develops and provides environmentally conscious products and services which contribute to the reduction of environmental impacts throughout their life cycles.
- Toshiba strives to reduce the environmental impacts of all business processes, encompassing design, manufacturing, logistics, sale, and disposal, with a particular focus on the mitigation of climate change, efficient use of resources and management of chemicals.

◆ **As a corporate citizen of planet Earth**

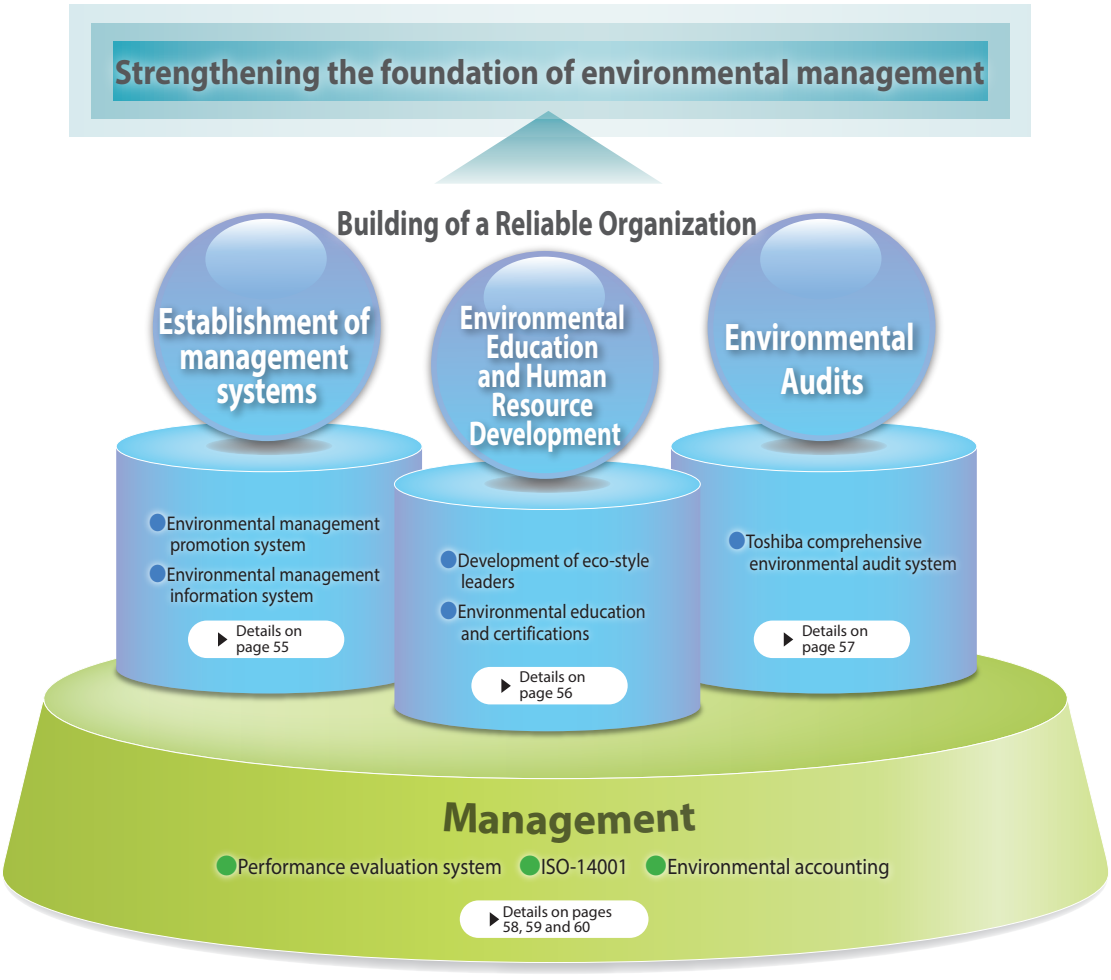
- Toshiba contributes to society through its environmental activities, which include the development and provision of excellent, environmentally conscious technologies and products in cooperation with society at large and with local communities.
- Toshiba is committed to maximizing disclosure and transparency in communication with stakeholders and society at large in order to facilitate mutual understanding.

Aiming to become the most excellent company in environmental management

In order to steadily implement the Environmental Action Plan (for details, see page 11), which is an action plan to realize the Environmental Vision that was developed based on the Basic Policy for the Environment, Toshiba Group is working to strengthen its foundation of environmental management. Specifically, the Group is promoting initiatives from three perspectives: establishment of a management system, training and human resource development, and environmental auditing. In terms of establishment of a management system, under the leadership of the Corporate Environmental Management Committee (a group-wide decision-making organization for environmental management), we have organized meetings and committees according to the issues to be addressed and regional characteristics. Thus, we have established a system that enables us to advance environmental management on a global scale. As part of our training and human resource development programs, we provide a wide range of environmental education to all employees, not to mention ensuring compliance with laws and ordinances. One program initiated in FY2012 is to develop eco-style leaders who lead environmental initiatives at each business and production site, and our plans call for the development of 2,000 such leaders globally by FY2015. As for environmental auditing, we have established an environmental management system based on ISO14001 at all sites, and in accordance with Toshiba Group's unique environmental audit system that covers the management of in-house companies, product divisions, and production sites, we review progress in environmental management, ECP development, and environmental action plans at business departments as well as raise the overall level of environmental activities.

In addition, as a tool for promoting environmental management efficiently and effectively, we have globally established an environmental management information system to manage and analyze the results of environmental audits as well as in-house environmental information and environmental accounting data and to manage these in an integrate manner. Furthermore, we have created a performance evaluation system for in-house and key group companies to reflect environmental management initiatives in performance evaluations. In this way, we are pushing through initiatives to improve the level of our environmental activities.

■ **Compliance and management strategies**



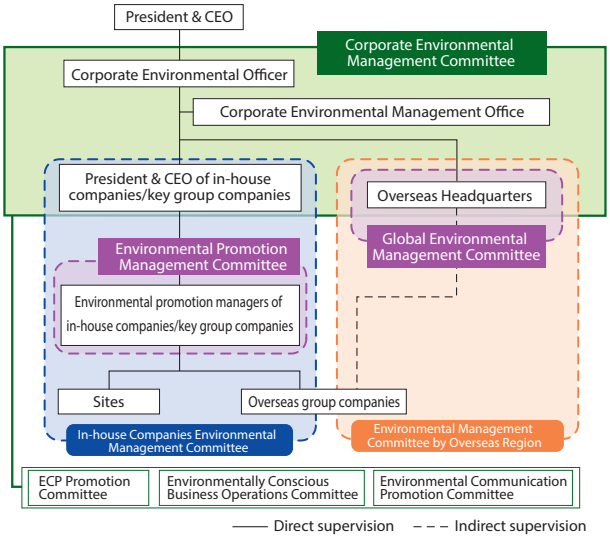
Environmental Management Structure

Environmental management structure

Toshiba Group is promoting environmental management worldwide as a group. There are four pillars upholding our environmental management: (1) strengthening of the management structure, (2) provision of environmentally conscious products and services, (3) development of environmentally conscious manufacturing, sales and processing, and (4) promotion of communication. We take active measures to promote initiatives focused on these objectives.

The Corporate Environmental Management Office develops and implements corporate-level, important policy, strategy, and measures with the approval of senior managers and makes them fully known to all personnel of the company. Specifically, Toshiba semiannually convenes the Corporate Environmental Management Committee, a group-wide decision-making organization regarding environmental management chaired by the Corporate Environmental Officer, which consists of executive officers, environment management officers of in-house and key group companies, and overseas environmental promotion managers of corporate regional headquarters. Meetings of the Committee make proposals for environmental measures related to management, technological development, production, and sales, confirm and follow up on the progress in the Environmental Action Plan to achieve the Environmental Vision, discuss and decide the overall policy and plans for environmental management, and make the company-wide policy fully known to all managers and employees.

■ **Toshiba Group environmental management structure**



Furthermore, in order to enhance the implementation of actual strategies, the company convenes the Environmental Promotion Management Committee, which comprises in-house and affiliated companies' environmental promotion managers, who are in charge of environmental management at the working-level.

The following committees were organized as subgroups of the Corporate Environmental Management Committee: the ECP Promotion Committee, which promotes the development of environmentally conscious products and technologies; the Environmentally Conscious Business Operations Committee, which promotes measures to reduce the environmental impact of business activities; and the Environmental Communication Promotion Committee, which promotes internal and external communication. These committees formulate detailed plans, identify potential problems and review measures implemented to solve problems in order to promote the sharing of information among all company members. Various committees specializing in particular themes are engaged in activities in a wide range of areas under the supervision of these committees.

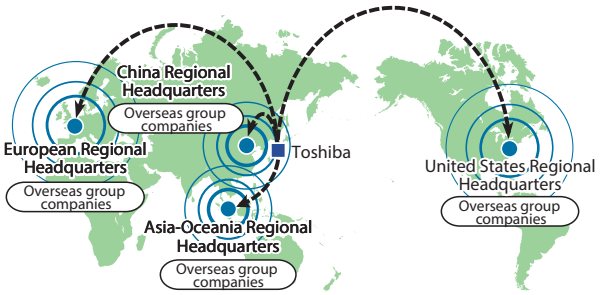
● **Enhancement of the global environmental management structure**

At the global level, Toshiba Group has established corporate regional headquarters in Europe, the U.S., China and Asia-Oceania in order to collect and share information on environmental policies and regulations in each region and to provide cooperation and support for group companies in these regions in developing effective environmental strategies.

Furthermore, Toshiba Group holds meetings of the Global Environment Management Committee to share activities implemented at a global level, thereby promoting the Group's environmental management in countries around the world.

We also have an auditing system through which we provide training for local auditors who conduct the environmental audits of overseas sites.

■ **Global environmental management network**

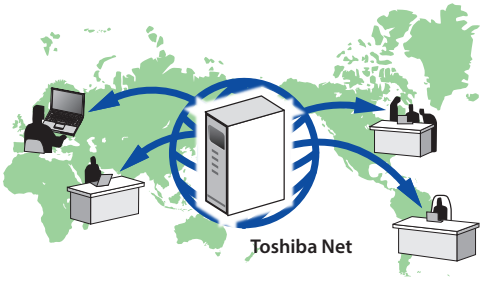


Environmental Management Information System

We have developed an Environmental Management Information System in order to collect and manage environmental data required to promote environmental management.

The Environmental Management Information System makes it possible to centrally manage and register not only performance data, such as energy consumption required for business activities and the amount of waste generated from these activities, but also environmental accounting information and the results of site environment audits. It covers all consolidated subsidiaries within the scope of management of Toshiba Group (590 companies in FY2012) and is accessible from countries around the world.

■ **Global information system**



Environmental Education/Human Resources Development

Training of eco-style leaders

Toshiba Group is promoting the training of Toshiba eco-style leaders as part of "environmental education and human resource development" one of the new goals set forth in the Fifth Environmental Action Plan. The objective is to certify employees having keen environmental awareness in all divisions as Toshiba eco-style leaders and raise employees' overall environmental awareness through participation in internal environmental programs and events. To become certified, employees must obtain an internal or external environmental license (e.g., passing of the Eco Test sponsored by the Tokyo Chamber of Commerce and Industry or becoming a Toshiba environmental auditor or nature observation instructor).
In FY2012, Toshiba certified 230 employees as Toshiba eco-style leaders compared to the goal of 200 stipulated in the initial training plan. Certified eco-style leaders serve as leaders in various environmental activities such as guiding visitors at eco-product exhibitions and holding café-style in-house events.

● Serving as a guide for eco-style tours

Toshiba Group exhibited at Eco-Products 2012, one of the largest environmental exhibitions in Japan, and organized eco-style tours, which guided elementary and junior high school students through its booths. During the three-day period, a total of 652 students participated in these tours in which eco-style leaders explained about Toshiba Group's environmentally conscious products and environmental initiatives.


Eco-style leaders explain each product in detail

● Holding of eco-style leader café events

Eco-style leaders held a café-style talk show with conservation of biodiversity as the main theme and invited Ms. Takako Shirai, a singer-songwriter, and Mr. Yuji Kishi, Professor Emeritus of Keio University and representative of the Tsurumi River Basin Networking (NPO) as guests. Some 100 employees, including eco-style leaders, participated in the event. One participant commented that, "I became interested in the nature close at hand." Another said, "I now think about biodiversity differently."


Scenes from the talk show with Ms. Takako Shirai (left) and Mr. Yuji Kishi (right)

Toshiba eco-style leader certification badge

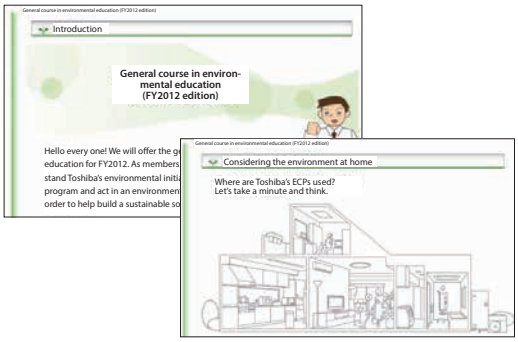
This badge is made of wood from forest development in Tokyo's Tama area. Toshiba Group has concluded the Agreement on Forest Development Activities with the Tokyo metropolitan government.

Environmental education and qualification

In order to raise the level of environmental activities, we provide environmental education programs for all employees. These education programs are composed of (1) general education courses, (2) ISO 14001 education courses, and (3) specialized education courses, offering curriculums designed to meet the needs of different posts, occupational roles, and specialties. All curricula for these courses are reviewed annually in order to help employees share the latest information.
Starting in FY2011, we introduced training courses for biodiversity promotion leaders. In the future, we will continue to enrich our specialized environmental education programs.

■ Environmental education system

General education	ISO 14001 education	Specialized education
e-learning (for all group company members)	Training courses for internal auditors	Education for the certification of in-house environmental auditors (Site auditors/Technology auditors)
Education for new employees	Education for special employees	Introductory course for environmentally conscious design
	General education	Training course for biodiversity promotion leaders



e-learning textbooks for FY2012

We provide training for auditors for our in-house environmental audits, which was put into practice in 1993. In the training program for site auditors, candidates are screened through group education, on-site training and a written examination. After the screening, candidates participate in actual audits as assistants and submit reports in order to be certified as auditors. Technology auditors are certified through group education and a written examination. In FY2012, 15 employees were certified as site auditors, 11 as technology auditors and 19 as overseas local auditors. The current number of certified auditors is 349.

■ Training for auditors (site audit)

Education and written examination (1 day)
↓
Chosen as a candidate
↓
Practical training
↓
Assistance in audits (2 days, twice)
↓
Submission of audit reports (twice)
↓
Certified as an auditor

● Knowledge required
- Global environmental issues
- Environmental laws and regulations
- ISO environmental management system
- Environmental science and technology
- Toshiba's environmental promotion rules and structural guidelines, etc.

● Requirements for auditors
- Employment in positions equivalent to or higher than section chief
- Auditors are classified into chief auditors, executive auditors, and assistant auditors depending on experience and skills

● Other
- Education sessions are held once a year.
- The pass rate in FY2012 was about 68%.

Toshiba Group certified auditors in FY2012

Site auditors: 169
Technology auditors: 107
Overseas local auditors: 73

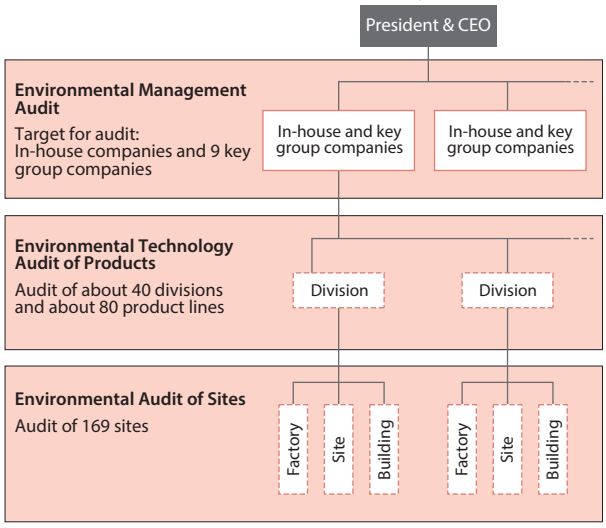
Environmental Audits

Toshiba Group's environmental audit system

After conducting environmental audits for the first time in 1989, Toshiba Group developed a comprehensive environmental audit system and has been using the system since FY1993 to conduct audits based on standards established by the group. The audit system initially developed was composed of four categories: (1) management system audits (environmental activity promotion systems, etc.), (2) on-site audits (levels of compliance with rules regarding environmental facilities, etc.), (3) VPE audits (levels of achievement of goals set in voluntary plans), and (4) technology audits (product environment management system, environmental performance, etc.). Audits were conducted over two days to check these items. The most important of these categories were on-site audits, reflecting the shop-floor approach. This approach is incorporated into the environmental audits of sites conducted today.

Environmental technology audits of products became an independent category in FY1995. Environmental management audits were started in FY2004 to evaluate the level of environmental management in in-house companies and key group companies.

■ Toshiba Group's environmental audit system

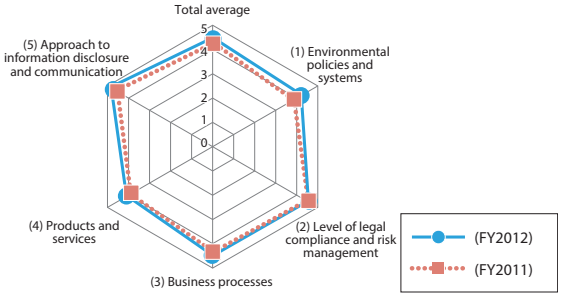


Since FY2006, these multiple audits have been systematized so that they could be conducted in three types of audits: (1) environmental management audits covering in-house companies and nine key group companies: (2) environmental technology audits of products covering about 40 divisions, and (3) environmental audits of sites covering 106 business and production sites, including non-manufacturing sites and non-consolidated subsidiaries. In-house companies and group companies conduct self-audits (self-inspections) within their companies based on the same standards in order to check business and production sites with relatively low levels of environmental impact that are not covered by site environment audits.

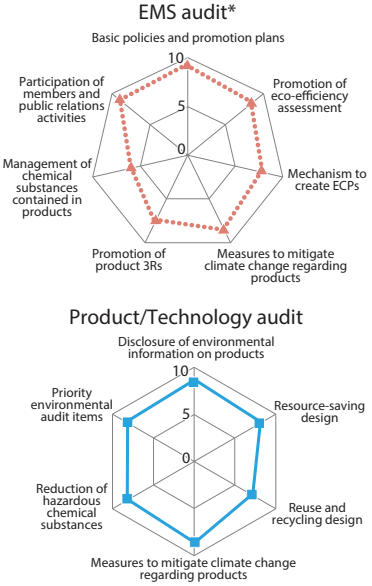
Audit items for these three audits are reviewed annually to improve evaluation level. In FY2012, we evaluated the level of environmental management based on audit items linked to the goals of the Fifth Environmental Action Plan, thus stepping up environmental management with the aim of becoming one of the world's foremost eco-companies.

■ Audit results (FY2012)

● Environmental management audit (total number of check items: 73)

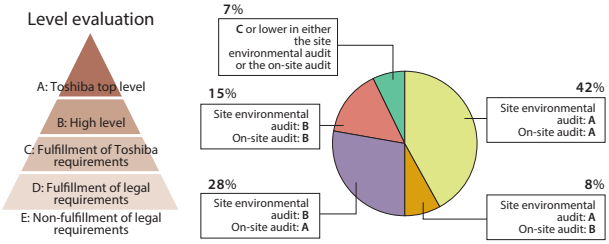


● Environmental technology audit of products (total number of check items: 36)



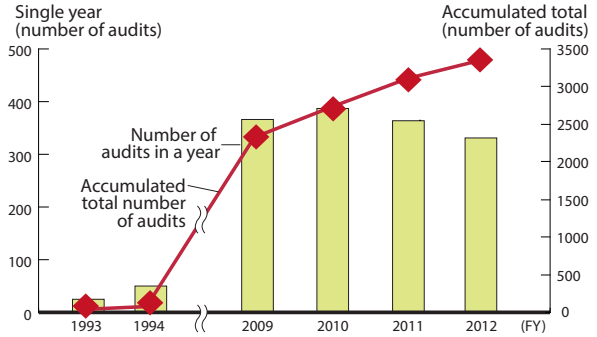
* Environmental Management System

● Environmental audit of sites (total number of check items: 220)



We conduct over 300 audits, including self-audits, annually, and the total number of audits conducted since FY1993 exceeds 3,000. We also provide in-house training for auditors who conduct audits.

■ Toshiba Group's environmental audit records

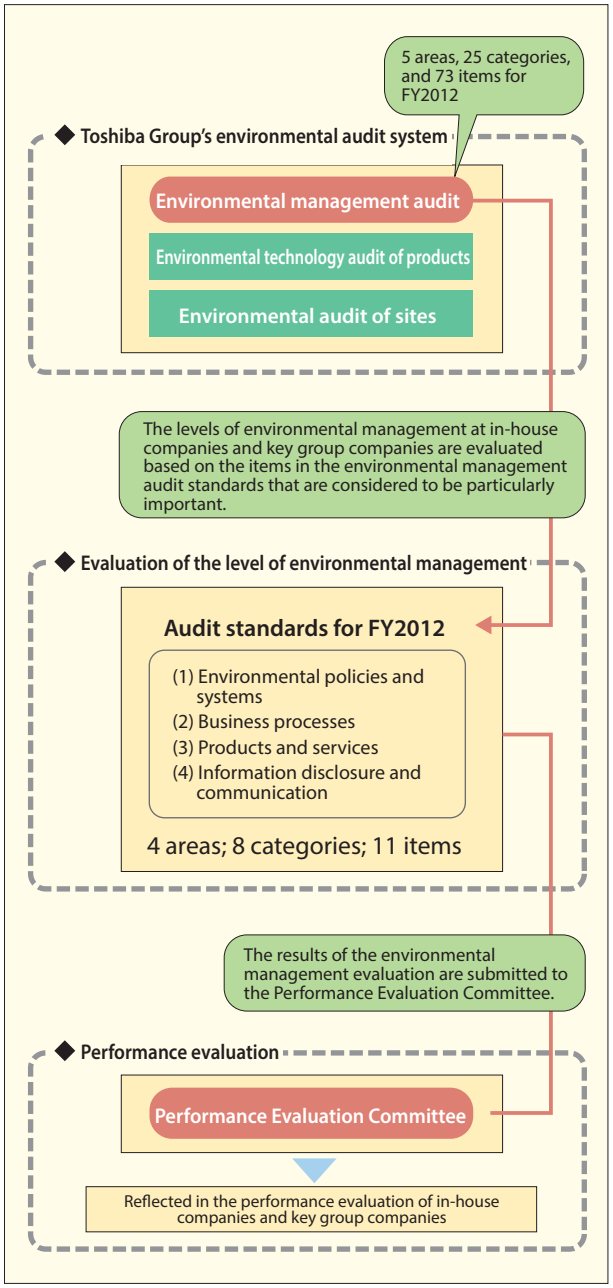


Performance Evaluation

Reflecting the level of environmental management in performance evaluation

Based on the Toshiba Group's environmental audit system, we evaluate the level of environmental management of all in-house companies and key group companies (9 companies). Of the 73 items divided into 25 categories in 5 areas, we evaluate the level of environmental management based on those identified as generally important items or priority items for the year in question. In FY2012, we chose 11 performance evaluation items from among 8 categories in 4 areas: environmental policies and systems, business processes, products and services, and information disclosure and communication. Based on these items, we numerically evaluated environmental management. The results of the evaluations of levels of environmental management are presented to the Performance Evaluation Committee and reflected in each company's performance evaluation.

■ Performance evaluation system



Risk Management

ISO 14001

In recognition of the importance of activities at business and production sites in promoting environmental management, we obtained ISO 14001 certification for all of Toshiba Corp.'s 15 domestic business and production sites by 1997 and have maintained the certification to this day. In addition, all of Toshiba Group's 179 business and production sites eligible for certification had obtained ISO 14001 certification. We will also acquire ISO 14001 certification for new overseas business and production sites that will become eligible for certification as a result of future business expansion.

Toshiba Semiconductor & Storage Products Company, Toshiba Power Systems Company, Toshiba Elevator and Building Systems Corporation, and other companies are striving to obtain integrated certification for their headquarters, sales offices, factories, and their group companies in order to develop environmental management systems for entire in-house and group companies.

■ Number of ISO-14001-certified sites

	Eligible sites	Certified sites	Certification rate
Toshiba Corporation's business and production sites	15	15	100%
Domestic manufacturing sites	58	58	
Domestic non-manufacturing sites	42	42	
Overseas manufacturing sites	49	49	
Overseas non-manufacturing sites	15	15	
Total	179	179	

The list of ISO 14001-certified sites is posted on the following URL:
http://www.toshiba.co.jp/env/en/management/iso14001.htm

Risks and compliance

● **Compliance with environmental laws and regulations**

Toshiba Group sets self-regulation standards stricter than legal standards regarding atmospheric emissions and discharges into hydrosphere so as to ensure that all its business and production sites comply with environmental rules. We conduct in-house environmental audits in order to identify potential environmental risks and to prevent environmental accidents. We also develop group-wide initiatives by sharing information, such as the results of internal audits on individual business and production sites, new regulation policies, and examples of accidents in other companies from among group companies.

There were no violations of environmental rules and regulations discovered in Toshiba Group companies in FY2012. Detailed information is presented on our website to show what measures are taken to ensure legal compliance at our business and production sites.

● **Response to environmental risks**

The Risk Compliance Committee examines how to cope with diversified risks under the direct supervision of the President and also takes measures to prevent environmental risks.

If any environmental risk should materialize, the Corporate Environment Management Division and the environmental promotion managers and other concerned parties of in-house companies, key group companies and business and production sites work in collaboration under the direction of the Corporate Environmental Officer to implement appropriate measures, including sharing information, checking relevant business and production sites and preventing recurrences.

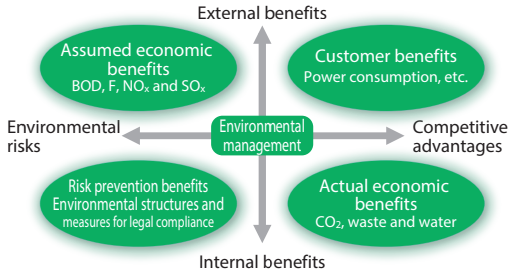
Environmental Accounting

● As a tool for environmental management

With a view to promoting environmental management, Toshiba Group is working to introduce an environmental accounting approach aimed at collecting accurate data on investments and costs required for its environmental conservation initiatives and analyzing the collected data in order to reflect investment effects and cost benefits in managerial decision making.

Environmental costs are calculated in accordance with the Ministry of the Environment's Environmental Accounting Guidelines 2005. As for environmental benefits, Toshiba Group's environmental accounting assumes four basic concepts: competitive advantages, prevention of potential environmental risks, internal benefits and external benefits. We classify benefits into four categories based on combinations of these concepts to develop a comprehensive approach to environmental accounting: customer benefits due to reduced power consumption of products, actual economic benefits resulting from reductions in the amount of waste and energy consumed, assumed economic benefits estimated to result from reductions in air pollutant emissions, benefits resulting from preventing potential risks. These categories provide useful indices for environmental management.

■ Environmental accounting as a tool for environmental management



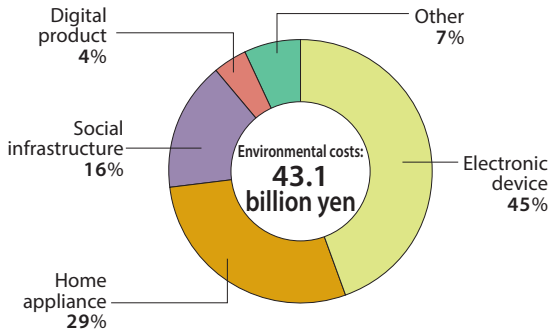
● Environmental costs and benefits

Total environmental costs decreased by 21% from the previous year to 43 billion yen. Of the different business sections, the electronic device section accounted for the largest percentage of total environmental costs, followed by the home appliance section.

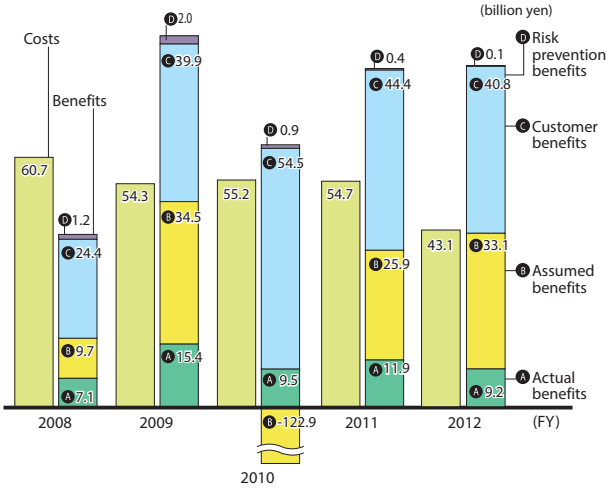
Total investments decreased by 31% from the previous year to 6.5 billion yen, with environmental investments accounting for 2.7% of total investments.

The total amount of environmental benefits was 83.2 billion yen (almost the same level as the previous year). 9.2 billion yen for actual benefits, 33.1 billion yen for assumed benefits, 40.8 billion yen for customer benefits, and 0.1 billion yen for risk prevention benefits.

■ Breakdown of environmental costs by business segment (FY2012)



■ Environmental costs and benefits (FY2008 - FY2012)



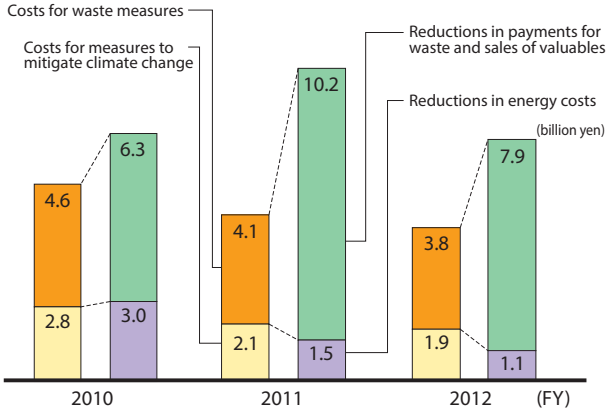
● Cost benefits of environmental management measures

The figure below shows the changes in the cost benefits of measures for climate change mitigation and waste disposal over the past three years. We compared the costs incurred in taking measures to mitigate climate change and dispose waste against the total amount of reductions in payments related to energy consumption and waste disposal compared to the previous year as well as sales of valuables during the current year. In the table, costs are expressed as business area costs and benefits as actual benefits.

In FY2012, the costs incurred taking measures to mitigate climate change were more than the reductions in payments related to energy consumption. On the other hand, measures to dispose waste brought larger benefits than the costs incurred taking them.

The major issue to be addressed going forward is how to overcome two conflicting problems: an increase in emissions of environmental pollutants as a result of business expansion and the need for cost reductions. Toshiba Group will also analyze the cost benefits and other financial aspects of environmental management measures in more detail.

■ Cost benefits of measures for climate change mitigation and waste disposal



■ Environmental costs (FY2012)

Unit: million yen

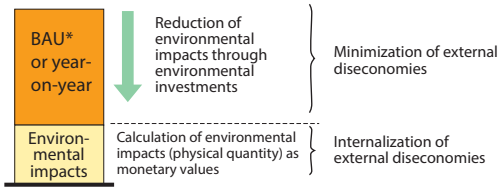
Category	Description	Investment	Costs
Business area costs	Reduction in environmental impact	4,507	19,474
Upstream/downstream costs	Green procurement, recycling, etc.	1,494	1,155
Administration costs	Environmental education, EMS maintenance, tree planting on factory grounds, etc.	109	4,787
R&D costs	Development of environmentally conscious products, etc.	379	15,968
Public relations costs	Support for local environmental activities, donations, etc.	11	83
Environmental damage restoration costs	Restoration of polluted soil, etc.	23	1,597
Total		**6,523**	**43,064**

Total capital investment	**239.6 billion yen**
Total R&D costs	**305.9 billion yen**

● Internalization of external diseconomies

Toshiba's current environmental accounting is basically an initiative aimed at minimizing external diseconomies, in which data on costs required for environmental conservation activities is collected to analyze effects on investments. However, environmental impacts due to business activities cannot be reduced to zero. For this reason, we are considering visualizing external diseconomies by assessing final environmental impacts as monetary values and to recognize (or internalize) them as required costs for environmental renewal.

■ Perception of external diseconomies



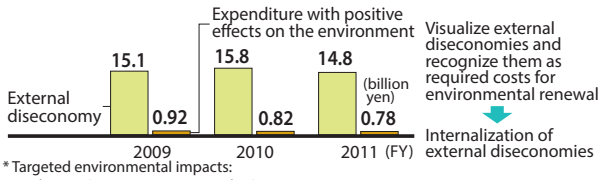
*BAU (Business as Usual): Best obtainable value for environmental impacts

The figure below shows a conversion of environmental impacts caused by industrial waste discharged by Toshiba Group over the past three years into monetary values. The amount of external diseconomies for FY2012 was computed to be 14.8 billion yen. At the same time, the costs required for conservation of biodiversity, afforestation of production sites, and other initiatives having environmentally positive effects totaled 0.78 billion yen*.

Comparing these costs, we are considering a system for offsetting or reducing external diseconomies as well as looking at the changes over the three-year period, which indicate that the reduction rate shifts from 6.1% to 5.2%, and then to 5.3%. In the future, we will continue to further increase the sophistication of our analysis.

* This amount is the sum of the public costs required for afforestation of production sites, cleaning campaigns, donations, natural restoration, etc. as listed in the table to the right.

■ Calculation of external diseconomies



* Targeted environmental impacts:
- Total GHGs (CO_2, PFC, SF_6, HFC, other)
- Emissions to atmosphere (soot, NO_x, SO_x)
- Emissions to hydrosphere (BOD, COD, suspended matter, total nitrogen, other)
- Final waste disposal amount (scrap metal, cinders, sludge, waste paper, waste acid, waste plastics, other)
- Chemical substances (covered by PRTR)

* The Life-cycle Impact assessment Method based on Endpoint modeling (LIME) was used for conversion into monetary values. For more details on LIME, see page 37.

■ Environmental benefits (FY2012)

Category	Reductions in environmental impacts		Benefits measured in monetary values (millions of yen)
Actual benefits	Energy	237,108 (GJ)	1,105
	Waste	10,733 (t)	7,885
	Water	901,000 (m^3)	223
Assumed benefits	Reduction in the amount of chemicals discharged	690 (t)	33,142
Customer benefits	Reductions of CO_2 emissions during use	3.69 million (t-CO_2)	40,820
Risk prevention benefits			77
Total			**83,175**

Reductions in environmental impacts for actual and assumed benefits indicate differences between FY2011 and FY2012.
Reductions in environmental impacts for customer benefits are based on comparisons with the benchmark year (in principle FY2000) and FY2012.

● New attempt: Contribution to the protection of natural capital

In June 2012, UNEP FI* developed the Natural Capital Declaration (NCD). NCD requires signatories to evaluate natural capital, which creates trillions of dollars of value annually, in the same manner as social and financial capital.

Therefore, Toshiba Group recalculated those of its current environmental costs that are highly relevant to the public interest as costs contributing to the protection of natural capital. The recalculation results indicated that Toshiba Group spent 21 billion yen on protection of natural capital.

In the future, the Group will grasp costs contributing to the protection of natural capital and analyze the degree of our contribution to environmental causes.

* UNEP FI: U.N. Environmental Programme Finance Initiative

■ Natural capital

- Ecosystem services provided by the earth's natural assets (e.g., soil, air, water, and flora and fauna)
- Suppliers of mineral resources (ore) and fossil fuels

■ Costs that contribute to the protection of natural capital (public interest costs)

Unit: million yen

Cost	Costs	Public interest costs	Remarks
Within business and production sites	19,474	18,621	Costs for measures to cope with climate change and environmental pollution
Upstream and downstream processes	1,155	0	Excluded because these are necessary costs
Management activities	4,787	701	Costs for afforestation of production sites, etc.
R&D	15,968	0	Excluded because these are business-related costs
Activities to benefit society	83	83	Local cleaning campaigns, donations, etc.
Responses to environmental damage	1,597	1,590	Natural restoration costs
Total	**43,064**	**20,995**	

- Recalculation of those current environmental accounting expenditure items that are highly relevant to the public interest as costs contributing to the protection of natural capital
- These costs cover measures to cope with climate change, management of green zones, etc.
- They do not cover items that contribute to Toshiba's own business activities (e.g., R&D costs).

Chapter 5

Communication

We will contribute to the creation of a better global environment through dialogues and mutual understanding with our stakeholders.

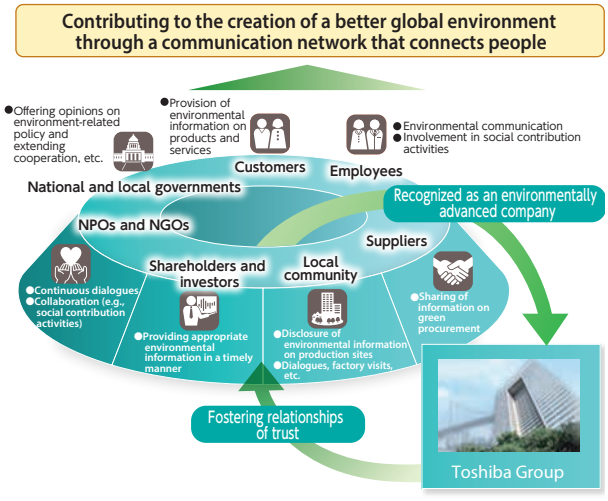
INDEX

Summary of activities in FY2012

Promoting environmental communication to connect people

Toshiba Group will establish stronger relationships of trust by actively disclosing information and holding stakeholder dialogues. At the same time, some 200,000 Toshiba Group employees will expand environmental communication to connect people by carrying out environmental activities globally while keeping close ties with local communities. Thus we will contribute to the creation of a better global environment.

■ Communication strategy



■ Major initiatives with stakeholders

Measures	Major activities
Communicating information to customers and local communities	- Publication of the Environmental Report - Disclosure of information on the environmental website - Emphasizing environmental initiatives at exhibitions - Placement of environmental advertisements - Environmental labeling for products - Disclosure of site reports - Publication of the Annual and CSR Reports
Facilitation of dialogues and establishment of closer cooperation	- Opening the employee participatory website to the public - Implementation of Global Environmental Action - Holding of stakeholder dialogues - Collaboration in environmental programs - Initiatives to conserve biodiversity - Participation in external organizations and offering of opinions on industry standards - Holding of green procurement briefings - Environmental activities in local communities

Launching of "Toshiba Group Global Environmental Action"

Implementing a global light-down campaign

Toshiba Group is working to expand environmental communication to connect people around the world, one of the activity items of the Fifth Environmental Action Plan. We have designated June 5, World Environment Day, as the day for Toshiba Group Global Environmental Action, and all 200,000 Toshiba Group employees in various parts of the world take environmental actions together on this day.

On June 5, 2013, the first day of this initiative, we carried out a global light-down campaign under the theme of energy conservation. For one hour from 7:30 p.m. to 8:30 p.m., we shut off the lights at business and production sites as well as employees' homes. A total of 363 sites in Japan and abroad participated in this initiative, saving about 8,500 kWh of electricity.

On the day of the campaign, the Toshiba head office (Toshiba Building in Tokyo's Hamamatsucho) also turned off all its lights, the first attempt of its kind. All lights on all floors of the 39-story building were simultaneously turned off. During the run-up to the light-down campaign, an outdoor countdown concert was held as a side event to raise employees' environmental awareness. More information on how the campaign was implemented is available on the special website for Global Environmental Action.

In FY2014 and thereafter, we will continue to promote Global Environmental Action under new themes in order to develop a keener environmental awareness among all employees at the global level and contribute to environmental initiatives in the local communities where we operate.

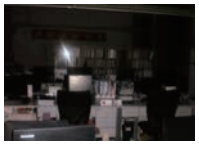
Special website for Global Environmental Action
http://www.toshiba.co.jp/env/en/global_env_action/index_j.htm

All lights turned off in the head office building (before -> after)

■ Scenes from the light-down campaign in various places

Toshiba (Australia) Pty., Ltd.

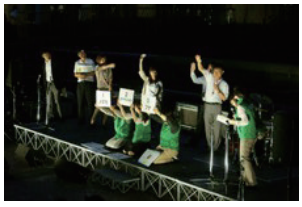
Toshiba Semiconductor (Thailand) Co., Ltd.



Hangzhi Machinery & Electronics Co., Ltd.

Himeji Operations of Toshiba Elevator and Building Systems Corporation

Candle night at employees' homes



Scenes from the concert at the head office

No. of sites that participated in the global light-down campaign

Japan:	317	
Overseas:	46	(Canada, Poland, Australia, Thailand, the Philippines, India, Singapore, South Korea, China, etc.)
Total:	363	

Presenting employees' environmental activities worldwide on TOSHIBA BATON, an employee participatory website

We have launched TOSHIBA BATON, a website that facilitates sharing of photographs of environmental activities posted by Toshiba Group employees around the world. The website was opened in FY2012 to introduce Toshiba employees' environmental initiatives to the public and raise employees' level of environmental awareness. Employees post articles on subjects close to them, such as plants and animals, and also introduce environmental activities at their workplaces. As the number of posts and viewers grows, the distance run by the runner displayed on the website increases. When the runner reaches the goal, a donation to an environmental cause will be made.

After carrying out the FY2013 Global Environmental Action initiative, many employees from around the world posted articles on how the light-down campaign was implemented at their business and production sites as well as homes to share information on the initiative globally. TOSHIBA BATON will continue introducing diverse environmental activities, including Global Environmental Action, taking place in various countries of the world.

TOSHIBA BATON
http://toshibaton.com/

A runner runs on the world atlas

Examples of articles about Global Environmental Action

Advancing with Customers

Environmental Report and website

Since the publication of the first volume of its environmental report in 1998, Toshiba Group has disclosed its environmental information every year. The Toshiba Group Environmental Report 2012, which was published last year, received the Environmental Reporting Grand Prize (Minister of the Environment's Award) in the 16th Environmental Communication Awards hosted by the Ministry of the Environment.

Toshiba Group
Environmental Report 2012
(Japanese, English, and Chinese versions)

In addition to the content found in the report, Toshiba's environmental website discloses more detailed information in a timely manner. Videos of exhibitions and events are also posted on the website. The Factor T website, which was launched in 2013, explains Factor T, a new indicator of affluence.

Toshiba Group environment website
http://www.toshiba.co.jp/env/en

Factor T website
http://www.toshiba.co.jp/env/jp/factor_t/index_j.htm (in Japanese only)

Exhibitions

We take an active part in presenting our products and technologies at various exhibitions around the world in order to have our environmental initiatives understood by as many people as possible.

● **Major exhibitions**

Jun. 2012	U.N. Conference on Sustainable Development (Rio+20)	Brazil
Sep. 2012	IFA 2012	Germany
Dec. 2012	Eco-Products 2012	Japan
Jan. 2013	2013 International CES	United States
Feb. 2013	Toshiba Group Environmental Exhibition	Toshiba head office, Japan
Mar. 2013	Eco-Products International Fair	Singapore
Apr. 2013	WETEX2013	UAE

Eco-Products 2012 (Japan)

Toshiba Group Environmental Exhibition (Japan)

Eco-Products International Fair (Singapore)

WETEX2013 (UAE)

Advertisements

Toshiba Group deploys corporate advertisements under our "Toshiba eco-style" global brand for environmental management to improve its environmental initiative image and corporate brand image.

During FY2012 to FY2013, we have communicated what Toshiba considers to be "eco-style" through two series of advertisements: "eco-style for society," which takes up community development through the introduction of smart communities, and "eco-style for lifestyles," which focuses on conserving energy in the home without sacrificing comfort.

"eco-style for society" "declaration version"
(newspaper advertisement)

"eco-style for society"
"Energy solutions" version (TV commercial)

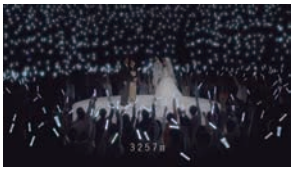
"eco-style for society"
"Building solutions" version (TV commercial)

"eco-style for lifestyles"
"Home solutions" version (TV commercial)

We have also run TV commercials and newspaper advertisements to announce that we delivered LED lighting to the Louvre Museum and explain that LED lamps have a long lifespan, about ten years.

LED lighting for the Louvre Museum (newspaper advertisement)

LED lighting for the Louvre Museum
(TV commercial)



LED ceiling lights for "LED 10 Years Live"
(TV commercial)

In addition, a special website to introduce the behind-the-scenes stories of the development of our FY2011 and FY2012 Excellent ECPs has been opened, a tie-up advertising project with Nikkei Business Publications, Inc.

ecomom special website
http://special.nikkeibp.co.jp/as/201301/ecp/ (in Japanese only)

Partnerships

Donation of LED lighting and a photovoltaic power generation system to Chusonji Temple's Golden Hall

The use of photograph is authorized by Chusonji

As part of efforts to aid recovery from the Great East Japan Earthquake, Toshiba Group donated LED lighting equipment and a photovoltaic power generation system to Chusonji Temple, one of the central assets constituting Iwate Prefecture's Hiraizumi, a World Heritage site.

The LED lighting equipment installed in the temple's Shinfukudo Hall reduces power consumption by about 41% compared to the previous level. It also creates a space that enhances the artistic and spiritual quality of the Golden Hall and the statues of the Buddha it houses.

Toshiba Group, in agreement with the philosophy of Hiraizumi, which strives to coexist with nature, also installed a 5-kW photovoltaic power generation system on the roof of a shop attached to the treasure museum. This system enables the temple to generate more electricity than it consumes in order to illuminate the Golden Hall without spoiling the view.

Photovoltaic power generation system

The use of photograph is authorized by Chusonji

Ancient lotus grown in the Yokohama Complex

As a token of appreciation for these donations, Chusonji Temple presented Toshiba with some roots of its precious ancient lotuses, which are now being grown at Toshiba's Yokohama Complex.

Toshiba won the 31st Japan Lighting Award (2013) for the Chusonji Temple lighting improvement project.

Installation of LED lights in the Louvre Museum

Mona Lisa

Regarding the lighting improvement project Toshiba began implementing with France's Louvre Museum in 2010, the company completed replacement of lights with LED lamps for major paintings in the galleries during June 2013.

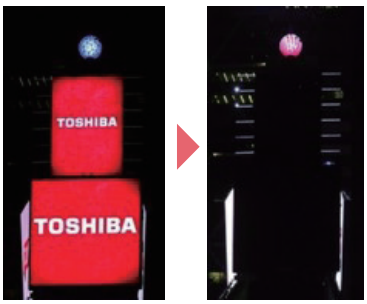
For the lighting system for Leonardo da Vinci's Mona Lisa, Toshiba employed a lighting method which allows all shades of color in the masterpiece to be faithfully reproduced. In order to prevent the painting from appearing brownish, the lighting system also minimizes the amount of ultraviolet rays and blue light.

The ceiling lights for the Red Room that houses Jacques-Louis David's The Consecration of the Emperor Napoleon I and the Coronation of Empress Josephine uses a new control power source, which maintains the lighting for the painting at a certain level so that visitors can appreciate the work at a fixed level of illumination. This has allowed power consumption to be reduced by about 60%.

After signing a partnership agreement in 2010, the lights for the Pyramid, Pyramidion, and the Colbert Pavilion were replaced with LED lights in December 2011 and the same was done for the Napoleon Court in May 2012. Through these efforts, the Louvre has reduced power consumption by about 73%. Additionally, plans call for the lighting for the square Carre Court and the Napoleon Hall to be replaced by LED lights during FY2014.

The Red Room

Involvement in environmental campaigns



Toshiba Vision in New York (Earth Hour 2013) (Before and after lights out)

Shanghai (Earth Hour 2013) (Before and after lights out)

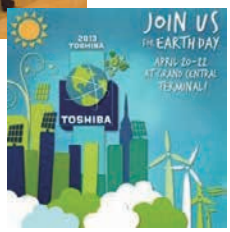
Toshiba Group companies in various countries around the world again participated in Earth Hour 2013, an event hosted by the World Wide Fund for Nature that calls for people to make a global effort to turn off lights at the same time. On March 23, the day of the event, Toshiba put out the lights for signboards and other facilities in major cities worldwide, including Sendai, Yokohama, Osaka, New York, Paris, London, Beijing, Shanghai, Hong Kong, Chongqing, Bangkok, Jakarta, Hanoi, Ho Chi Minh, Manila, Dubai, and Jeddah. In addition, the Group called on its employees to conserve electricity. Toshiba has participated in this event every year since officially announcing participation in Japan in 2010.

The Group also joined the Ministry of the Environment's Light-Down 2012 campaign, in which all participants turned off their lights at the same time on June 21 and July 7. On the days of the event, Toshiba turned off its signboards in Osaka and other major cities as well as the lights in its offices and other facilities, thus conserving about 12,000 kWh of electricity.

Participation in Earth Day NY 2013

Toshiba Group supported Earth Day NY 2013, an environmental event held by "Earth Day New York", an NPO, in New York City from April 20 to 22, 2013 in order to call people's attention to environmental issues. At Grand Central Terminal, one of the event's main venues, Toshiba set up a booth to encourage visitors to think about environmental issues while enjoying attractions that enabled them to experience the world of smart communities, the environmentally conscious products on display, children's presentations of eco-inventions, and so forth. During the three-day period, about 2,700 people visited the booth. At the same time, Toshiba ran photographs of visitors taken at the event site on the Toshiba Vision screen in Times Square in order to introduce how visitors enjoyed the event.

Toshiba booth in Grand Central Terminal



Introduction of Earth Day NY 2013 on Toshiba America Inc.'s official Facebook page

Visitors' photo on the Toshiba Vision screen

Advancing with Stakeholders

NPOs and NGOs

Holding stakeholder dialogues periodically

Toshiba Group periodically holds stakeholder dialogues in order to make effective use of stakeholders' opinions and requests for social and environmental management. In the April 2013 dialogue, the head of Toshiba CSR Office talked with Mr. Jeremy Prepscius, BSR regional vice president in Asia, a U.S. CSR promotion organization. He offered valuable opinions on the future direction of CSR management at Toshiba, including how Toshiba should respond to global issues while keeping the company's impact on society in mind.

To date, we have held dialogues with many stakeholders, including those overseas, and will continue doing so in the future in order to reflect their results in our future activities.

- **Stakeholder dialogue with a U.S. CSR promotion organization**
  Date: April 2013
  Venue: Toshiba head office
  Theme:
  - Presenting opportunities through stakeholder dialogues
  - Global CSR issues

2012 Toshiba Youth Conference for a Sustainable Future

In August 2012, Toshiba Group hosted the Toshiba Youth Conference for a Sustainable Future (sponsored by the Toshiba International Foundation and conducted by Be-Good Cafe, an NPO) in which high school teachers and students from Japan, the United States, Thailand, and Poland gathered to discuss environmental issues. The 2012 Conference, which was the fifth in the series, was held in Thailand, and 16 high school students and 9 teachers from the previously mentioned countries participated in the event. Under the theme "Achieving harmony with the Earth," they participated in a varied program while enjoying camp life. The program included exchanging opinions, visiting environmental facilities, experiencing rice cultivation, interviewing environmental experts, and editing electronic newspapers. Toshiba Group will continue to support younger students who think about environmental issues from a global viewpoint and act accordingly.

Group photograph of participants


Practice of rice cultivation


Presentation by high school students on what they learned

Editing of electronic newspapers (http://act-eco.net/aej/)

Local communities

Publication of site reports


Digest report of a production site

In order to present an overview of business activities at our production sites around the world and to have our environmental initiatives understood by local community residents, we disclose environmental information for each of our production sites. We summarized major environmental initiatives in FY2012 and presented digest reports on about 116 sites on our websites. At the same time, some of our production sites publish their own reports and present their information on the website. Copies of these reports are also distributed to visitors to our factories.

Environmental report of a production site
Site reports: http://www.toshiba.co.jp/env/en/company/region.htm

Cleaning campaign along nearby rivers


Garbage collected from the rivers

In June 2013, in order to contribute to the conservation of precious water resources and raise employees' environmental awareness, Toshiba Group companies in Singapore worked with local NPOs to clean and patrol the Singapore and Kallang Rivers and their environs. On the day of cleaning, 50 employees gathered and collected about 50 kg of garbage along the rivers.


Employees who participated in the campaign

Green curtain installation

Toshiba Ome Complex has installed a green curtain of luffas on its building to minimize building temperature increases due to the strong summer sunlight. The Complex uses this green curtain to effectively carry out exchange programs with local residents. Such programs include visits by local elementary school students to environmental facilities as part of their summer events, harvesting of luffas, and distribution of sponges made from luffas. The green curtain received the top award in the category for organizations in Ome City's Green Curtain Contest.


Experience of harvesting luffas


Green curtain of luffas

Shareholders and investors

Publication of the Annual and CSR Reports

Toshiba Group discloses financial information in the Annual Report and information on CSR (social and environmental) initiatives in the CSR Report.
The information in these reports is also disclosed on the website.

● Annual Report/Investor relations website

http://www.toshiba.co.jp/about/ir/en/finance/ar/index.htm

http://www.toshiba.co.jp/about/ir/index.htm

● CSR Report/CSR website

http://www.toshiba.co.jp/csr/en/report/download.htm

http://www.toshiba.co.jp/csr/en

Suppliers

Sharing information with suppliers mainly through briefings

Toshiba Group has established the Green Procurement Guidelines to procure products, parts, and materials with less environmental impacts from suppliers that actively promote environmental initiatives.
The Group has also produced copies of "Toshiba Group Procurement Policy" and "Supplier Expectations" (which summarize the Group's procurement policy and CSR/environmental requirements), distributed these to suppliers all over the world, and ensured that suppliers are fully aware of the requirements. In addition, meetings are held to explain the Green Procurement Guidelines to suppliers and surveys of suppliers' procurement policies (including self-checks) are carried out. In FY2012, Toshiba's procurement managers visited a total of about 850 suppliers to carry out on-site surveys. In the event that any problems with suppliers are found, the Group provides guidance and support; depending on the details of the case, actions are taken, including suspension of business relations.
Toshiba International Procurement Hong Kong Ltd. received the gold award in the "Export and Import Trade" sector at the 2012 Hong Kong Awards for Environmental Excellence, which are sponsored by the Hong Kong Productivity Council, for its continuous environmental and CSR education activities for suppliers implemented through periodic and on-site surveys.

● **Number of suppliers who participated in environmental briefings and number of suppliers surveyed (Toshiba Group)**
Participation in briefings: 22,190 companies
No. of suppliers surveyed: 23,309 companies
No. of on-site surveys: 5,080 companies
Cumulative numbers for Toshiba Group during the six years from FY2007 to FY2012

External organizations and administrative agencies

Involvement in international standardization initiatives

In order to contribute to the development of global frameworks to realize a sustainable society, Toshiba Group actively participates in and cooperates with international institutions, administrative agencies, and industry organizations such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), World Business Council for Sustainable Development (WBCSD), Electronic Industry Citizenship Coalition (EICC), and United Nations Global Compact.
Toward the realization of a sustainable society, in 2010 Toshiba Chairman Atsutoshi Nishida served as a member of the Executive Committee of WBCSD, an organization led by the CEOs of some 200 global corporations; he has served as one of its Vice Chairman since 2012. (For details, visit http://www.toshiba.co.jp/csr/en/policy/organization.htm#wbcsd)
In addition, two Toshiba experts have joined ISO/TC207/SC5 on life cycle assessment (LCA) to develop international standards for water footprints (for details, see page 34), LCA methods for organizations, and so forth. They participated in the plenary meeting of ISO/TC207 held in Botswana in June 2013 as representatives of Japan. As shown by their activities, they are working to establish practical LCA methods by making the most of the knowledge they have acquired through the introduction of LCA at Toshiba for 20 years.
Furthermore, as an advisory member, another Toshiba expert has participated in IEC/TC111/WG3 on the product's level of environmental consciousness since the working group was formed in 2005. As a project leader, the personnel is working to develop international standards for test methods for specified chemical substances that comply with the RoHS directive (For details, see page 35). At a meeting in Italy in June 2013, for instance, the personnel played an active role in establishing test methods to enhance overall industry competitiveness mainly by making the most of the knowledge of RoHS analysis technology the personnel acquired at Toshiba.

Cooperation between production sites and administrative agencies

Since 2009, Toshiba Yokkaichi Operations has given environmental classes by visiting nearby elementary schools using textbooks developed jointly with the Yokkaichi city and Mie prefectural governments. In FY2012, a total of 190 students from three elementary schools participated in these classes and learned about topics such as how to save energy at home.
In addition, Yokkaichi Operations actively coordinated with the Yokkaichi municipal government to set up meetings for exchanging energy-saving technologies among neighboring companies. In November 2012, the first meeting was held with the participation of seven companies.

Giving a class by visiting an elementary school

FY2012 textbook

Third-Party Evaluation

In order to improve the reliability of the environmental performance data presented in this report, Toshiba Group requested Bureau Veritas Japan Co., Ltd.[*1] to conduct a third-party verification of the data. Global data regarding the results for FY2012 was reviewed to check the processes of the collection, aggregation and internal verification of data and the accuracy of aggregated data.

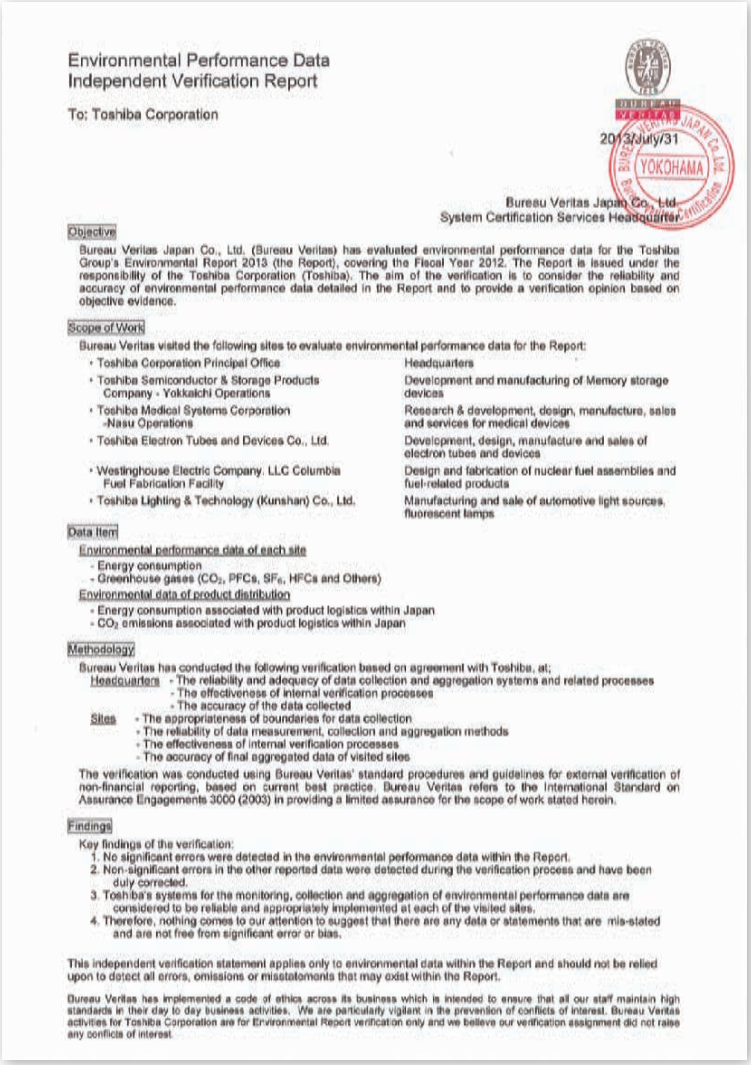
[*1] A certification organization that conducts inspections, reviews and certification regarding ships, buildings, health, safety, the environment, systems and consumer products (http://certification.bureauveritas.com)

Reference View

Bureau Veritas Japan (Bureau Veritas) has conducted Environmental Performance Data verification for the "Toshiba Group Environmental Report 2013." The following conclusions are made as a result of the verification.

1. Positive Findings

- A new function was added to the Environmental Management Information System (EMIS) enabling operators to input comments to it. As a result, big leaps compared to previous year would be accounted for with comments for the reason, and are easily detectible as an irregular value.
- At the Head Quarters' site visit, some data was found to be missing in the total aggregation; However the calculation function was effectively working and found out few errors doesn't affect to overall total GHG emissions.



Environmental Performance Data
Independent Verification Report

To: Toshiba Corporation

2013/July/31

YOKOHAMA

Bureau Veritas Japan Co., Ltd.
System Certification Services Headquarter

Objective

Bureau Veritas Japan Co., Ltd. (Bureau Veritas) has evaluated environmental performance data for the Toshiba Group's Environmental Report 2013 (the Report), covering the Fiscal Year 2012. The Report is issued under the responsibility of the Toshiba Corporation (Toshiba). The aim of the verification is to consider the reliability and accuracy of environmental performance data detailed in the Report and to provide a verification opinion based on objective evidence.

Scope of Work

Bureau Veritas visited the following sites to evaluate environmental performance data for the Report:

• Toshiba Corporation Principal Office	Headquarters
• Toshiba Semiconductor & Storage Products Company - Yokkaichi Operations	Development and manufacturing of Memory storage devices
• Toshiba Medical Systems Corporation -Nasu Operations	Research & development, design, manufacture, sales and services for medical devices
• Toshiba Electron Tubes and Devices Co., Ltd.	Development, design, manufacture and sales of electron tubes and devices
• Westinghouse Electric Company, LLC Columbia Fuel Fabrication Facility	Design and fabrication of nuclear fuel assemblies and fuel-related products
• Toshiba Lighting & Technology (Kunshan) Co., Ltd.	Manufacturing and sale of automotive light sources, fluorescent lamps

Data Item

Environmental performance data of each site
- Energy consumption
- Greenhouse gases (CO_2, PFCs, SF_6, HFCs and Others)

Environmental data of product distribution
- Energy consumption associated with product logistics within Japan
- CO_2 emissions associated with product logistics within Japan

Methodology

Bureau Veritas has conducted the following verification based on agreement with Toshiba, at;

Headquarters
- The reliability and adequacy of data collection and aggregation systems and related processes
- The effectiveness of internal verification processes
- The accuracy of the data collected

Sites
- The appropriateness of boundaries for data collection
- The reliability of data measurement, collection and aggregation methods
- The effectiveness of internal verification processes
- The accuracy of final aggregated data of visited sites

The verification was conducted using Bureau Veritas' standard procedures and guidelines for external verification of non-financial reporting, based on current best practice. Bureau Veritas refers to the International Standard on Assurance Engagements 3000 (2003) in providing a limited assurance for the scope of work stated herein.

Findings

Key findings of the verification:
1. No significant errors were detected in the environmental performance data within the Report.
2. Non-significant errors in the other reported data were detected during the verification process and have been duly corrected.
3. Toshiba's systems for the monitoring, collection and aggregation of environmental performance data are considered to be reliable and appropriately implemented at each of the visited sites.
4. Therefore, nothing comes to our attention to suggest that there are any data or statements that are mis-stated and are not free from significant error or bias.

This independent verification statement applies only to environmental data within the Report and should not be relied upon to detect all errors, omissions or misstatements that may exist within the Report.

Bureau Veritas has implemented a code of ethics across its business which is intended to ensure that all our staff maintain high standards in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest. Bureau Veritas activities for Toshiba Corporation are for Environmental Report verification only and we believe our verification assignment did not raise any conflicts of interest.

Improvement against the last year's themes

- Fuel consumption of vehicles owned by outsourced transportation contractors, which does not owe product shipment, has been mistakenly added at a visited site. It supposed that vehicle fuel is managed at different sections apart from energy management section (for example, general affairs section) in the role.

Opportunities for Improvement

- At one visited site, electricity consumption of contract companies had been included in the overall data reporting. The sub-meter of contract companies was not managed enough. The sub-meter for this source should be properly and accurately operated under appropriate management to ensure data reliability.
- It was found that some calorific values and CO_2 emission coefficients (except Japan) designated in the internal Toshiba rule were not applied. It is understood that the reference update had been unacknowledged and as a result no such amendments were made to keep this calculation and conversion process up to date. The Head Quarters should improve that they can ensure to check the calorific values and coefficients periodically.
- The calculation sheet for transportation CO_2 emissions per destination had been revised. The updated calorific value and CO_2 emission coefficients were also incorporated. However, one site was seen to be using outdated values and the Head Quarters should ensure that all sites are notified to adopt the updated values.

Evaluation by External Parties (FY2012* result)

* The list below includes recently received awards.

Award title	Award-winning item(s)	Evaluated entity
Evaluation of products and technologies		
9th Eco-Products Awards, Eco Product Category, Eco Products Grand Prize Promotion Council's Special Award (Excellence Award)	X-ray diagnostic CT systems using adaptive iterative dose-reduction 3D (AIDR 3D) technology (Alexion™ TSX-032A and 9 other models)	Toshiba Medical Systems Corporation
9th Eco-Products Awards, Eco Product Category, Eco Products Grand Prize Promotion Council's Special Award (Excellence Award for Energy-saving Service)	Smart DC Office, a system for building direct-current distribution networks in buildings with photovoltaic power generation systems and storage batteries	Toshiba Corp. (shared by Taisei Corp.)
9th Eco-Products Awards, Eco Service Category, President of the Eco Products Grand Prize Promotion Council's Award (Excellence Award)	Next generation ECHONET Lite-certified cloud home energy management system (HEMS)	Toshiba Lighting & Technology Corp.
2012 Grand Prize for Excellence in Energy Efficiency and Conservation, Product and Business Model Category, Chairman's Prize, Eco-Efficiency Category, the Energy Conservation Center Japan	Drum-type washer dryer ZABOON TW-Z9500, TW-Z8500, and TW-Q900	Toshiba Home Appliances Corporation
"Cho" Monozukuri Innovative Parts and Components Award 2012	eco-chips	Toshiba Corp. Corporate Research & Development Center
9th LCA Society of Japan Awards, Honorable Award	Carrying out of water footprint initiatives at Toshiba Group	Toshiba Corp.
9th LCA Society of Japan Awards, Honorable Award	Promotion of environmental management in the medical equipment field utilizing LCA	Toshiba Medical Systems Corporation
FY2012 Minister of Education, Culture, Sports, Science and Technology's Award for Science and Technology Science and Technology Award (Development Category)	Development of a variable-cylinder twin rotary compressor for home air conditioning systems	Toshiba Carrier Corporation Ken Tominaga, Shogo Shida, Koji Hirano, and Shoichiro Kitaichi
FY2012 Japan Society of Mechanical Engineers Award (Technology)	Development of a high-efficiency, variable-cylinder rotary compressor	Toshiba Carrier Corporation Takuya Hirayama, Isao Kawabe, Koji Hirano, and Hitoshi Konemura
2011 Excellent Paper Award from the Japan Environmental Management Association for the "Environmental Management" industry bulletin	"Making the effects of business activities on ecosystems visible—Toshiba Group initiatives"	Yoshinori Kobayashi, Corporate Environmental Management Division
Evaluation of business activities		
Awarding of Reduce, Reuse, Recycle Promotion Manager (Minister Prize of Economic, Trade and Industry)	3R activity entirely participated by employees and communication with neighboring residents.	Toshiba Corp. Semiconductor & Storage Products Company Oita Operations
2012 Reduce, Reuse, Recycle Promotion Association Chairman's Award	Manufacture of resource-recycling NAND flash drives	Toshiba Corp., Yokkaichi Operations
2012 Reduce, Reuse, Recycle Promotion Association Chairman's Award	Improvement of the recycling rate to achieve zero emissions	Toshiba Corp. Ome Complex
Awarding of Excellent Energy Conservation Factory & Building recognized by Director-General, Chubu Bureau of Economy, Trade and Industry	Promotion of energy conservation	Toshiba Corp., Yokkaichi Operations
Awarding of Excellent Energy Conservation Promotion Manager recognized by Director-General, Kyushu Bureau of Economy, Trade and Industry	Planning and implementing energy-saving measures and promoting energy-saving-technologies across departments by communicating inside and outside the factory.	Toshiba Corp. Semiconductor & Storage Products Company Hiroyuki Shimokawa
Awarding of Excellent Energy Conservation Promotion Manager recognized by Director-General of Energy Conservation Center, Japan Tokai Branch	Promotion of energy conservation	Two employees from Yokkaichi Operations, Toshiba Corp. Haruyuki Ando and Toshiya Hattori
Encouragement Award (Contribution to Energy Conservation), Kawasaki City's First Smart Lifestyle Grand Prize	Contribution to mitigation of climate change by reducing power consumption at a production site	Komukai Complex, Toshiba Corp.
Chairman's Award of Iwate Prefecture Environment Preservation Liaison Council	Excellent Factory Award for Environment Preservation	Iwate Toshiba Electronics Co., Ltd.
FY2012 Fukushima Protocol Award (Office Category)	Contribution to mitigation of climate change by reducing in CO_2 emissions at business sites	Toshiba Alpine Automotive Technology Corp.
Top Award in the FY2012 Ome City's Green Curtain Contest in the category for organizations	Green curtains for building windows	Toshiba Corp. Ome Complex
Silver Prize in International Category, Green Apple Award	Envioronmental consideration at 5th manufacturing building	Toshiba Corp., Yokkaichi Operations
The Environmental Leadership Program for Competitiveness	Overall environmental activities	Landis + Gyr AG, Reynosa
The Program for Sustainable Development - State of Tamaulipas, Mexico	Overall environmental activities	Landis + Gyr AG, Reynosa
Mayor's Proud Partner Award, Houston, Texas	Overall environmental activities	Toshiba International Corp.
Don Emilio Abello Outstanding Energy Efficiency Award	Energy efficiency as a whole - it included technology and systems	Toshiba Information Equipment (Philippines), Inc.
Acquisition of Kunshan City's corporate environmental green level chosen as one of Kunshan City's top ten foreign companies investing in green development	Environmental conservation activities	Harison Toshiba Lighting (Kunshan) Co., Ltd.
Corporate Social Responsibility Award 2012	CSR activities and their results from 2010 to 2012	Toshiba Vietnam Home Appliances Co., Ltd.
2012 Asia's Best Employer Brand Awards	Best management practices that contributed to the environment	Toshiba Thailand Co., Ltd.
White Ocean Strategy Award 2012	Award for the continuous contribution to Environment and Community	Toshiba Thailand Co., Ltd.
Green Pavilion Award	Attitude toward environmental stewardship and eco-products	Toshiba Thailand Co., Ltd.
Chosen as one of the companies practicing advanced management of hazardous waste in the Hangzhou Economic and Technological Development Zone in FY2012	Environmental protection activities to manage hazardous waste	Toshiba Information Equipment (Hangzhou) Co., Ltd.
The Green Enterprise Certificate awarded by the Zhejiang Provincial Government	Environmental protection activities as a company continually striving for cleaner production processes	Toshiba Information Equipment (Hangzhou) Co., Ltd.
Green business award	Production and business activities related to environmental protection and waste disposal	Toshiba Vietnam Home Appliances Co., Ltd.
Chosen by Dalian City as a company practicing advanced disposal of solid waste	Overall management of solid waste	Toshiba Dalian Co., Ltd. (China)
2012 Hong Kong Awards for Environmental Excellence sponsored by the Hong Kong Productivity Council Gold award in the "Export and Import Trades" sector	Continuous environmental and CSR education for suppliers, carried out mainly through periodic and on-site surveys	Toshiba International Procurement Hong Kong Ltd.
Evaluation of communication programs		
National Federation of Industrial Waste Management Associations "CSR2 Project" National Youth Division Council President's award in the category of compliance	ISO26000 (social responsibility standards) Publication of social and environmental reports in line with the seven core subjects	Term Corp.
FY2011 Best Report Award, Dalian City Sustainable Development Report (Environmental Report)	Publication of information on environmental conservation activities and their results	Toshiba Dalian Co., Ltd. (China)
Chosen by Dalian City as an advanced environmental communication and education organization during FY2011-2012	Environmental communication and education	Toshiba Dalian Co., Ltd. (China)
Chosen by Dalian City as an advanced environmental protection volunteer organization in FY2012	Environmental protection volunteer activities	Toshiba Dalian Co., Ltd. (China)
"With 10 Years of Life" advertisement for LED light bulbs received the following awards: 41st Fuji Sankei Group Advertising Award, Nikkei BP Ad Award, 91st New York Art Directors Club (ADC) Award 60th Asahi Advertising Award, 65th Dentsu Advertising Award Spikes Asia Festival of Creativity 2012 32nd Newspaper Advertising Prize, 52nd Contest for Advertisements Beneficial to Consumers 16th Environmental Communication Awards		Toshiba Corp.
47th Japan Industrial Advertising Award and 61st Nikkei Advertising Award	Advertisement of LED lighting for the Louvre Museum	Toshiba Corp.
16th Environmental Communication Awards	Environmental Report Award (Minister of the Environment's Award): Toshiba Group Environmental Report 2012 Environmental TV Commercial Category (Top Prize): Advertisement of LED lighting for the Louvre Museum	Toshiba Corp.

Evaluation by the mass media and SRI Indices		
16th Nikkei Environmental Management Level Survey	First place (manufacturing)	Toshiba Corp.
CDLI (Carbon Disclosure Leadership Index)	Chosen as one of 23 companies that excels in CDLI from among the Japan 500 companies	Toshiba Corp.

Chapter 6

Advancing to the Next Stage

Toshiba will introduce T-Compass, a new concept of environmental management.

Toshiba Group is promoting environmental management by striving to achieve two types of goals: long-term goals based on Environmental Vision 2050 and short-term goals that can be attained by taking various measures in the immediate future. In FY2012, the Group formulated and announced the Fifth Environmental Action Plan, which aims to integrate business activities with environmental management.
From FY2013, we will introduce T-Compass, a new concept of environmental management. Based on the knowledge we have acquired so far, we aim to establish our position as one of the world's foremost eco-companies by strategically addressing new global trends in environmental management and advance and expand our environmental management systems even further.

Toshiba Group's own criteria

1993: Application of LCA

- Development and proliferation of databases and calculation tools

2003: Introduction of Factor T, an indicator of eco-efficiency

- Development of Toshiba's unique eco-efficiency assessment method

New global trends

Wider areas covered

Scope 3 is a standard for calculating greenhouse gas emissions throughout the entire corporate supply chain. Toshiba uses this standard to publish data on greenhouse gas emissions.
(For details, see page 43.)

Scope 3 Standard

LCA method that covers the life cycle of organizations. This method is currently under consideration at ISO/TC207/SC5/WG10. Toshiba has sent its experts to participate in the standardization of the method.

Organizations' LCA

Covering all environmental aspects of business activities

Environmental footprints

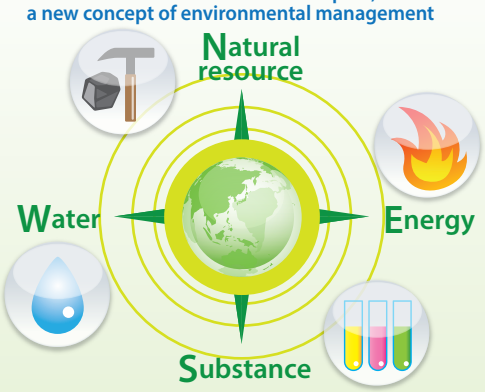
An environmental assessment standard on life cycles for products that is under discussion in Europe. Methodologies are under discussion regarding 14 types of environmental indicators on the assumption that such indicators will be used as benchmarks for comparison with other companies.

Water footprints

An environmental assessment method for water resources. This method is currently under consideration at ISO/TC207/SC5/WG8. Toshiba has sent its experts to participate in the standardization of the method.

Toshiba Group's "compass" for its environmental activities

2013: Introduction of T-Compass, a new concept of environmental management



● Visualizing the environmental impacts in the four domains

Divide the environmental aspects of business activities into four domains and pursue environmental management progress using several indicators that are considered to be important in each area rather than a single indicator

● Giving thought to regional characteristics

Develop an environmental compass for each region based on the degree of importance of environmental issues in each country and territory

● Stepping up life cycle management

Reduce the environmental footprints of products and services as well as organizations through collaboration in the supply chain and provision of products with the highest level of environmental performance

Representing the environmental issues to be addressed as symbols of the four cardinal compass points

Responding to climate change and energy issues (E) | Minimizing the risks involved in chemical substances (S) | Minimizing the amount of water resources consumed (W) | Minimizing the amount of natural resources consumed (N)

* T-COMPASS : Toshiba Comprehensive environmental database and its Practical Application to Simplified and/or Streamlined LCA

Characteristics of T-Compass

As we strive to help realize a sustainable society, responding properly to energy problems and climate change is our highest priority. In addition to these global environmental issues, however, there are many local agendas such as factors influencing human health, ecosystems, and resources, and all these issues must be solved comprehensively. As Toshiba Group's compass for it's environmental activities, T-Compass uses the letters standing for the four cardinal points (north, south, east, and west) to represent the environmental issues the Group should address. The Group's approach of reducing overall environmental impacts remains unchanged. We believe that by presenting our environmental contributions in concrete terms in four major domains, Toshiba Group will be able to further share the social values that we provide with stakeholders inside and outside the Group. We aim to disclose environmental information in an easier-to-understand way while carrying out the most advanced discussions on environmental management.

● **Characteristic 1: Visualizing the environmental issues through Toshiba Group's unique radar chart**

T-Compass expresses LCA-based environmental indicators using its own radar chart. Symbols of the four cardinal compass points are used to represent the four major domains all Toshiba Group companies should address. In addition, other highly relevant environmental indicators are arranged appropriately on the compass to make reductions in overall environmental impacts easy to understand visually.

In addition to typical environmental indicators in the four major domains, other indicators are also defined in detail (up to eight or twelve points on the compass), thus enabling the disclosure of the environmental information most appropriate to the recipients (see the table below).

As for indicators whose calculation method is still under discussion and has not been reached agreement, they will gradually be disclosed while referring to trends in international discussions.

● **Characteristic 2: Giving thought to regional characteristics**

Toshiba Group will use different environmental indicators for different regions in order to appropriately assess local environmental impacts such as air pollution, water contamination, and effects on the conservation of biodiversity. The Japanese version of the Life-cycle Impact assessment Method based on Endpoint modeling (LIME), which the Group currently uses, covers only evaluation coefficients based on data and values in Japan. Cutting-edge research and development are currently being carried out to adapt this method to various regions globally, and we will introduce new evaluation coefficients as soon as they become available.

● **Characteristic 3: Utilizing LCA databases**

Comprehensive databases of environmental impacts are indispensable for companies conducting life cycle assessments. Toshiba Group has independently developed databases of industrial input-output tables in order to assess the impacts of all its products and services on the environment; in the future, the Group will further improve these databases and apply them in combination with databases developed by other companies and organizations.

Environmental indicators (examples)	
4 indicators	8 indicators/12 indicators
Natural resource consumption [tons] (N)	Metal resources [tons] or waste [tons]
	Forest resources [m³] or land use [m²]
	Fossil fuels [MJ]
Greenhouse gas missions [tons] (E)	Greenhouse gas emissions [tons]
	Air pollution [UAF] or Acidification [AP]
Chemical substance risks [*] (S)	Effects on human health [HTP] or effects on ecosystems [AETP]
	Eutrophication [EP]
Water consumption [m³] (W)	Water consumption [m³]

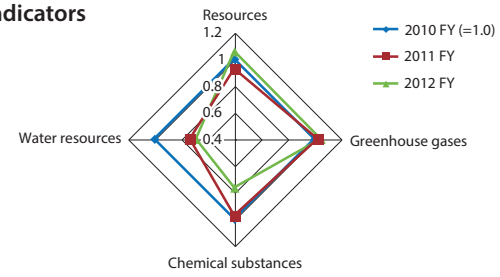
* To be determined

Examples

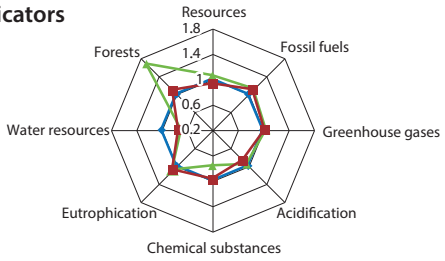
● **Toshiba Group's environmental footprint**

Toshiba Group's environmental footprint represents the impacts of all its businesses on the environment after taking such businesses' life cycles into consideration. (For a detailed breakdown of the data, see the next page.) In the future, the Group will also disclose the environmental footprints of its individual products and services.

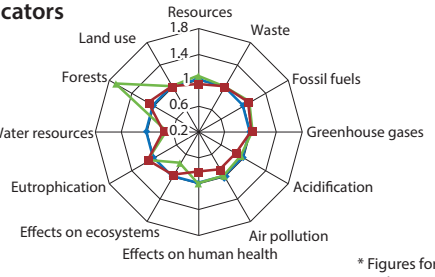
■ **4 indicators**



■ **8 indicators**



■ **12 indicators**



* Figures for non-calculated indicators are noted as 1.

Advancing to the next stage of environmental management

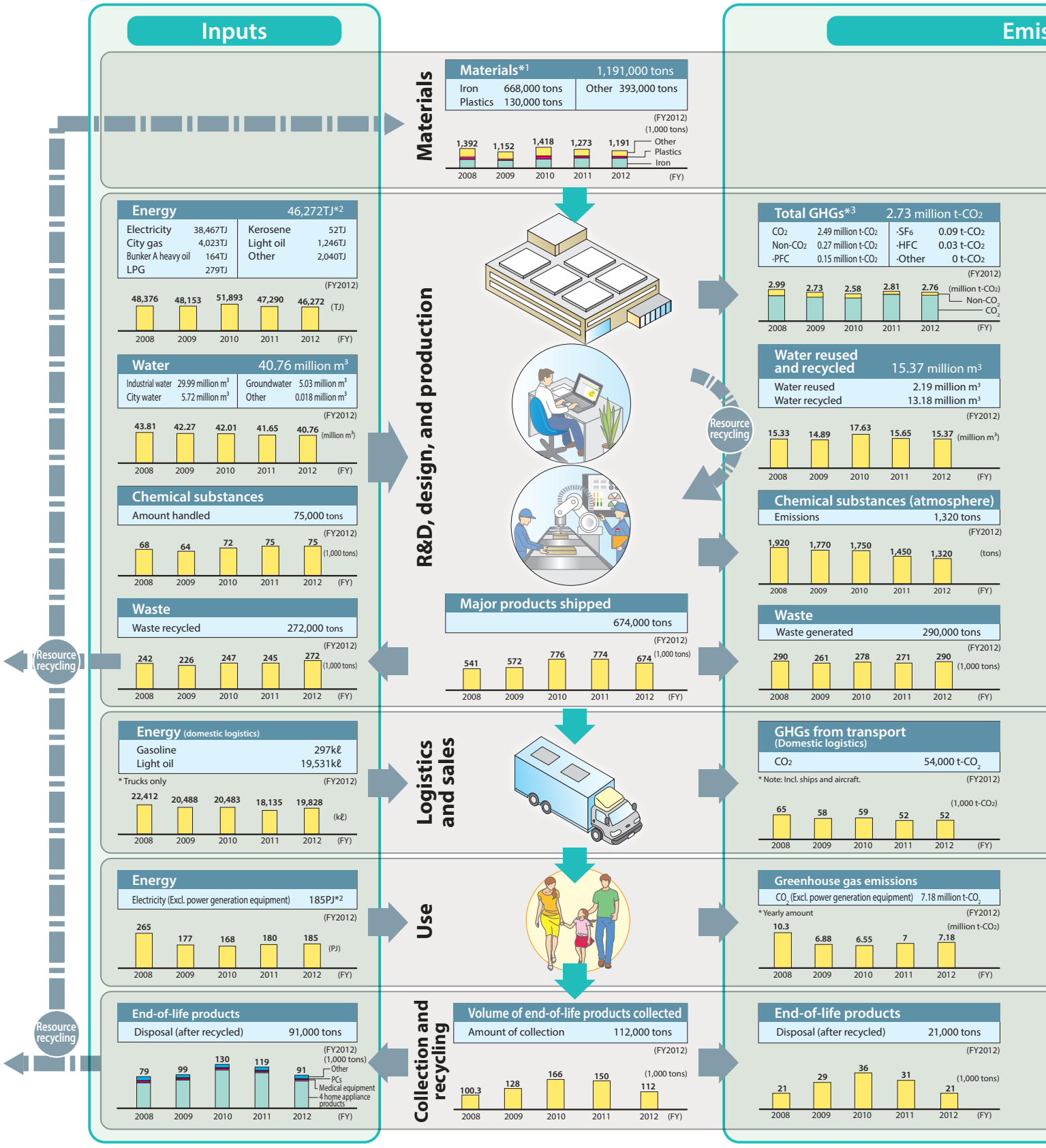
This year, 2013, marks the 20th anniversary of Toshiba Group's application of LCA, and the 10th anniversary of the group's introduction of Factor T. For the next decade, the Group is introducing T-Compass, a new concept of environmental management, in order to add a new approach.

First, we will reorganize and systematize all the environmental initiatives we have implemented thus far into the four points of the compass, and restructure them so that Toshiba Group can provide social values as it strives to solve all of these environmental issues. In addition, we will develop an environmental compass for each region by paying attention to the significant environmental aspects of business activities in each region. This will lead to the upgrading and expansion of measures that are already being promoted under the Fifth Environmental Action Plan, such as making excellent ECPs fit for local markets based on local preferences and encouraging all employees to participate in Global Environmental Action in each region so that all such actions are connected at the global level.

Toshiba Group aims at global environmental management, which is not built on a uniform framework based on Japanese values but rather is oriented toward the diversity of countries and territories in the world. We also aim to establish our position as one of the world's foremost eco-companies by continuing to run one step ahead of others as we strive to solve environmental issues.

Overview of Environmental Impacts

Toshiba Group, as shown in the material flow below, is proceeding to quantitatively analyze the environmental impact at each stage of the product/service life cycle—from materials procurement, manufacturing, and distribution to customer usage, product retrieval, and recycling. Furthermore, we are carrying out overall assessments on the environmental impact of chemicals,



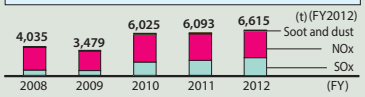
*1 Material inputs are calculated based on the Estimation Method for Material Inputs Using Input-Output Table (EMIOT), a method independently developed by Toshiba Group. ("EMIOT" : Estimation method for Material-inputs using Input-Output Table) EMIOT uses ratios of resources used per unit production, which are prepared based on the Input-Output Table, to calculate total material inputs.One distinctive feature of the method is that input-output analysis is applied only to the flow of resources from upstream to downstream. Another is that the volume of such resources by industrial sector is stored in a database.Using this method, it is possible to calculate weights of input resources by resource type from the data on procurement (monetary value) by resource category, which are gathered by materials procurement divisions.Therefore, data can be gathered not only on direct materials, but also indirect materials.Previously, it was difficult to clarify the

greenhouse gas emissions, and resources/energy using the Life-cycle Impact assessment Method based on Endpoint modeling (LIME). (For details, see page 37.) We realized that the environmental impact is most significant during the material procurement, customer usage, and manufacturing stages of the product life cycle in that order. As such, we feel that it is extremely important to implement effective initiatives based on environmental impact assessments carried out across the entire product life cycle. Moving forward, we are expanding the items on which we are collecting data and are striving to improve the precision of the data. This data was collected from 590 Toshiba Group companies (actual results for FY2012).

ssions

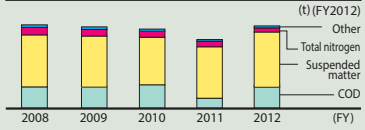
Emissions to atmosphere

SOx	2,610 t
NOx	3,861 t
Soot and dust	144 t



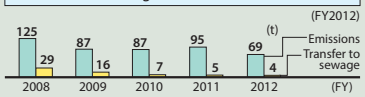
Emissions to hydrosphere

Total wastewater	33.84 million m³	Total nitrogen	165 t
COD	723 t	Other	49 t
Suspended matter	1,929 t		



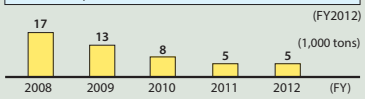
Chemical substances*4 (hydrosphere)

Emissions	69 t
Transfer to sewage	4 t



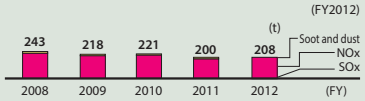
Waste

Final disposal volume	5,000 tons

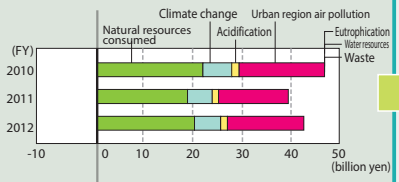


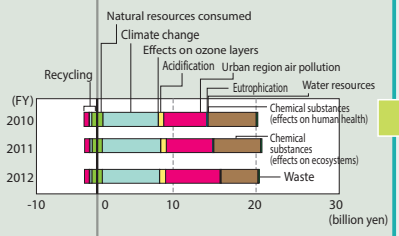
Emissions to atmosphere during transport

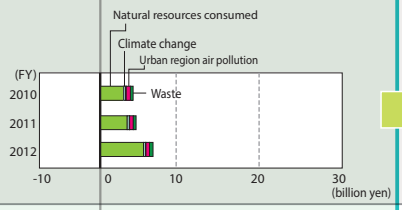
SOx	0.4 t
NOx	196.1 t
Soot and dust	12 t

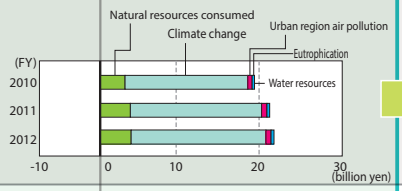


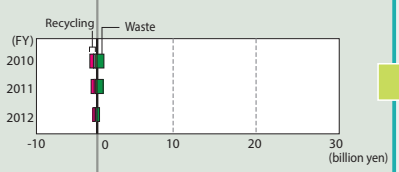
Environmental impacts (Overall evaluation)











Major initiatives

- Efficient use of resources ····· P32
- Promotion of green procurement ····· P36
- Reduction in GHG emissions ···· P41
- Reduction in energy-derived CO_2 emissions ····· P41
- Reduction in the total waste volume and the final disposal volume ····· P45
- Reduction in the volume of water received ····· P46
- Reduction in and management of emissions of chemical substances into the atmosphere and hydrosphere ····· P47
- Responses to environmental risks ····· P49
- Reduction in CO_2 emissions associated with product logistics ····· P42
- 3R initiatives for packaging materials ····· P34
- Reduction in CO_2 emissions through eco products ····· P27
- Increase in the volume of end-of-life products recycled ·· P51

*2 The joule is a unit of energy measuring mechanical work, heat, and electricity. One joule equals about 0.239 calories. 1 TJ = 10^{12} J; 1 PJ = 10^{15} J
*3 In this table, the CO_2 emission coefficient for electricity in Japan is 3.50 t-CO_2/10,000 kWh in FY2010, 4.76 t-CO_2/10,000 kWh in FY2011, and 4.87 t-CO_2/10,000 kWh in FY 2012.
*4 The volume of hydrogen fluoride and its water-soluble salt emitted into hydrosphere since FY2009 is calculated to be zero because hydrogen fluoride used becomes non-water-soluble salt through post-use treatment.

Committed to People, Committed to the Future.

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Inquiry page on Toshiba website
URL : http://www.toshiba.co.jp/env/en/contact/

The report is available on the Toshiba website.
URL : http://www.toshiba.co.jp/env/en/

Toshiba is conducting an online questionnaire. Please give us your opinions or comments on the report for future reference.

URL : https://www.webcom.toshiba.co.jp/csr/env.php

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