TOSHIBA

Leading Innovation

2010 Environmental Report

TOSHIBA eco style

Toshiba Group Business Overview

Company Overview (as of March 31, 2010)

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	6,381.6 billion yen
Number of employees (consolidated)	203,889

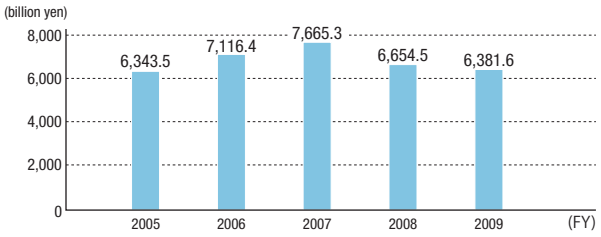
CSR-related international charters/guidelines Toshiba endorses

- United Nations Global Compact
- Global Reporting Initiative (GRI)

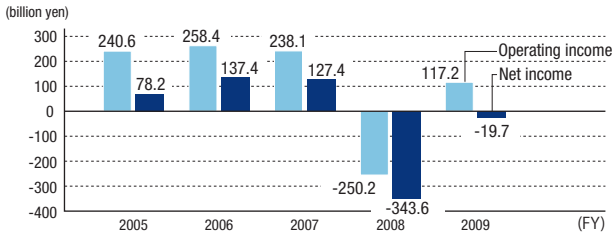
Number of shareholders	473,230
Number of shares issued	4,237,600,000 shares
Number of consolidated subsidiaries	542 (227 in Japan, 315 overseas)
Number of affiliates accounted for by the equity method	200
Stock exchange listings	Tokyo, Osaka, Nagoya, London

Financial Results (Consolidated)

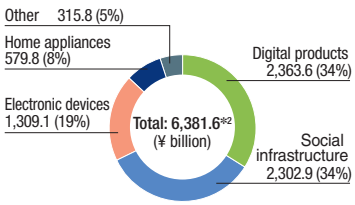
Net Sales



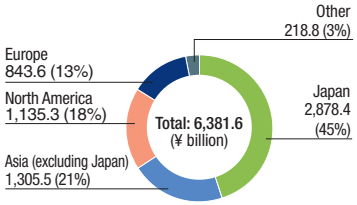
Operating Income & Net Income



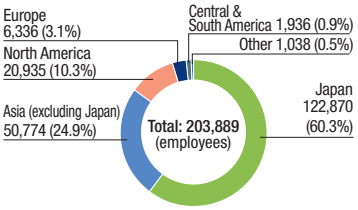
Sales by Business Segment*1 (FY2009)



Sales by Region (FY2009)



No. of Employees by Region (as of March 31, 2010)



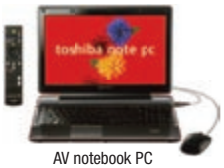
*1 Percentage of sales for each segment to total sales before exclusion of interdivisional sales.
*2 Consolidated net sales.

Main Products and Services

Digital Products


LCD TV (LED REGZA)


Blu-ray disc recorder (VARDIA)


AV notebook PC (dynabook Qosmio)


Hard disk drive

Social Infrastructure Systems

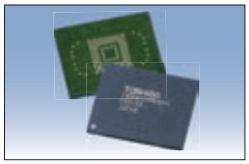

Turbine for power generation


Ultra-high voltage (1,100 KV) power generation and transmission plant

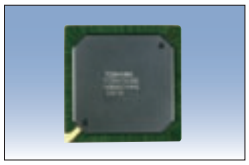

Medical CT scanner


Elevators for the highest building in China (Shanghai World Financial Center)

Electronic Devices


Large-capacity NAND flash memory drives


Power source device


System LSI for the REGZA


High-resolution 3D display

Home Appliances


Washing machine with dryer


LED lights


Refrigerator


Room air-conditioners

Please refer to the Toshiba Annual Report 2010 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 put together detailed environmental information on Toshiba Group in book form so that it can be provided to all stakeholders of the Group. This year's edition expanded its content to include new environmental management concepts, efforts to preserve biodiversity, and initiatives to prevent global warming at the plant and product levels. All information in this report is disclosed on Toshiba's website. Additional information will also be provided there as it becomes available.

■Providing detailed environmental information

Environmental Report 2010 and website for environmental management

▶ http://www.toshiba.co.jp/env/en

■Providing financial information

Annual Report 2010 and website for investor relations

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

■Reporting on CSR activities (social and environmental) in general

CSR Report 2010 and Toshiba's website for CSR activities

▶ http://www.toshiba.co.jp/csr/en

●Organizations covered

In principle, this report covers Toshiba Group (Toshiba Corporation and its 542 consolidated subsidiaries in Japan and overseas). In cases where the report covers entities other than Toshiba Group, the individual entities are indicated.
Note: "Toshiba" in this report means Toshiba Corporation.

●Reporting period

This report focuses on the results of activities in FY2009 (April 1, 2009 to March 31, 2010), but includes some activities continuing from the past and some more recent activities.

●Publication

The current issue was published in September 2010 (The publication of the next issue is scheduled for September 2011, and the previous one was published in October 2009).

●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 2007
  Environmental Accounting Guidelines 2005

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.

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CEO Commitment

We will contribute to the creation of a sustainable society through our environmentally conscious processes, products and technologies in order to become one of the world's foremost eco-companies.

Norio Sasaki
Director
President and CEO
Toshiba Corporation

Environmental Management Based on Integrity

When I first joined Toshiba, I was engaged in designing a piping system for a nuclear power plant. Within the construction specifications, I came across the expression "pressure integrity." A nuclear power plant cannot be constructed or operated without maintaining integrity. The word "integrity" in this case means comprehensive reliability rather than a simple stability of the system.

I consider integrity to be equally important in environmental management. In order to gain public trust, it is essential that in addition to ensuring legal compliance, we make serious efforts to reduce environmental risks and disclose information based on the Toshiba Group Standards of Conduct. To maintain our integrity, it is particularly important to obtain numerical data on the environmental performance of Toshiba Group and release the information to the public, thereby fulfilling our commitment for the future.

Working to Become One of the World's Foremost Eco-companies

As a corporate citizen of planet Earth, Toshiba Group is striving to become one of the world's foremost eco-companies through its efforts to create a world where people enjoy richer lifestyles in harmony with the Earth. We will minimize the environmental impact of our business activities and contribute to reducing global environmental impact to a sustainable level through our products and services. We will also contribute to improving the quality of life by providing comprehensive support for activities in a wide range of areas from the life of individuals to the construction of social systems.

In order to become one of the world's foremost eco-companies, Toshiba Group will develop three "Green" initiatives under its new "Toshiba eco style" global brand: Greening of Process, Greening of Products and Greening by Technology.

Greening of Process

The Greening of Process refers to our environmentally conscious manufacturing processes. Manufacturing activities of a company can cause impacts on the environment, including energy consumption, CO_2 emissions, water discharges and waste. We consider that initiatives aimed at minimizing environmental impact through the improved efficiency of manufacturing facilities and processes are one of the basic requirements for integrity.

We will ensure the implementation of our plan to reduce greenhouse gas emissions by using LED lights and high-efficiency equipment in offices and by adopting efficient measures to save energy required for clean rooms and manufacturing equipment. Through these initiatives, we will fulfill our corporate responsibility in manufacturing activities.

Minimizing the environmental impact caused by the manufacturing of electronic devices, which account for 60% of Toshiba Group's CO_2 emissions, is an enormous challenge for us. The new factory that is being constructed at our Yokkaichi Operations site is estimated to reduce CO_2 emissions by 12% compared with existing factories. To achieve this goal, it will be necessary to invest in our air conditioning facilities and implement detailed control of manufacturing processes. We will develop manufacturing methods that can minimize CO_2 emissions per business activity in each business segment.

Greening of Products

The Greening of Products refers to initiatives aimed at achieving the highest level of environmental performance in the development of all categories of products. We will continue to provide customers with products and services that meet the needs of society by using cutting-edge technologies.

Toshiba has been manufacturing incandescent light bulbs ever since its establishment. We have manufactured as many as 4 billion incandescent light bulbs over the past 120 years. However, we now have new lighting technologies that provide higher levels of energy-saving performance using two entirely different lighting methods: bulb-type fluorescent lights and LED lights. Based on our conviction that now is the time for the entire world to make the conversion from incandescent lights to new lighting systems, we terminated the production of general-use incandescent light bulbs in March 2010. We believe that in order to accelerate the global trend to save energy, it is necessary for Toshiba, the first manufacturer of incandescent light bulbs in Japan, to take the initiative in showing the way to the future. We will provide lighting to society as we have been doing in the past, while contributing to saving energy through the results of innovation. We will continue to provide products that support our comfortable lifestyles and contribute to environmental conservation at the same time.

Greening by Technology

Greening by Technology refers to initiatives aimed at making contributions through environmental technologies – more specifically, low-carbon energy technologies. The whole world is paying close attention to Japanese technologies for mitigating climate change, which is a concern shared by countries around the world. Toshiba Group, in particular, is engaged in initiatives in almost all areas of technology required to achieve the reduction in CO_2 emissions estimated by the International Energy Agency, ranging from energy supply, including power generation, to energy consumption, which is represented by Toshiba Group's energy-saving products.

The importance of nuclear power generation as a zero-emission power source that does not emit CO_2 during the operation is now being rediscovered. However, although nuclear power is a source of conventional energy that can provide a stable power supply, the safe and secure operation of nuclear power generation facilities requires advanced technologies for facility management and maintenance. Toshiba Group will be able to make significant contributions to the world in this field.

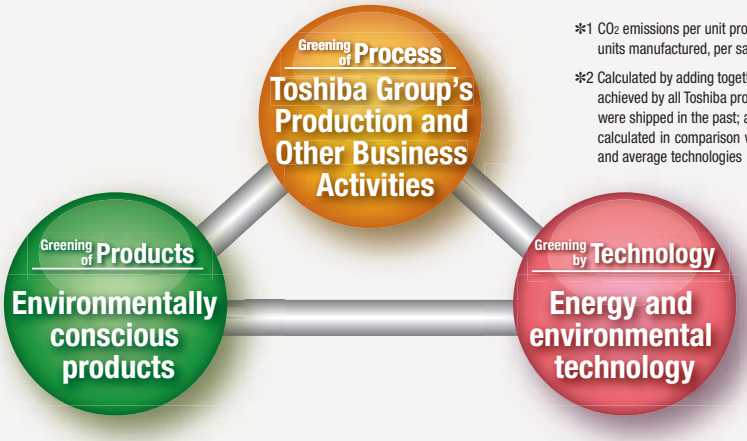
There are also heightened expectations for solar and wind power generation. In order to make effective use of these sources of renewable energy, it is essential to promote the development of smart grids (next-generation power supply networks) and rechargeable batteries. However, circumstances surrounding power supply networks vary from one country to another. Many of the emerging countries do not have the infrastructure required for power supply networks. There is a need therefore to propose systems that best suit the needs of individual countries and to make contributions in accordance with local circumstances. Meanwhile, systems for thermal power generation, including coal-fired thermal power generation for which there is an abundance of resources available, can be relatively easily introduced in emerging countries. In this field, we can contribute to the mitigation of climate change by commercializing and promoting the carbon dioxide capture and storage (CCS) technology. Toshiba Group will continue to make global contributions through these technologies.

Environmental Management Integrated with Business

By developing these initiatives for all products and systems provided by Toshiba Group, we will be able to achieve an annual reduction of 750 million tons of CO_2 emissions worldwide in FY2020. Although it is not easy to promote measures for business management and environmental management both at the same time, we are firmly committed to meeting our challenge in order to become one of the world's foremost eco-companies.

Improving the efficiency of manufacturing facilities and processes

Striving to achieve the lowest CO_2 emissions*1 in the world



*1 CO_2 emissions per unit production (per production, per number of units manufactured, per sales, etc.) by business segment

*2 Calculated by adding together annual reductions in CO_2 emissions achieved by all Toshiba products in operation, including those that were shipped in the past; annual reductions in CO_2 emissions are calculated in comparison with the level of conventional products and average technologies

Contributing to protecting the global environment through products and technologies with the highest level of environmental performance

Annual reduction of 750 million tons of CO_2 emissions by advanced technologies*2 (in 2020)

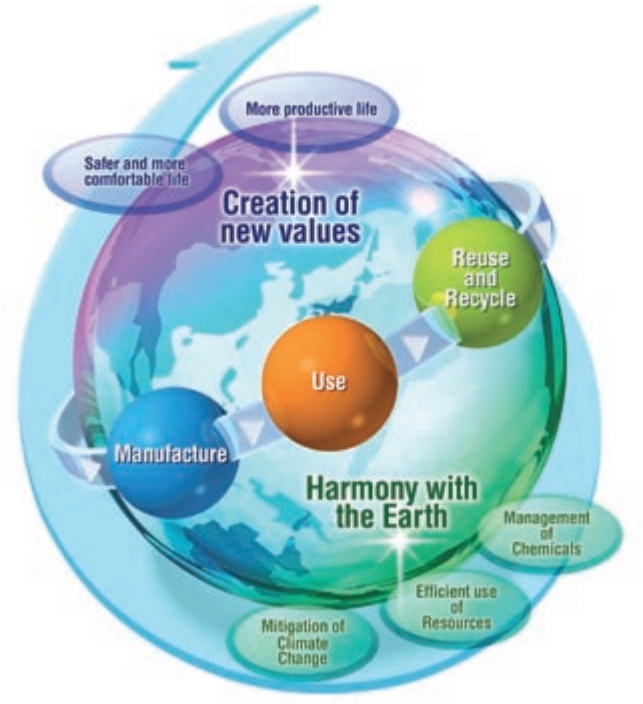
Toward Environmental Vision 2050

Toshiba Group will continue its efforts to create affluent lifestyles for society that are truly in harmony with the Earth.

As a corporate citizen of planet Earth, Toshiba Group continues to ask how mankind should live in the near future and what role we should play in society and for the Earth. As solutions for various environmental issues, including climate change, are called for, Toshiba Group has developed Environmental Vision 2050 to ensure that these environmental issues are solved and that all people can lead affluent lifestyles in harmony with the Earth. With the DNA of Toshiba Group, which continues to lead the industry and bring revolutionary innovations, we will contribute to society through the creation of new value.

Environmental Vision 2050

Toshiba Group practices environmental management that promotes harmony with the Earth, contributing to the creation of a richer lifestyle for society.



Environmental Vision 2050

What vision should we paint for the future? Mankind will constantly advance technology and continue to move forward to create enriched value. Such enriched value, however, is not created in human society alone. Human society benefits from services provided by ecosystems, including the supply of water, oxygen, and other resources, as well as the purification of waste matter from human society. We cannot build a sustainable society unless we advance our activities within an environmental capacity that allows ecosystem services to work effectively. It is important to ensure coexistence with the global environment, which surrounds human society.

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.

Throughout the life cycle of products from manufacture and use to reuse and recycling, 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, the three pillars of its environmental management system.

Performance indicators for our Vision

Expressing the creation of new value and harmony with the Earth—the two goals declared in Environmental Vision 2050—as a fraction, with the former as its numerator and the latter as its denominator and pursuing the two goals at the same time is based on the concept of "eco-efficiency." Toshiba Group calls the degree of improvement in eco-efficiency the "Factor," and increasing the Factor leads to affluent lifestyles in harmony with the Earth. Therefore, exercising our imagination and, based on several predictions of the future shape of society, we examined what the Factor must be in the world in 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.

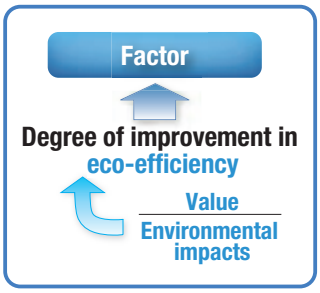
It is also expected that the world population will increase by 1.5 times as compared to 2000 by 2050. In order to reduce environmental impacts as they rise with population growth, it is necessary to increase eco-efficiency by 1.5 times by that year.

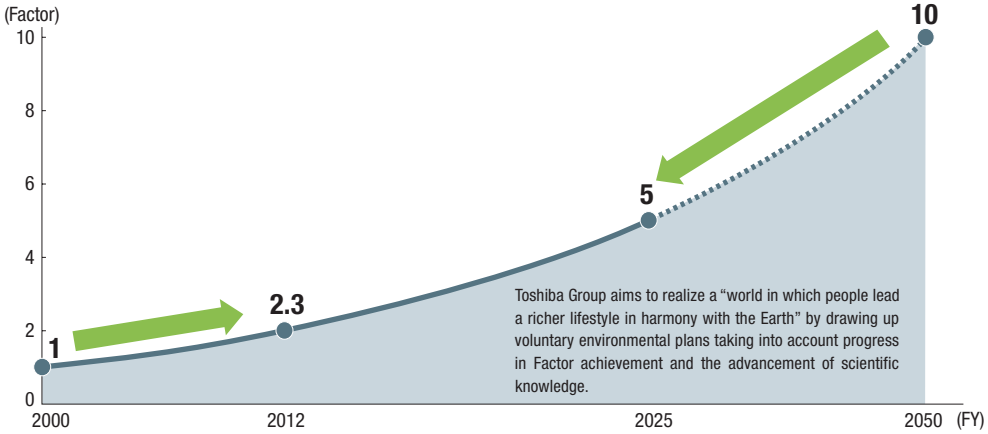
And at the 15th Conference of the Parties to the U.N. Framework

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 (3.4×1.5×2). As an evaluation indicator, Toshiba Group Environmental Vision 2050 sets the goal of achieving Factor 10 by 2050.
Long-term goals are established by backcasting from the ideal situation in 2050. Meanwhile, Toshiba Group believes that in 2012, the last year of its Fourth Voluntary Environmental Plan which is currently being implemented, it is necessary to achieve Factor 2.3, a milestone to attain the long-term goals.

As a corporate citizen of planet Earth

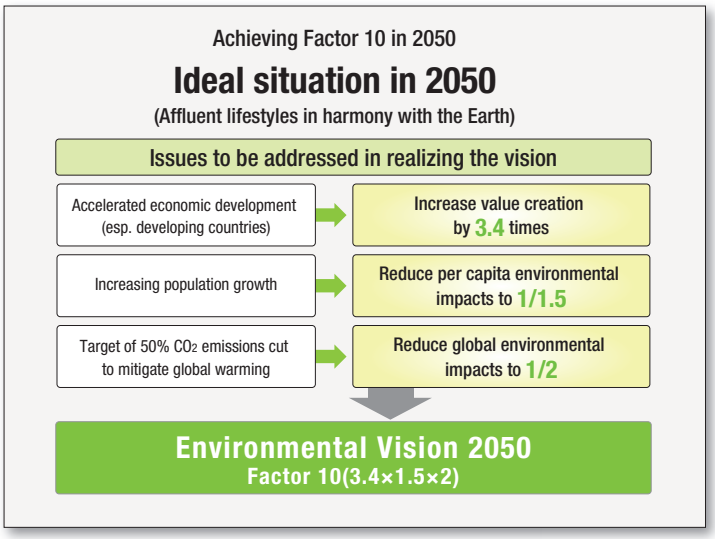
Toshiba Group requires all its employees to be always aware in their actions that the Group is a corporate citizen of planet Earth. Specifically, this means that they are required to contribute to the creation of a better global environment, and respect cultures and customs in the communities around the world in which we do business, and contribute to the local community. In our Environmental Vision 2050, we believe that it is necessary to achieve an average of Factor 10 for the entire world by 2050, but the members of the international community vary greatly from developed to emerging countries. Developed countries are urged to reduce greenhouse gas emissions not by half but to 20% of 1990 levels, and if the target is limited to developed countries alone, the Factor in 2050 must be 25, a target extremely difficult to reach. Toshiba Group will offer optimal solutions taking into consideration all different situations in various regions of the world such as economic affluence, accessible resources, and infrastructure development.





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 2.3 in FY2012, the target year of the Fourth Voluntary Environmental Plan.



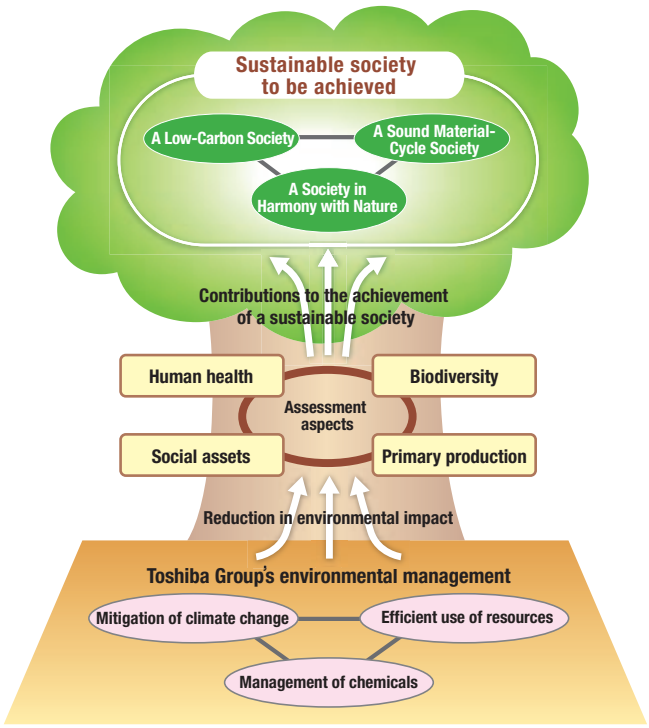
As the target for its Environmental Vision 2050, Toshiba Group establishes the degree of improvement in eco-efficiency (Factor) as a key indicator and aims to achieve Factor 10 in 2050.

Initiatives to realize a sustainable society

Toshiba Group aims at three forms of sustainable society: A Low-Carbon Society, A Sound Material-Cycle Society, and A Society in Harmony with Nature. Toshiba Group, meanwhile, aims to contribute to reduction of environmental impacts by advancing environmental management initiatives, which consist of three pillars: mitigation of climate change, efficient use of resources, and management of chemicals.

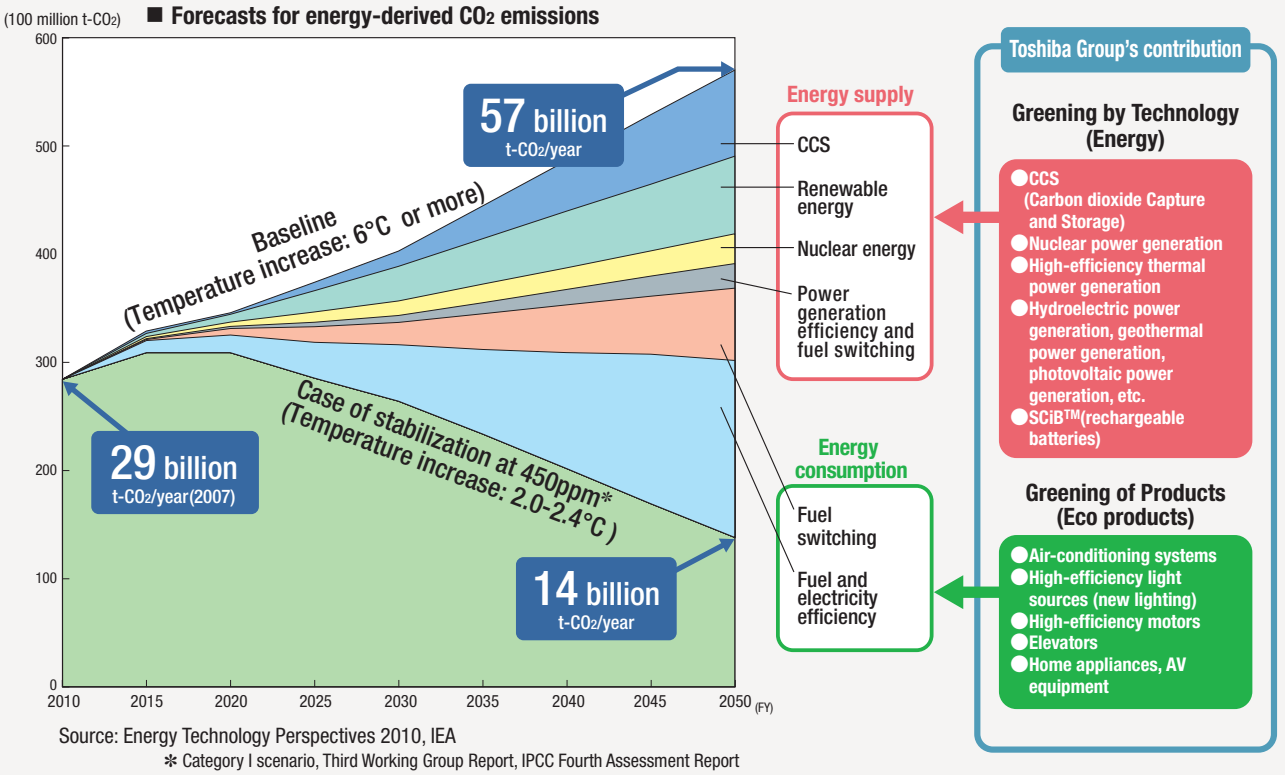
In environmental management, it is important to evaluate in quantitative terms whether our initiatives are really making progress toward the realization of a sustainable society. In FY2003, Toshiba Group introduced a LIME-based* comprehensive evaluation method and has since used it as an indicator of environmental management. The LIME environmental assessment method based on the calculation of damage, assesses effects on four elements that should be protected: life, and factors essential to maintain life, for both human society and ecosystems. It makes the most of the latest knowledge and analytical methods of environmental science, and one of its benefits is to enable exhaustive assessments of environmental impacts for a wide range of environmental issues, including biodiversity—an area that has attracted much attention in recent years. In the future, Toshiba Group will continue to make the best use of the LIME assessment method as it moves steadily toward a sustainable society.

* 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 (see p.38 for details).



Toshiba Group, aiming at a sustainable society, will promote environmental management and evaluate its results from diverse perspectives.

Technologies required for reduction of global CO_2 emissions



Source: Energy Technology Perspectives 2010, IEA

* Category I scenario, Third Working Group Report, IPCC Fourth Assessment Report

Reduction of CO_2 emissions through eco products

The International Energy Agency (IEA) predicts that if governments continue their current policy, the world's carbon dioxide (CO_2) emissions will reach 57 billion tons/year in 2050, and that the temperature will rise by 6˚C on average by 2050 (see the chart on the left). In order to reduce the world's CO_2 emissions to 14 billion tons/year, 50% of the current level, it is necessary to develop innovative technology on both the energy supply and consumption sides. Toshiba Group is confident that it will be able to make great contributions in almost all areas of the two sides.

Toshiba Group estimates that the products delivered by the Group to the world under the slogan "Greening of Products" and "Greening by Technology" and currently in operation will help reduce CO_2 emissions by 750 million tons in FY2020.

In the Greening of Products or energy-saving products, the energy-saving effects (i.e., CO_2 emission reduction) are calculated by comparing the CO_2 emissions from newer Toshiba Group energy-saving products that will be in operation in FY2020, with the CO_2 emissions from previously shipped products that will be in the last year of their service life in FY2020.

With respect to the Greening of Technology or energy supply equipment, the total CO_2 emission reduction effects are computed by multiplying the difference between the average CO_2 emission coefficient per unit of power of all thermal power plants in operation in FY2020 and the CO_2 emission coefficient per unit of power of Toshiba's alternative power generation sources in operation in FY2020, by the total volume of power that will be generated in FY2020 (see the chart below).

Reduction of CO_2 emissions through Toshiba Group's products

Present: **750 million t-CO_2/year (FY2020)**

Greening of Products
34.8 million t-CO_2/year

Greening by Technology
714 million t-CO_2/year

Calculation target: All products in operation, including those shipped in the past
Comparison target: Previously shipped products that will be in the last year of their service life in FY2020 (eco products)
Average of thermal power plants in FY2020 (energy)

Previous report: **120 million t-CO_2/year (FY2025)**

Greening of Products (eco products)
35.7 million t-CO_2/year

Greening by Technology (energy)
82 million t-CO_2/year

Calculation target: Only products shipped in the applicable year
Comparison target: Products that went into operation in FY2000
CO_2 emissions from coal-burning thermal power plants are proportionately distributed over the period from the start of construction to the start of operation.

In this report, the method of calculating CO_2 emission reduction effects was revised to include all products in operation. The selection of comparison targets was made more realistic by taking product replacement cycles into account. The year of calculation was changed to FY2020, which is being discussed as the year for establishing a post-Kyoto Protocol medium-term goal.

"Toshiba eco style"

In order to further accelerate its initiatives for environmental management through the three "Green" concepts 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 a greener planet Earth.
http://ecostyle.toshiba.com

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

In order to evolve into one of the world's foremost eco-companies, Toshiba Group has been accelerating its environmental management under the global brand "Toshiba eco style." The three circles surrounding the eco style logo, which symbolizes innovative ideas and imagination, represent Greening of Process, Greening of Products, and Greening by Technology.

Realizing Our Vision of Enhanced Quality of Life in Harmony with the Earth

TOSHIBA eco style

Advances in technology, manufacturing and products bring a new style to people and society
For individuals, our eco-conscious products create value and help to realize richer, more diverse lifestyles, while reducing impacts on the global environment.

For society, our advances in power system, sophisticated transmission networks and essential infrastructure systems secure new levels of convenience, safety and security, while contributing to the realization of a greener planet Earth.

Toshiba is eco style

Committed to a better environment, a better world, for people everywhere

Fourth Voluntary Environmental Plan

If the two eco-efficiency goals for products and business processes are reached, we will achieve our goal of increasing overall eco-efficiency by 2.3 times.

Aiming to increase the overall eco-efficiency by 2.3 times in FY2012

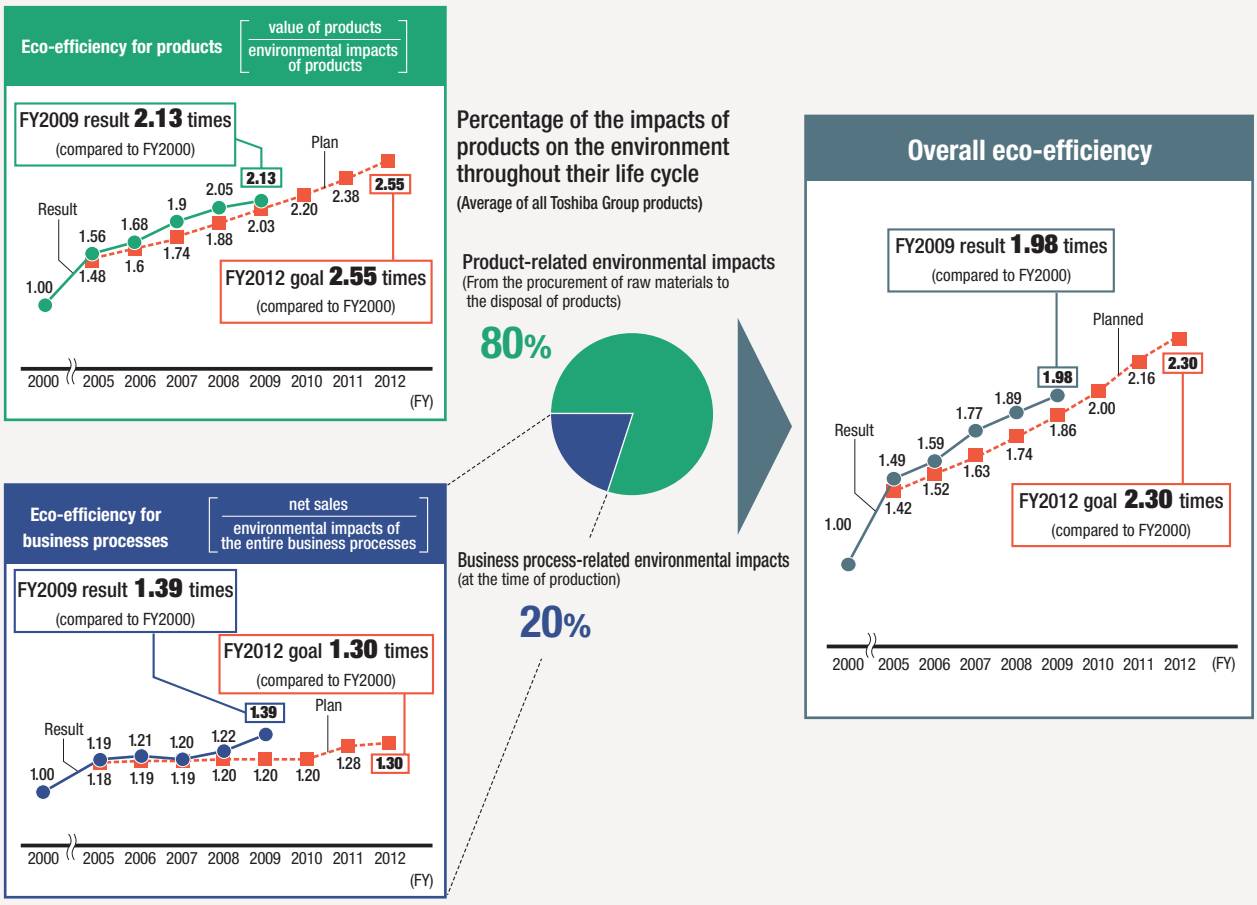
Since 1993, Toshiba Group has formulated voluntary environmental plans and managed specific environmental activities and their targets in accordance with these plans. Currently, the Fourth Voluntary Environmental Plan, developed in March 2005, is being implemented. Initially, the Fourth Voluntary Environmental Plan established FY2010 as its target year, but with the Environmental Vision 2050 announced in October 2007, the Plan extended its implementation period until FY2012 so that its target year corresponds with the last year of the first commitment period of the Kyoto Protocol. Environmental Vision 2050 requires Toshiba Group to increase the degree of improvement in overall eco-efficiency (the "Factor") to 10 by FY2050 and achieve Factor 5 by FY2025. Taking these requirements into consideration, it will be necessary to increase the Factor to 2.3 by FY2012.

Studies of the environmental impacts of Toshiba Group's products throughout their life cycle indicate that the environmental impacts of business processes, or at the time of production, account for approximately 20% of the total environmental impacts of the products throughout their life cycle. Therefore, the overall eco-efficiency is calculated by assuming that product-related environmental impacts account for 80% of the total and then seeking weighted averages of product and business process Factors. In FY2009, Toshiba Group increased the product and business process Factors to 2.13 and 1.39, respectively, exceeding the goal in each of these areas. Furthermore, it increased the overall eco-efficiency to 1.98, higher than the initial goal.

The table on the right summarizes the progress made in the various environmental measures taken in accordance with the Fourth Voluntary Environmental Plan in FY2009 and Factors achieved in each area of environmental management. Goals were not achieved in two areas: the effects of reduction in CO_2 emissions through eco products, and the percentage of zero waste emission bases to all bases. Toshiba Group will step up its environmental initiatives mainly in these areas as FY2012, the last year of the Plan, approaches.

Aiming to increase overall eco-efficiency by 2.3 times in FY2012

(FY2012/FY2000)



Eco-efficiency for products (2.55 times) × 0.8 + Eco-efficiency for business processes (1.30 times) × 0.2 = Overall eco-efficiency (2.30 times)

Degree of improvement for overall eco-efficiency	FY2009			FY2010	FY2012
	Goal	Result	Evaluation	Goal	Goal
	1.86	1.98	+0.12(Achieved)	2.0	2.3

Improvement of eco-efficiency for products		Indicator	FY2009			FY2010	FY2012
			Goal	Result	Evaluation	Goal	Goal
Creation of environmentally conscious products (ECPs)		Factor for products	2.03	2.13	+0.10(Achieved)	2.20	2.55
	Creation of ECPs	Percentage of ECPs to total sales	50%	65%	+15%(Achieved)	60%	80%
			The percentage of newly developed products that conformed to the standards for ECPs increased, enabling Toshiba Group to far exceed the goal. In the future, the Group will add new initiatives based on new standards, thus accelerating its efforts to create new ECPs.				
		Number of Excellent ECPs created	10 products	13 products	+3(Achieved)	15 products	25 products
			Initiatives for creating Excellent ECPs are progressing in a wide range of product categories with electronic devices such as semiconductors and rechargeable batteries added to the list of Excellent ECPs				
	Mitigation of climate change through products	CO_2 emission reductions through eco products	5.8 million tons	3.4 million tons	-2.4 million tons (Not achieved)	6.3 million tons	7.3 million tons
			Greatly affected by the effects of economic fluctuations, the goal was not achieved. A working group was formed within the company to facilitate measures for coping with climate change through products. Due to the group's efforts, CO_2 emission reductions improved as compared to the previous year.				
	Abolition of use of all specified chemicals	15 specified chemicals contained in products*1,2	90%	99%	+9%(Achieved)	Abolition of use of all these substances	Abolition of use of all these substances
			Specified chemicals have been eliminated from almost all products except certain products for social infrastructure and home electric appliances.				

Innovation in business processes		Indicator	FY2009			FY2010	FY2012
			Goal	Result	Evaluation	Goal	Goal
		Factor for the entire business processes	1.20	1.39	+0.19(Achieved)	1.20	1.30
Mitigation of climate change	Reduction in energy-derived CO_2 emissions*3	Rate of reduction in total emissions per unit production*4	44%	47%	+3%(Achieved)	45% reduction	47% reduction
		Domestic production bases	44%	51%	+7%(Achieved)	45% reduction	47% reduction
			Such initiatives as introducing high-efficiency cooling equipment and air-conditioning systems as well as inverter-controlled compressors and making all-out efforts to use waste heat from plants are under way.				
	Reduction in greenhouse gas emissions (other than CO_2)	Rate of reduction in total emissions	35%	63%	+28%(Achieved)	36% reduction	38% reduction
			Substantial reductions in greenhouse gas emissions were achieved by installing greenhouse gas removal equipment in the existing lines in a systematic way.				
	Reduction in CO_2 emissions resulting from product logistics	Rate of reduction in total emissions per unit production	38%	47%	+9%(Achieved)	40% reduction	44% reduction
			Such measures as choosing the optimal transport mode, including modal shifts, and improving truck load factors were taken.				
Chemical Management	Reduction in total emissions of chemicals into the air and water	Rate of reduction in total emissions	25%	31%	+6%(Achieved)	50% reduction	54% reduction
			Progress was made in taking measures for processes that emitted large amounts of chemicals, and in addition, production volumes were reduced. Due to the effects of these developments, the goal was far exceeded.				
Efficient use of resources	Reduction in the total volume of waste generated	Rate of reduction in the total volume of waste generated per unit production	23%	34%	+11%(Achieved)	20% reduction	24% reduction
			Progress was made in reducing the total volume of waste generated mainly by cutting the volume of materials used through improved production and disposal processes.				
	Reduction in final waste disposal volumes	Percentage of zero waste emission*5 bases to all bases	80%	70%	-10% (Not achieved)	Goal attained at all bases	Goal attained at all bases
			Progress is behind schedule at overseas bases with underdeveloped recycling and other systems. Toshiba Group will continue its efforts to discover recyclers mainly through information exchange with local governments and businesses. The overall ratio of waste finally disposed of was 5.0%, 0.9% lower than in the previous year.				
	Product reuse and recycling	Rate of increase in the volume of end-of-life products recycled*6	159%	217%	+58%(Achieved)	160% increase	180% increase
			The goal was far exceeded because the eco-point system in Japan generated end-of-life products in four product categories and more end-of-life products were collected in Europe and North America. Toshiba Group will continue to collect and recycle more products in Japan and abroad.				
	Reduction in the volume of water received	Rate of reduction in the volume of water received per unit production	9%	30%	+21%(Achieved)	9% reduction	10% reduction
			Progress was made in reducing the volume of water received mainly by reusing water through the introduction of waste water treatment and collection systems into operation bases that consumed much water.				

*1 Fifteen specified chemical substances : see page 35
*2 Total sales of products that do not contain any of these 15 specified chemical substances are used when the percentage of certain products to total sales is given.
*3 In this table, the CO_2 emission coefficient for electricity in Japan is 3.51 t-CO_2/10,000 kWh.
*4 FY1990 baseline.
*5 Toshiba Group defines "zero emission" as reducing the portion of waste materials resulting from business operations that are disposed of to landfills after they undergo various types of treatment to less than 0.5%.
*6 FY2001 baseline, when the Household Appliance Recycling Law was enforced.

FY2000 baseline, unless otherwise specified. 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 output = [Nominal domestic output] / [Ratio of the domestic corporate goods price index (CGPI) for each year (CGPI for 1990 is 1), based on CGPI (electric equipment) published by the Bank of Japan] + [Nominal overseas output]

Overview of Environmental Impacts

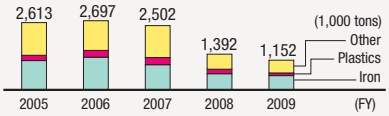
Toshiba Group handles a wide range of products and services from household appliances and information/communications equipment to semiconductors and power generation facilities.

Inputs

Energy and resources

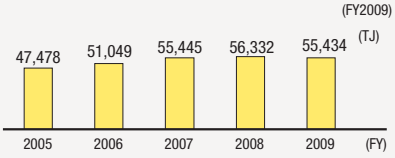
Materials*1 1,152,000 tons

Iron	559,000 tons	Other	487,000 tons
Plastics	106,000 tons		



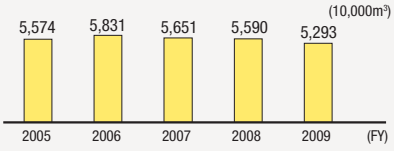
Energy 55,434TJ*2

Electricity	48,116TJ	Kerosene	47TJ
City gas	3,011TJ	Light oil	1,107TJ
Bunker A heavy oil	516TJ	Other	2,038TJ
LPG	599TJ		



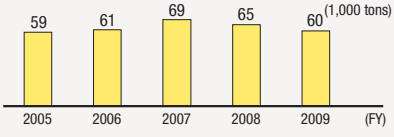
Water 52.93 million m³

Industrial water	32.85 million m³	Ground water	12.96 million m³
City water	7.12 million m³		



Chemical substances

Amount handled	60,000 tons

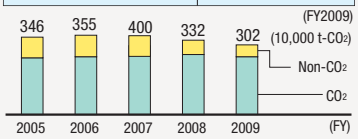


Input

Atmosphere (CO_2 and other greenhouse gases (GHGs), etc.)

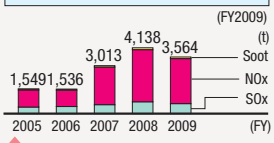
Total GHGs*3 3.02 million t-CO_2

CO_2	2.49 million t-CO_2	SF_6	130,000 t-CO_2
Total non-CO_2	530,000 t-CO_2	HFC	40,000 t-CO_2
PFC	350,000 t-CO_2-e	Other	10,000 t-CO_2



Emissions to air

SOx	633 tons
NOx	2,829 tons
Soot	102 tons



Atmospheric emissions

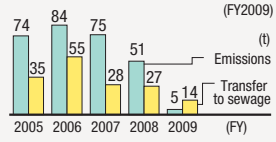
R&D, design, and production

Emissions to water

Water (Chemical substances)

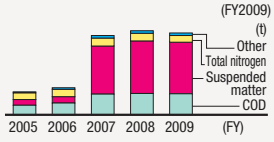
Chemical substances*4

Emissions	5 tons
Transfer to sewage	14 tons



Emissions to water

Total wastewater	45.07 million m³
BOD	289 tons
COD	731 tons
Suspended matter	1,781 tons
Total nitrogen	229 tons
Other	90 tons



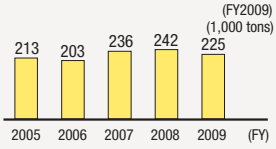
Resource recycling

Water reuse and recycling

Recycling

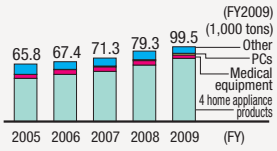
Waste

Waste recycled	225,000 tons



End-of-life products

End-of-life products recycled	99,500 tons

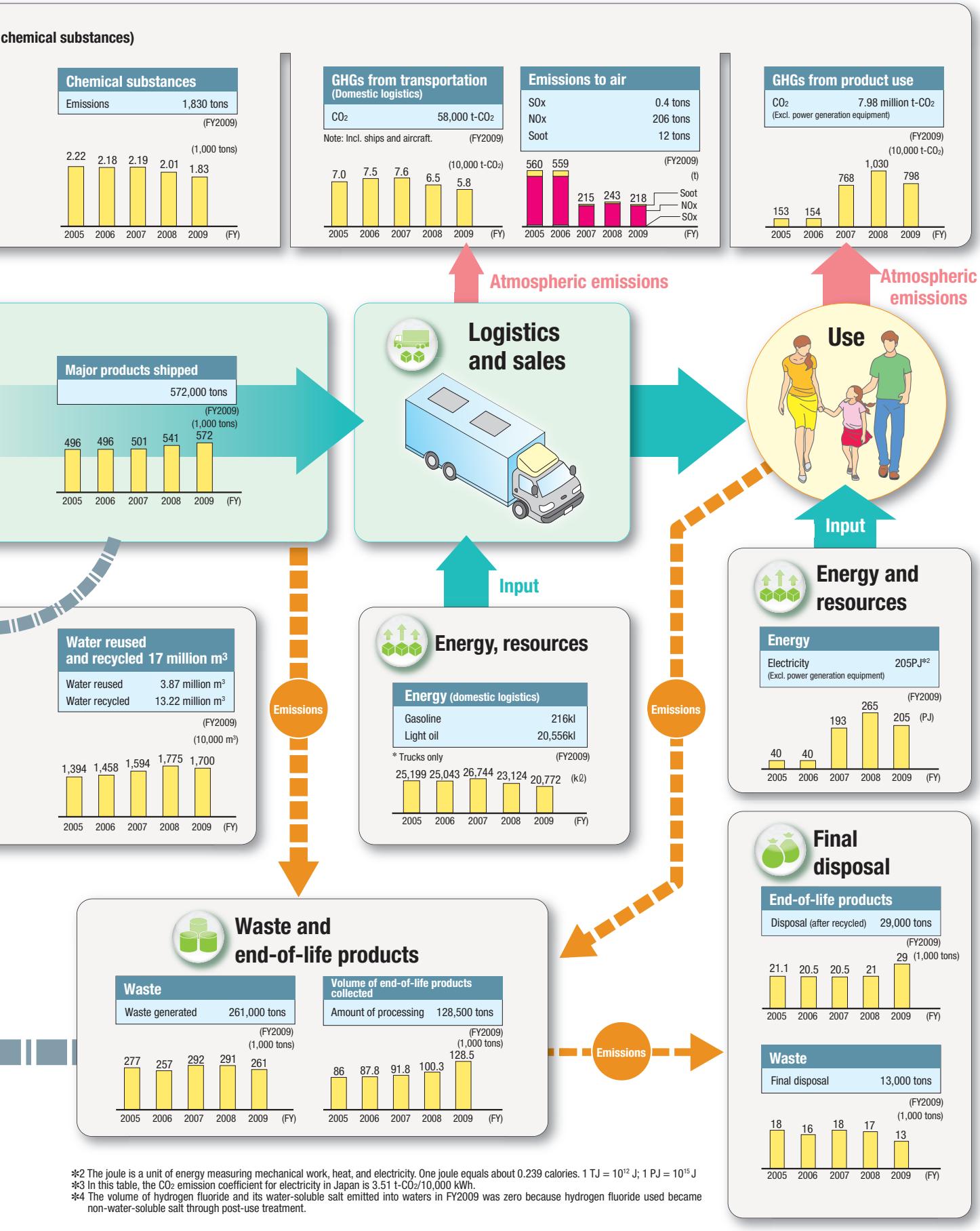


Resource recycling

Resource recycling

*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 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 are 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 amounts of resources in parts made of composite materials or the amounts of resources associated with services. EMIOT has enabled clarification of the amounts of resource inputs by resource type for such materials.

As shown in the material flow chart below, Toshiba Group collects, calculates, and analyzes data on environmental impacts that are generated in each stage of the product life cycle from the procurement of materials, production, and logistics to use by customers, collection, and recycling with the aim of improving eco-efficiency. These data were collected from 542 Toshiba Group companies (actual results for FY2009).



*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 3.51 t-CO_2/10,000 kWh.
*4 The volume of hydrogen fluoride and its water-soluble salt emitted into waters in FY2009 was zero because hydrogen fluoride used became non-water-soluble salt through post-use treatment.

Biodiversity

In order to prevent biodiversity loss on a global scale, Toshiba Group will establish a system to promote its initiatives and visualize the effects of its business activities on biodiversity.

Toshiba Group's policy on biodiversity

The business activities of Toshiba Group benefit from ecosystem services supported by diverse forms of life and at the same time affect such services. For example, while they receive supply services such as wood resources and water, they affect ecosystems when mining minerals and extracting fuel resources. The final treatment of industrial waste discharged by production bases into the air and waters depends on ecosystems regulating services such as degradation and purification. For this reason, preserving biodiversity, which provides the foundation for ecosystem services, is an important issue for environmental management.

Toshiba Group will strive to reduce the effects of the location of business sites, the procurement of resources in business activities, and the discharge of industrial waste on biodiversity and push forward with projects aimed at contributing to conservation of biodiversity, including water and the natural environment. Furthermore, the Group will contribute to the preservation of biodiversity by working with local governments and NPOs to carry out social contribution programs such as the 1.5 Million Tree-Planting Project.

■ Three pillars of initiatives to conserve biodiversity

Assessments using the LIME method	Initiatives at plants	Contribution to society
- Application to products - Application to business processes	- Wastewater management using WET(Whole Effluent Toxicity) - Environmental assessments - Operation of biotopes	- Toshiba Group 1.5 Million Tree-Planting Project - Cooperation with local governments and NPOs

Biodiversity Guidelines

Toshiba Group formulated the Biodiversity Guidelines in September 2009. The Group will strive to make its initiatives for preserving biodiversity visible by analyzing its business activities and diverse environmental issues, including biodiversity, in comprehensive, quantitative terms and thus reduce environmental impacts and utilize ecosystem services in a sustainable manner.

Toshiba Group Biodiversity Guidelines

Basic policy

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

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

Specific actions

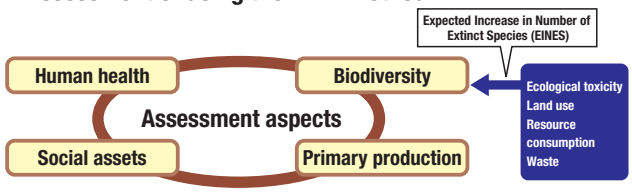
1. We will take appropriate measures to protect ecosystems when building factories or relocating facilities.
2. We will collaborate with local public agencies and private organizations.
3. We will continue our commitment to corporate citizenship activities as members of a sustainable society.
4. We will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

Assessment using the LIME method

Positioning of biodiversity in LIME

Toshiba Group makes use of the Japanese version of the Life-cycle Impact assessment Method based on Endpoint modeling (LIME), developed by the National Institute of Advanced Industrial Science and Technology, to assess the effects of its business operations on biodiversity. The LIME method expresses the effects of resources consumed for business activities and chemical substances discharged from them on human society and the ecosystem as coefficients. In order to assess the effects on biodiversity, damage caused to four affected areas (ecological toxicity, land use, resource consumption, and waste) is quantified to calculate the Expected Increase in Number of Extinct Species (EINES), an indicator of how much extinction risks for the Red List of endangered species increase. This enables quantitative analysis of material input and output associated with business activities as a direct indicator of effects on endangered species. For details of the LIME method, see page 38.

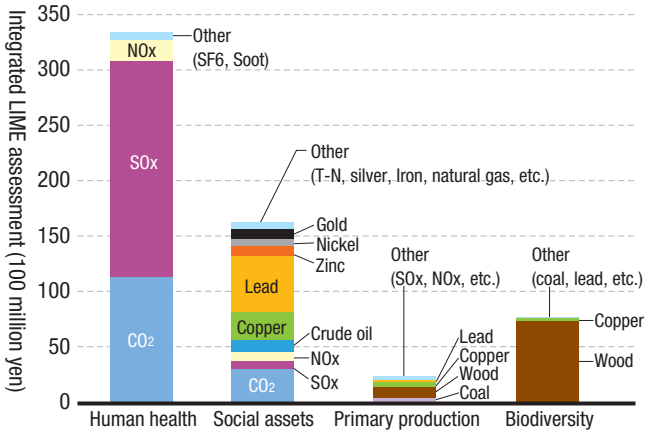
■ Assessment of using the LIME method



Assessment of resources used as raw material inputs for products

Toshiba Group uses the LIME method to assess the effects of resources used as raw material inputs for products on the environment from extraction to supply. Most affected among the four areas that should be protected is human health, followed by social assets (ease with which resources are procured) and biodiversity in the stated order. The effects on biodiversity are largely attributed to the procurement of wood resources. These wood resources include not only those procured directly by Toshiba Group but also those procured and consumed in the upstream of supply chains. As described above, Toshiba Group believes that it is important to work with supply chains to advance initiatives for preserving biodiversity.

■ Raw material inputs for products in FY2008



Example of LIME assessments: Lighting

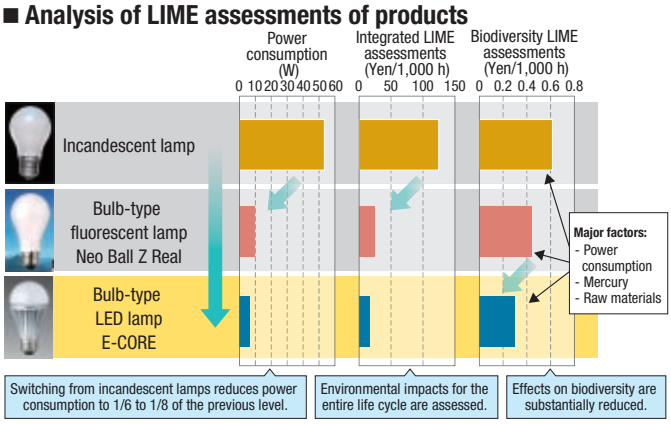
Lighting has evolved from incandescent lamps to bulb-type fluorescent lamps and then to bulb-type light-emitting diode (LED) lamps, and the power consumption for bulb-type fluorescent lamps and LED lamps has been reduced to 1/6 to 1/8 of their predecessor's level. The results of integrated LIME assessments for these lamps indicate a similar profile of environmental impacts to one presented by the results of assessments for power consumption because both results are greatly affected by energy conservation during the stage of use. A look at the results of LIME assessments for biodiversity alone shows that bulb-type fluorescent lamps and LED lamps reduce environmental impacts though not as dramatically as in the assessments of power consumption. Different types of lighting have different factors in terms of effects on biodiversity. Incandescent lamps affect biodiversity because of their large power consumption. The assessment result shows that it is important to recycle fluorescent lamps reliably so that mercury is not diffused from the lamps and reduce the volume of precious metals used for LED lamps and promote recycling of LED lamps.

Example of LIME assessments: Electric power substations

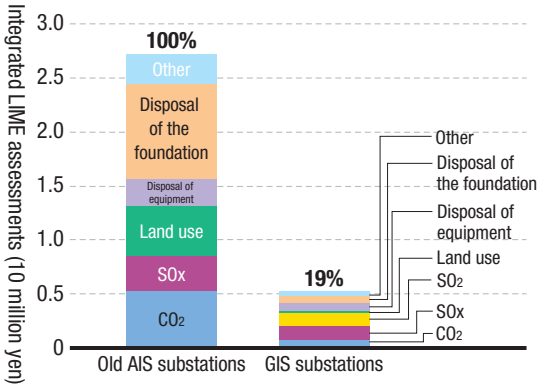
Some electric power substations are built in mountainous regions covered with rich green foliage. Toshiba Group uses the LIME method to assess environmental impact reduction effects obtained when reducing the area of installation for substations with old air-insulated switchgears (AIS) and that for substations with 145 kV gas-insulated switchgears (GIS). GIS substations, which require only 1/30 of the installation area for AIS substations, reduce the integrated LIME assessment indicator to 20% of the level of AIS substations because the effects of land use (modification of forests), disposal of concrete for the foundation, and so forth are reduced substantially. In particular, it is found that the effects of GIS substations on biodiversity are reduced to 10% of the level of AIS substations.


145 kV GIS

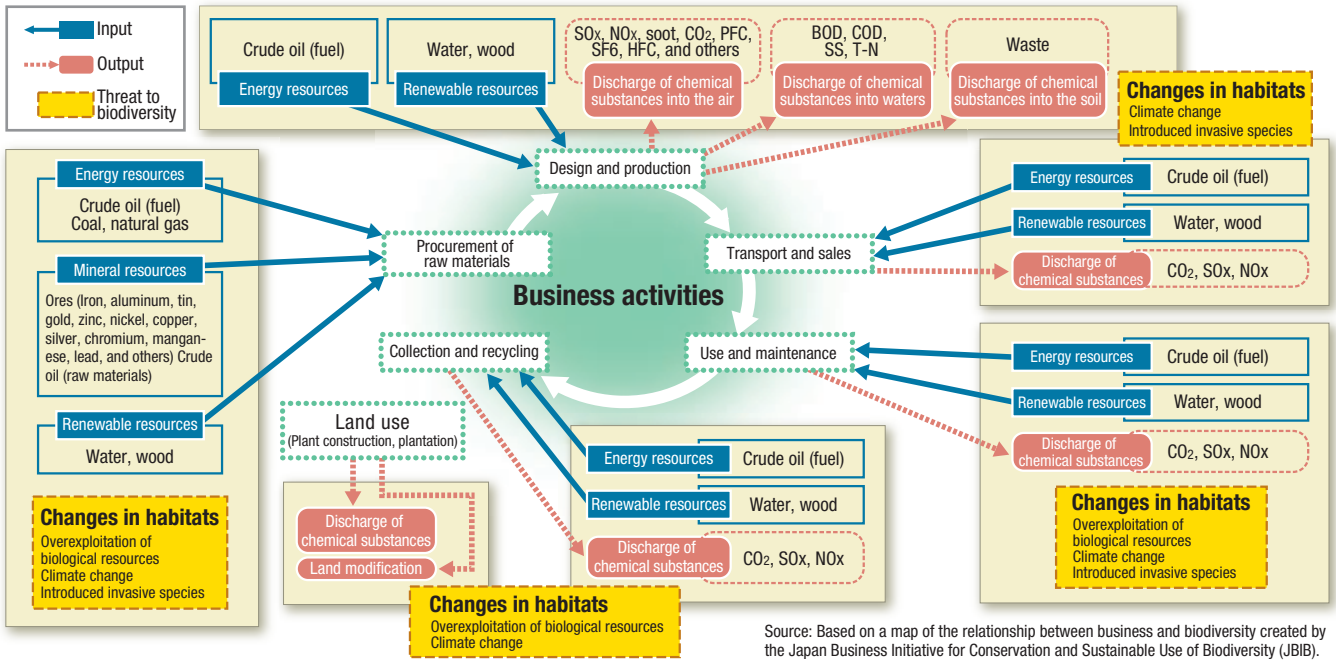
■ Analysis of LIME assessments of products



■ Comparison of integrated LIME assessments of substations



■ Map of the relationship between business and biodiversity



Source: Based on a map of the relationship between business and biodiversity created by the Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB).

In its business activities, Toshiba Group benefits from ecosystem services, and affects biodiversity, throughout the life cycle of its products. It will grasp the magnitude of its impacts on biodiversity in quantitative terms and work to reduce its impacts on biodiversity with the degree of priority for its actions in mind.

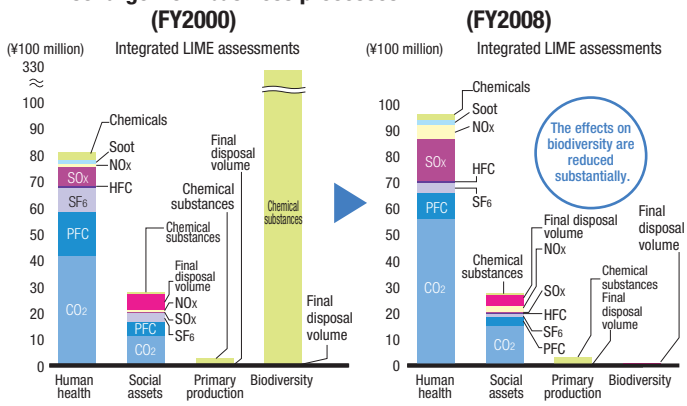
Biodiversity

Initiatives at Plants

LIME assessments of emissions from business processes

Using the LIME method to assess the effects on biodiversity of energy consumed chemicals and waste discharged by its business plants, Toshiba Group confirmed in quantitative terms that it had reduced the effects substantially from FY2000 to FY2008. The results of integrated environmental assessments in FY2000 indicated that the impacts on biodiversity accounted for the largest percentage of all environmental impacts, but the percentage had been decreased significantly by FY2008. There were two factors for this decrease. The first is that nickel compounds were no longer discharged because the production of cathode-ray tubes was discontinued. The other is that the discharge of lead was substantially reduced thanks to significant progress in the shift to lead-free soldering. Up to this time, Toshiba Group had strictly managed to keep the discharge of these heavy metals much smaller than its discharge standards. However, these results remind us of the fact that proper management of the concentration of heavy metals discharged is not sufficient to eliminate impacts on biodiversity, it will also be necessary to reduce discharges to as close to zero as possible.

■ **Discharge from business processes**



Wastewater management using the WET method

Toshiba uses the Whole Effluent Toxicity (WET) method, which employs biological indicators, on a trial basis as a new way of investigating the impact of wastewater from its business sites on the environment. This method, which confirms the impact of chemical substances in wastewater on the environment as the magnitude of the overall impact on living organisms, has already been introduced in Europe and North America. The Yokohama Complex used four organisms of species—luminescent bacteria, algae, crustaceans (water fleas), and fish (zebra fish)—to conduct shortterm chronic toxicity tests referring to U.S. guidelines. As a result, the Complex, which discharges wastewater into Tokyo Bay mainly through two discharge points, confirmed that the impact of its wastewater on the ecosystem was small for both.

Sampling of wastewater

Water flea used for WET assessments
(Source: National Institute for Environmental Studies)

Assessments of plant location

By the end of FY2010, Toshiba Group plans to engage external specialists to assess the relationship between the location of its major business sites and biodiversity in the area where they are located.

When it prepared the site of a new semiconductor fabrication building at the Yokkaichi Operations, whose construction began in July 2010, Toshiba examined information on areas neighboring the site, confirmed the life of rare animals and plants, and developed plans to protect such animals and plants in accordance with the environmental protection ordinances of Mie Prefecture. The rare species discovered were transferred to other areas. In addition, Toshiba is investigating fish and other forms of aquatic life living in the rivers into which wastewater is discharged. The company also plans to develop forests and parks around the new fabrication building, thus ensuring continuity with neighboring green tracts of land.

■ **Rare species habitats and actions taken**

Japanese lilies, variegated hostas, A. nipponensis Honda	Transplanted to other areas (Toshiba property)
Japanese fire belly newts	Transferred to other water bodies upon discovery
Synchita rufosignata (Sasaji)	Impacts reduced with vegetation restoration using existing species

Japanese lilies (Family Liliaceae)
Designated by Mie Prefecture as a semi-endangered species

Variegated hostas (Family Liliaceae)
Designated by Mie Prefecture as a semi-endangered species

A. nipponensis Honda (Family Gramineae)
Designated by the Ministry of the Environment as a semi-endangered species

Protecting the habitats in a lagoon

On the premises of the Yokohama Complex, there is a pond (100 m x 100 m), known as "the lagoon." It is part of a drainage channel for treated wastewater discharged from factories (used for manufacturing processes and for living) and rainwater and provides space for biological habitats.

A wide variety of life found in this lagoon includes insects such as the damselfly Ceriagrion melanurum, which is designated as an endangered species, and rare plants such as the orchid Cephalanthera falcate. Experts investigate the ecosystem of the lagoon on a regular basis. Toshiba works with biological laboratories of universities to analyze data from a scientific point of view and take specimens of dragonflies and butterflies. Through these activities, Toshiba works to obtain a deeper understanding of biodiversity.

Major rare animals and plants found in the lagoon and surrounds

Species (family)		Category
Ceriagrion melanurum (Family Coenagrionidae)		Endangered species category IB (by Kanagawa prefecture)
Freyer's purple emperor (Family Nymphalidae)		
Cephalanthera falcate (Family Orchidaceae)		Endangered species category IB (by Kanagawa prefecture)
Penthorum chinense (Family Saxifragaceae)		Endangered species category IB (by Kanagawa prefecture)
Veronica undulate (Family Scrophulariaceae)		

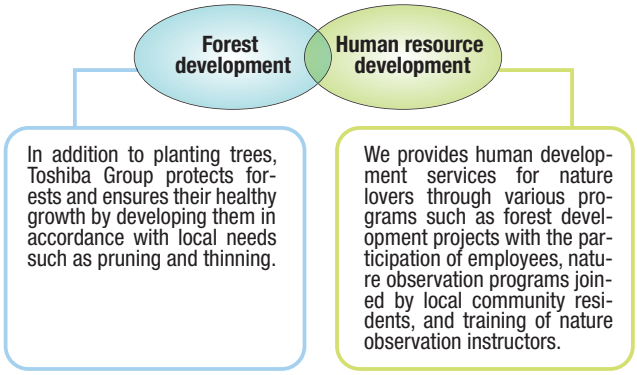
Endangered species category IB: Species that are feared to become extinct in the prefecture in the near future if current trends continue or whose habitats are suffering from ongoing degradation.
Endangered species category II: Species that face increasing risk of extinction.
Semi-endangered species: Species that currently face little risk of extinction, but that may become endangered species depending on future changes in their living conditions.

Contributions to Society

1.5 Million Tree-Planting Project

Toshiba Group is implementing the 1.5 Million Tree-Planting Project aimed at planting 1.5 million trees worldwide by 2025, when it will celebrate the 150th anniversary of its foundation. In addition to planting trees, the Group also prunes and thins trees for proper forest management. Through these activities, it contributes to creating ecosystems required for the growth of diverse biological species. Furthermore, it provides human resource development services for nature lovers such as tree-planting events for employees, nature observation programs, and training of nature observation instructors. In FY2009, Toshiba Group carried out programs in 11 places in Japan and seven 7 places overseas, planting an accumulated total of approximately 770,000 trees.

■ **Objectives of the 1.5 Million Tree-Planting Project**



Tree planting

In May 2009, 82 employees from seven local subsidiaries in Singapore participated in a tree-planting program at a national nature park.

Pruning

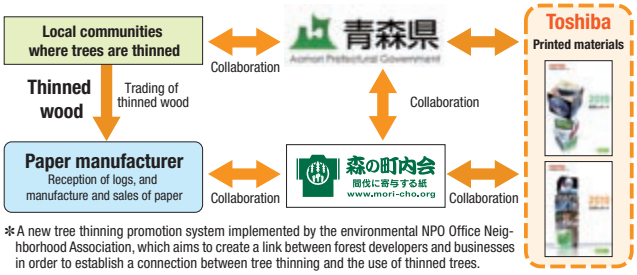
In November 2009, some 40 employees and their family members experienced pruning and thinning work in Kameoka City, Kyoto Prefecture.

Nature observation and learning programs

In June 2010, Toshiba's Yokohama Complex held a nature observation program 43 employees and their family members participated in the program.

Forest thinning with local governments and NGOs

In May 2009, Toshiba Group entered into a comprehensive agreement on cooperation in forest development with Aomori Prefecture. Toshiba is working with Aomori Prefecture to develop a total of about 10.5 ha of forest land in Shichinohe Town and Misawa City and is using the land as a place for the environmental education of employees. It also makes the most of the Forest Neighborhood Association system* promoted by an environmental NPO to have paper manufacturers process wood generated by tree thinning in Misawa City then produce paper from the processed wood and use the paper for copying and printing pamphlets and other materials. In March 2010, some 63 tons of wood were produced from forest thinning. Toshiba Group uses such wood for the printing of its own environmental reports and other materials. Thus the Group will contribute to the realization of a recycling-oriented society by not only helping to thin forests but also effectively using timber from forest thinning.



*A new tree thinning promotion system implemented by the environmental NPO Office Neighborhood Association, which aims to create a link between forest developers and businesses in order to establish a connection between tree thinning and the use of thinned trees.

Planting 3,000 mangroves in Thailand

Mangroves are a generic term for plants that grow in tropical or subtropical intertidal zones, where seawater mixes with fresh water as in the mouth of rivers, and which are covered by seawater when the tide rises. Studies show that they provide a habitat for diverse forms of life such as fish and crabs. In December 2009, Toshiba Semiconductor (Thailand) Co., Ltd. held an event to plant mangroves in Samutsakhon Province. 75 people joined the event, including employees, their families and students who participated in the plant's independent environmental education project, and they planted about 3,000 mangrove trees along the tidal flats.

Greening of Process

Toshiba Group's Production and Other Business Activities

Toshiba Group aims at the world's lowest level of CO_2 emissions through high-efficiency production equipment and processes.

Toshiba Group concentrates its energies on reducing environmental impacts from three perspectives: mitigation of climate change, management of chemicals, and efficient use of resources. The Group is continuing efforts to minimize increases in environmental impacts even if production is increased. In particular, in order to mitigate climate change, it will contribute to attaining the Japanese government's target of reducing total greenhouse gas (GHG) emissions in Japan by 25% as compared to 1990 levels by 2020 by focusing its efforts on its semiconductor plants, which account for nearly half of the Group's total greenhouse gas emissions.

Summary of activities in FY2009

Initiatives for Greening of Process P17

Pursuing the world's lowest level of CO_2 emissions
Promoting reductions in total greenhouse gas (GHG) emissions
- In FY2007, the most recent peak year, total GHG emissions were down 40% versus 1990 levels.
- Total GHG emissions in 2012 are expected to be 25% below previous plan.

Increasing eco-efficiency for business processes
- Achieved eco-efficiency of 1.39 times, exceeding the goal of 1.20 times.

Mitigation of Climate Change P19

Reduction in energy-derived CO_2 emissions
- Energy-derived CO_2 emissions decreased 47%, exceeding the goal of 44%.

Reduction in GHG emissions other than CO_2
- GHG emissions other than CO_2 decreased 63%, far exceeding the goal of 35%.

Reducing CO_2 emissions associated with product logistics
- CO_2 emissions resulting from product transport decreased 47%, exceeding the goal of 38%.

Construction of buildings
- Plants and offices designed with the needs of the environment taken into consideration.

Management of Chemicals P23

Reduction in the total volume of chemical substances discharged
- Total volume of chemical substances discharged reduced 31%, exceeding the goal of 25%.

Efficient Use of Resources P25

Reduction in the total volume of waste generated
- Total volume of waste generated reduced 34%, exceeding the goal of 23%.

Bases that achieved zero waste emission
- Bases that achieved zero waste emission remained at 70%, failing to achieve the goal of 80%.

Reduction in the volume of water received
- Volume of water received decreased 30%, far exceeding the goal of 9%.

Response to Environmental Risks P27

Purification of the soil and groundwater
- Approximately 1,600 kg of volatile organic compounds (VOCs) recovered from groundwater.

Recycling of End-of-Life Products P29

Volume of end-of-life products recycled
- Volume of end-of-life products recycled was 217%, far exceeding the goal of 159%.
- Toshiba Group commercialized waste urethane recycling technology.

Pursuing the world's lowest level of CO_2 emissions

COP15, which was held at the end of 2009, ended with many of the issues left unsolved. It was a historic event, however, that leaders from 119 countries from the world over assembled in one hall and engaged in heated discussions, and this highlighted again the fact that climate change is a top priority issue in international politics. Many of the leading countries take this subject seriously not simply as an environmental issue but as an effort to find a solution to energy security problems and a part of their economic and industrial policy. A global trend toward a low-carbon society has become a major irreversible current of the times.

In Japan, the cabinet led by the Democratic Party of Japan announced a goal of reducing greenhouse gas emissions by 25% compared to 1990 levels by 2020. As Japan is more enthusiastic about realizing a low-carbon society than other industrialized countries, introducing an emission trading system, environmental tax, and other institutions to cope with climate change is under consideration. Thus there is a growing move to reduce total greenhouse gas emissions as the government strives to realize a low-carbon society.

Toshiba Group is pursuing the world's lowest level of CO_2 emissions by reducing greenhouse gas emissions as much as possible. The Group aims to attain the world's top-level CO_2 emissions per unit sales in all business domains by carrying out plans for reducing greenhouse gas emissions on a group-wide scale without fail.

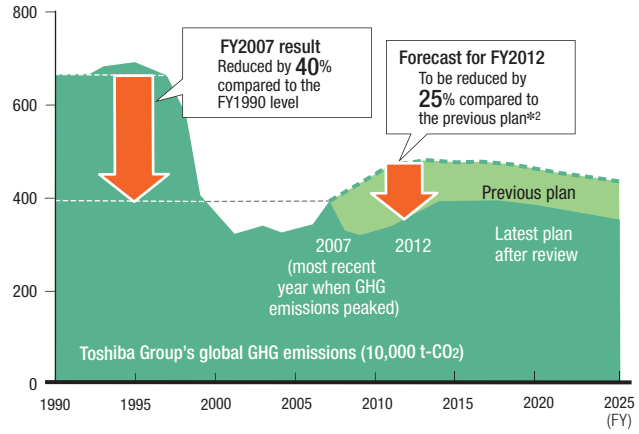
Reducing greenhouse gas emissions

From 1995 to 2000, Toshiba Group reduced greenhouse gas emissions to less than one-third of the previous level by energetically taking such measures as the collection and reuse of greenhouse gases other than CO_2, which had been used to insulate heavy electric machinery and produce semiconductors. Following this, however,

energy-derived CO_2 emissions have increased due to business expansion centered on semiconductors. In the future, it is expected that greenhouse gas emissions will continue to grow as a result of the construction of new plants in growth areas and other developments. Therefore, Toshiba Group is implementing plans to minimize increases in greenhouse gas emissions to the maximum extent possible, ensure that emissions stop increasing and peak at 70% of the 1990 level or less by FY2012, and then reduce emissions by 10% compared to the FY2012 level by 2025.

Due to the effects of changes in the business environment, the reorganization of production bases, the accelerated implementation of energy conservation policy, and other factors, Toshiba Group's greenhouse gas emissions have decreased since FY2007. Such emissions in FY2007, the most recent year when they peaked, were 40% lower than those in FY1990. Toshiba Group expects that in FY2012 greenhouse gas emissions will be reduced by 25% compared to the previous plan. Thus the Group will continue to work actively to reduce greenhouse gas emissions.

■ Changes in Toshiba Group's total greenhouse gas emissions*1



*1 This chart covers manufacturing and sales processes at the production and non-production sites of Toshiba Group companies in Japan and abroad. Figures for the period up to FY2009 indicate actual results, and those for FY2010 onward show planned figures. Planned figures assume that the CO_2 emission coefficient for electricity will fall during the period up to 2025. Greenhouse gases other than CO_2 include methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

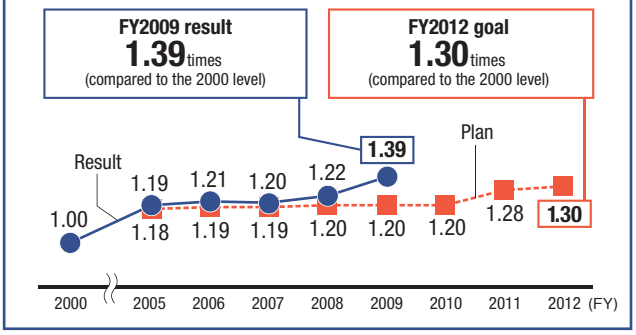
*2 Announced in August 2008.

Increasing the eco-efficiency for business processes by 1.3 times in FY2012

Toshiba Group aims to increase the eco-efficiency for business processes, an indicator to assess the impacts of business operations on the environment in a comprehensive manner, by 1.3 times compared to the FY2000 level by FY2012. In order to achieve this goal, the Group set eight specific targets (for details see p.10) as part of its Fourth Voluntary Environmental Plan and is working to reduce environmental impacts. In FY2009, it increased the eco-efficiency for business processes by 1.39 times, attaining the goal of 1.20 times.

Eco-efficiency for business processes

$$\text{Eco-efficiency for business processes} = \frac{\text{Net sales}}{\text{Environmental impacts for the entire business processes}}$$



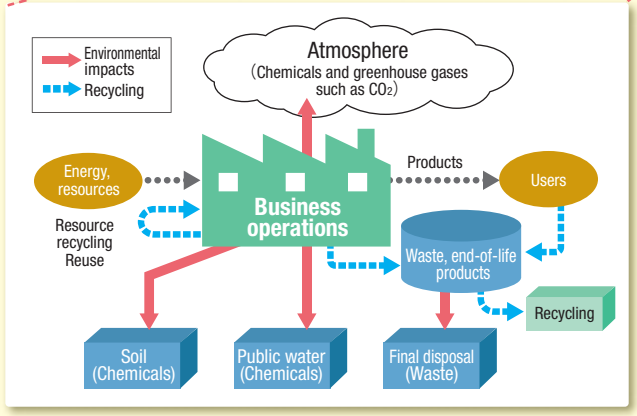
$$\text{Degree of improvement in eco-efficiency for business processes} = \frac{\text{Eco-efficiency for business processes in the year assessed}}{\text{Eco-efficiency for business processes in the base year (FY2000)}}$$

$$\text{Eco-efficiency for business processes} = \frac{\text{Net sales}}{\text{Environmental impacts for the entire business processes}}$$

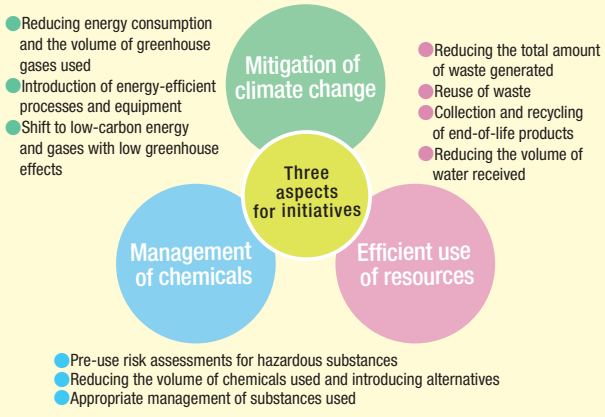
Environmental impacts (Greenhouse gases, chemicals, waste) → Impacts → LIME* → Conversion into monetary value

* 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 (see p.38 for details).

■ Environmental impacts resulting from business operations



■ Initiatives to reduce environmental impacts



Mitigation of Climate Change

In order to contribute to the mitigation of climate change, Toshiba Group strives to reduce energy-derived CO_2 and greenhouse gas (GHG) emissions, curb CO_2 emissions resulting from product transport and engage in initiatives such as the utilization of renewable energy.

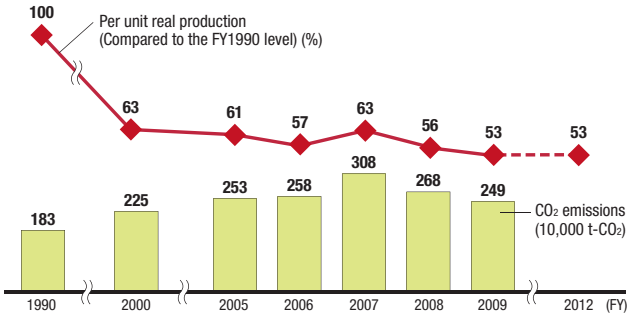
Reducing energy-derived CO_2 emissions

Energy-derived CO_2 emissions for Toshiba Group are increasing as its business expands. In the future, the Group plans to build new plants mainly in semiconductor operations in order to meet a lively demand in the market, and energy-derived CO_2 emissions are expected to grow in the immediate future.

Therefore, in order to reduce total energy-derived CO_2 emissions as much as possible and improve the overall CO_2 emissions per unit production, Toshiba Group is introducing energy-efficient processes and equipment with the aim of reducing energy-derived CO_2 emissions by 45% compared to the 1990 level by FY2010 and by 47% compared to the 1990 level by FY2012. As a result, in FY2009, the Group reduced energy-derived CO_2 emissions by 7.1% over a year earlier and the overall CO_2 emissions per unit production by 47%, achieving the goals for the fiscal year. By business segment, semiconductor operations accounted for about half of total energy-derived CO_2 emissions, and social infrastructure and liquid crystal display operations represented 21% and 11%, respectively. By geographical region, meanwhile, Japan, where semiconductor production bases concentrate, made up 70% of the total, but the percentage of total energy-derived CO_2 emissions from overseas countries centered on Asia was on the increase.

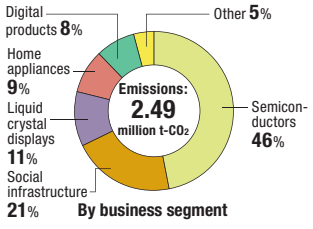
We will continue to actively take measures such as using high-efficiency chillers and air-conditioning systems, as well as inverter-controlled compressors and other instruments, effectively utilizing waste heat from factories, installing LED lighting, and introducing renewable energy. By doing so, the Group will step up its initiatives to reduce energy-derived CO_2 emissions mainly in the semiconductor unit, which is expected to see its energy-derived CO_2 emissions grow in the future. It will also actively promote energy-saving efforts in overseas production bases.

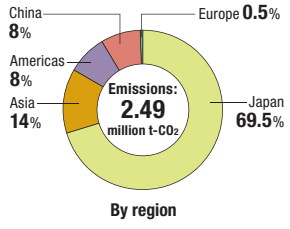
■ Changes in energy-derived CO_2 emissions and per unit production



✻ Up to FY2008, the CO_2 emission coefficient for electricity on the power station side had been used to calculate energy-derived CO_2 emissions, but starting FY2009, the CO_2 emission coefficient for electricity on the user side, including that for the past years, are used (3.51 t-CO_2/10,000 kWh in FY2009). That for overseas electricity is based on data from reports of the Japan Electrical Manufacturers' Association.

■ Breakdown of energy-derived CO_2 emissions in FY2009



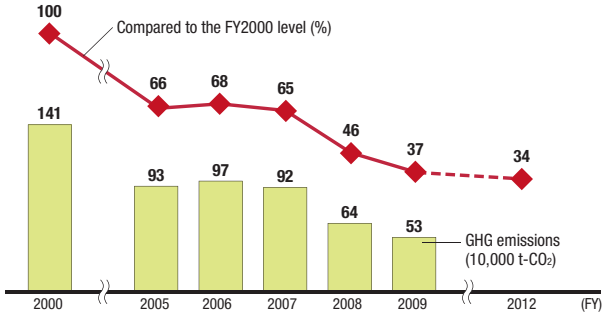


Reducing emissions of GHGs other than energy-derived CO_2

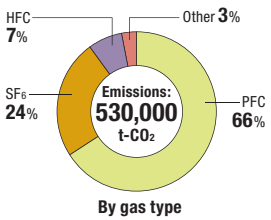
Toshiba Group aims to reduce the emissions of six types of GHGs covered by the Kyoto Protocol* by 36% by FY2010 and by 38% by FY2012, to 62% compared to the 2000 level. PFCs, which are used to produce semiconductors, and SF_6, which is used to insulate heavy electric machinery, account for 90% of the Group's total emissions of GHGs other than energy-derived CO_2 if they are combined. At its semiconductor plants, Toshiba Group is striving to shift to alternative gases with a smaller global warming potential and install GHG removal equipment in existing lines in a systematic way. In its heavy electric machinery division, the Group is making efforts to increase the collection and recycling rate for GHGs other than energy-derived CO_2. As a result, in FY2009, although production rose, Toshiba Group reduced emissions of GHGs other than energy-derived CO_2 by 18% compared to the previous year's level and by 63% compared to the 2000 level, far exceeding the goal for the fiscal year. Future plans call for business expansion in the semiconductor and heavy electric machinery divisions, but in order to ensure further reduction in GHGs other than energy-derived CO_2, the Group will actively take measures such as installing GHG removal equipment on a continuous basis and increasing GHG removal efficiency.

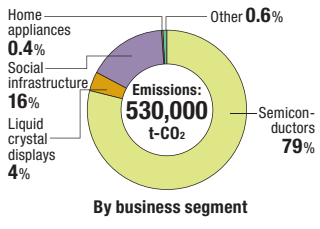
✻ The six types of GHGs whose emissions must be reduced under the Kyoto Protocol are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

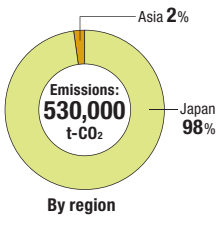
■ Changes in emissions of GHGs other than energy-derived CO_2



■ Breakdown of emissions of GHGs other than energy-derived CO_2 in FY2009





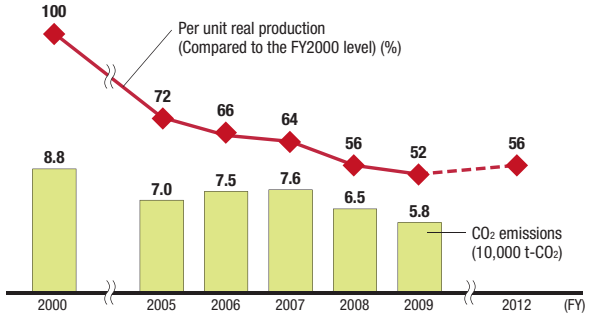


Reducing CO_2 emissions associated with product logistics

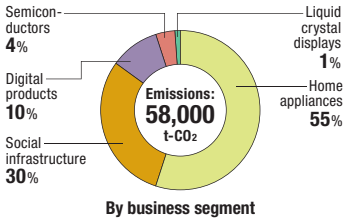
Each company of Toshiba Group is working to save energy during product logistics in collaboration with Toshiba Logistics Corp., and aims to reduce CO_2 emissions per unit production by 44% in FY2012, to 56% of the FY2000 level.

In FY2009, Toshiba Group substantially improved CO_2 emissions and emissions per unit production compared to the previous year by taking such measures as choosing the optimal modes of transport, including a modal shift, raising the load factor for trucks, and consolidating distribution centers.

■ Changes in CO_2 emissions associated with product logistics



■ Breakdown of CO_2 emissions associated with product logistics in Japan in FY2009



By business segment

● Acquisition of Eco Rail Mark certification

Eco Rail Marks* are granted to companies and products, which actively use railway cargo transport services. In FY2009, among the Toshiba Group companies, Toshiba Lighting & Technology Corp. and Toshiba Medical Systems Corp. were certified as holders of the Eco Rail Mark.

* The Eco Rail Mark Operation and Review Committee, established by the Ministry of Land, Infrastructure, Transport and Tourism, decided to introduce the Eco Rail Mark system. Eco Rail Marks are granted to companies that use railways for 15% of their 500-km or longer overland cargo transport operations or more.

● 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: 630,000 t-CO_2

  (Breakdown) Logistics in overseas countries: 28,000 t-CO_2

  International logistics: 602,000 t-CO_2

Example:1 Modal shift in transporting elevators

Toshiba Elevator and Building Systems Corporation

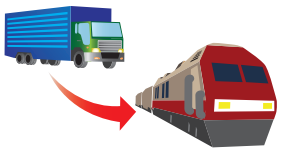
Toshiba Elevator and Building Systems Corp. is promoting a shift in the overland transport of elevator products from the previous trucks to railways through a partnership between Japan Freight Railway Company and Toshiba Logistics Corp.
Elevator products are transported from Toshiba Elevator and Building Systems' Fuchu Plant to Tokyo Freight Terminal Station by truck and then to warehouses in Osaka and Nagoya using 31-foot railway cargo containers.
This plan is expected to help reduce emissions of 250 t-CO_2 annually.

Products loaded into a 31-foot container.

Example:2 Modal shift for a Chinese subsidiary

Toshiba Semiconductor (Wuxi) Co., Ltd.

Toshiba Semiconductor (Wuxi) Co., Ltd. shifted the transport of its products from Wuxi to Hong Kong from trucks to railways mainly through the optimization of packing methods.
In addition, the company began to deliver its products, which had theretofore been supplied via Hong Kong, to customers via Shanghai, thus substantially reducing the total transport distances. This is expected to help reduce 548 t-CO_2 annually.



Use of renewable energy

Toshiba Group is striving to use renewable energy for a wider range of its operations, and in FY2009, the Group used 23,020 MWh's worth of renewable energy. When it relocated its office building, Toshiba Europe GmbH conducted energy conservation assessments focusing on renewable energy, thus covering 70% of power consumption for its entire office building with renewable energy. In addition, Toshiba Corp. has used a green power system since January 2005 and has since entered into an agreement to purchase two million kilowatts of electricity under a green power certificate annually.

Initiatives to cope with carbon risks

By grasping various risks (physical, regulatory, disclosure, and strategy risks), which it assumes as it copes with climate change, and new business opportunities accurately, Toshiba Group is carrying out management strategy aimed at minimizing the effects of such risks and expanding business. The Group believes that it is important to meet growing global interest in climate change, tighter regulations, and the demands of stakeholders by managing and implementing the PDCA (Plan-Do-Check-Act) cycle as it obtains a clear understanding of its present condition, responds to trends in statutory regulations, establishes medium- to long-term goals, and takes environmental measures. Toshiba Group is striving to enhance its corporate value with focus on carbon risk management that befits a low-carbon society.

Mitigation of Climate Change

TOPICS Toshiba designs leading-edge environmentally

Constructing a new environmentally conscious building, including the introduction of LED lighting, at a semiconductor plant.

Conceptual drawing of the fabrication building No. 5 at Toshiba Corp.'s Yokkaichi Operations.

Plan to introduce environmentally conscious clean rooms

In the first half of FY2010, Toshiba began to construct a new fabrication building at its Yokkaichi Operations, located in Yokkaichi City, Mie Prefecture, in order to increase the capacity to produce NAND flash memory.

Plans call for the new fabrication building to introduce the latest energy-saving technology such as simulated optimization of power load for air-conditioning and other systems, all-out efforts to reuse waste heat in the plant, high-efficiency operation of chillers, and use of LED lighting in clean rooms, in order to reduce greenhouse gas emissions.

Since fabrication equipment accounts for more than half of energy consumed in clean rooms, on the other hand, Toshiba will take energy-saving measures in collaboration with equipment manufacturers. The new fabrication building plans to introduce production equipment based on energy-saving designs such as use of energy-saving devices and parts as well as low-cost power and minimization of local ventilation. Thus Toshiba intends to build clean rooms that take the needs of the environment into consideration to the maximum extent possible. Through these measures, the company expects to reduce CO_2 emissions by 12% compared to the previous fabrication buildings.

Clean rooms at the semiconductor plant use local air-conditioning systems to curb energy consumption.

conscious plants and laboratories

Designing an Energy-efficient Nuclear Power Plant Engineering Center Building.

Building overview

Name ····· Nuclear Power Plant Engineering Center Building I
Location ····· 8 Shinsugita-cho, Isogo-ku, Yokohama City

Site area ····· 402,730m²
Total floor area ····· 22,125m²
Structure ····· Steel-frame structure
Purpose ····· Office

Date of completion ···· November 2009
Building area ····· 4,624m²
Number of floors ·····Six stories above the ground

Three principal measures to ensure CO_2 reduction design

Newly built plants and laboratories are making various efforts to reduce environmental impacts. In order to ensure harmony with the Earth, Toshiba Group believes that it is necessary to continue to take the needs of the environment into consideration from the design stage.

1 Introduction of LED lighting and lighting control systems

E-CORE* LED lamps, which are more effective in saving energy than fluorescent downlights, are used for the area that receives visitors. In addition, T/Flecs*, a system for controlling individual illuminators, which enables optimal lighting control by combining motion sensors, automatic dimmers, and other devices, are installed in the work area. These measures help reduce 78 t-CO_2 annually.

* Manufactured by Toshiba Lighting & Technology Corp.

E-CORE 2000

Reduced by **78** t-CO_2/year

2 Making heat source equipment more efficient

The Super Flex Modular Chiller (SFMC)*, a high-efficiency air-cooled heat pump chiller, is used for heat source systems that produce low-temperature water required for the processing of thermal load of outdoor air for air-conditioning. This helps reduce 42 t-CO_2 annually.

* Developed jointly by Toshiba Carrier Corp. and Tokyo Electric Power Company, Inc.

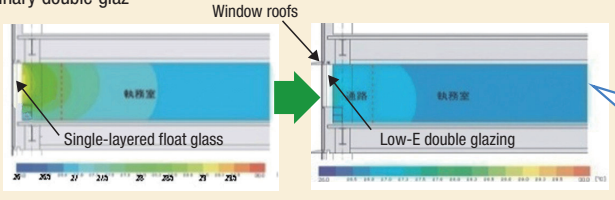
Super Flex Modular Chiller (SFMC)

Reduced by **42** t-CO_2/year

3 Use of heat-blocking double glazing and window roofs

Low-E heat-blocking double glazing, which prevents sunlight from coming into the office in summer (about 1.9 times as effectively as ordinary double glazing) and does not easily let heat from heating equipment escape in winter (about three times as effectively as single-layered float glass), and window roofs, which cut sunlight, are used to improve the thermal environment in the work room and achieve energy conservation through reduced air-conditioning load. These measures help reduce 13 t-CO_2 annually.

Simulated thermal environment



Reduced by **13** t-CO_2/year

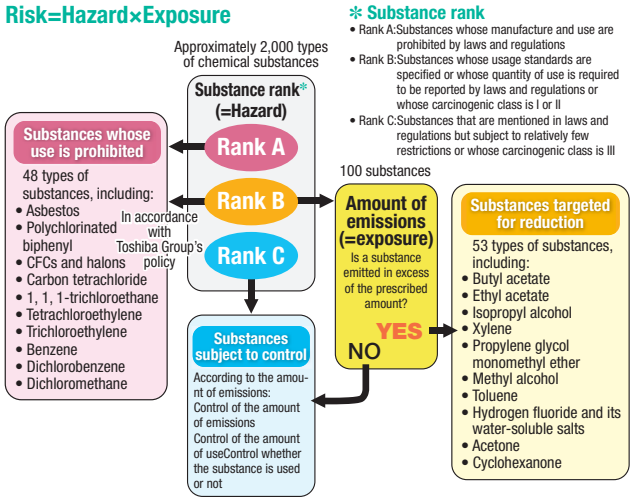
Management of Chemicals

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

Managing chemical substances

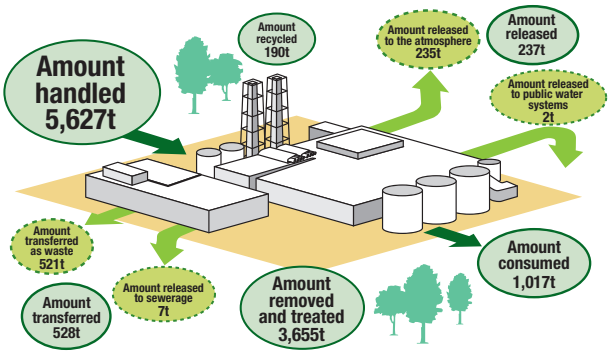
Toshiba Group classifies standards for the handling of chemical substances into the three categories of prohibition, reduction, and control, and manages chemical substances according to the regulations for each category. The relationship between substance ranking and management classifications, which 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 product of the ranking of the substance and emissions equivalent to exposure to the substance. The concept of risk assessment in which the risk posed by a substance is expressed as the product of the hazard and the exposure level is applied, although it is a quasi-risk management approach.

■ Substance ranking and management classifications



■ 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

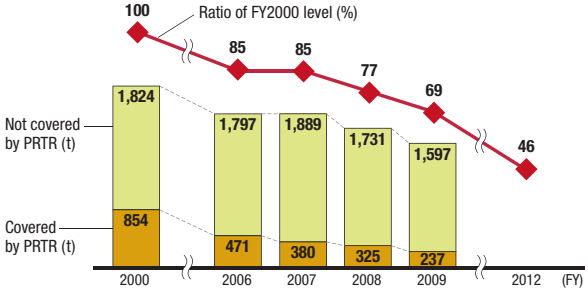


- The amount consumed refers to the amount of substances covered by PRTR that are changed into other substances by chemical reaction or transferred outside along with products whether they are contained therein or accompany them.
- The amount of removed and treated refers to the amount of substances 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 sewage 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.

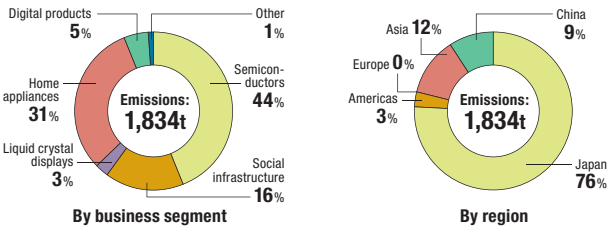
Reducing emissions of substances

Toshiba Group strives to reduce the consumption of substances targeted for reduction if they have large direct impacts on the environment. By business segment, home appliances and semiconductors account for over 70% of the total emissions of such substances, and by region, 70% of such emissions originate from Japan. In FY2009, Toshiba Group gave priority to taking measures for substances contained in paints and cleaning solvents, which ranked high among such emissions, and promoted such initiatives as introducing systems for removing volatile organic compounds (VOCs) into the paint process, using alternative substances for the cleaning process, and improving other processes. Due to the effects of these measures and decreased production in the first half of the year, Toshiba Group reduced emis-

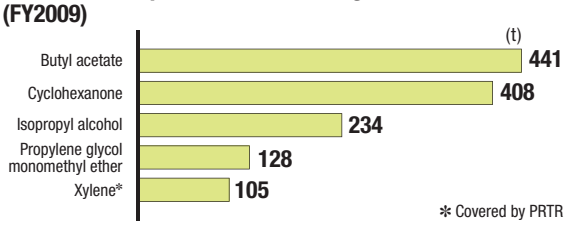
■ Changes in emissions of substances targeted for reduction



■ Breakdown of emissions of substances targeted for reduction (FY2009)



■ Emissions of top five substances targeted for reduction (FY2009)



Example:1 **Reducing VOC emissions in the fluorescent lamp manufacturing process**

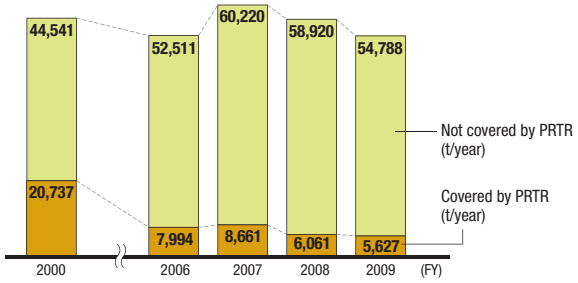
Toshiba Lighting and Technology Corporation

In the manufacturing process for fluorescent lamps, butyl acetate is used as a solvent when fluorescent substances are applied. Butyl acetate, a VOC targeted for reduction, has been emitted into the atmosphere after fluorescent substances were applied and dried. Toshiba Lighting and Technology Corp. recently reduced its emissions into the atmosphere substantially by installing a butyl acetate removal system at the overflows. This system, which uses the regenerative catalytic incineration method, employs catalysts to burn and decompose butyl acetate. In addition, butyl acetate can be burned using early heat sources

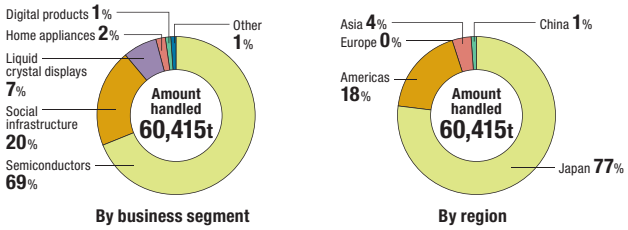
sions of substances targeted for reduction by 31% compared to the FY2000 level, achieving the target for the year. From FY2010 and onward, the Group plans to use alternative substances and improve processes as an upstream countermeasure and introduce emission removal systems as a downstream countermeasure.

A look at the substances handled, on the other hand, shows that semiconductors and social infrastructure systems account for more than 80% of the total, with substances used for chemical reactions and wastewater treatment ranked high. The material balance for PRTR-covered chemicals indicates that 66% of them are removed through neutralization and adsorption and 18% 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 4% of the chemicals used are discharged into the air or public water systems. Going forward, Toshiba Group will continue to ascertain how chemicals are being used and manage their use properly.

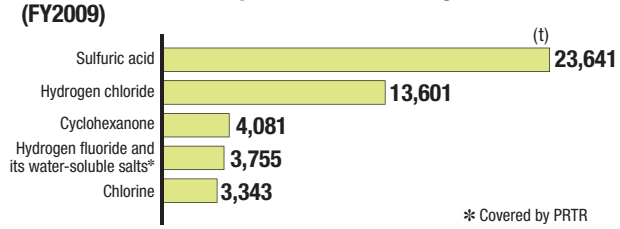
■ Changes in amounts handled of substances targeted for reduction



■ Breakdown of the amounts handled of substances targeted for reduction (FY2009)

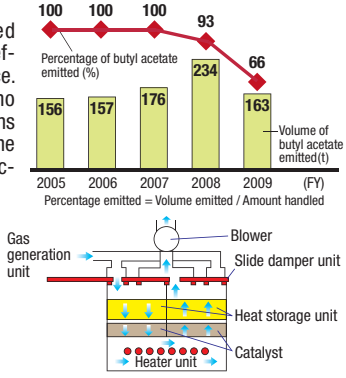


■ Amounts handled of top five substances targeted for reduction (FY2009)



alone by storing heat obtained from incineration, enabling the efficient processing of the substance. Furthermore, since practically no fuel is used, CO_2 and NO_x emissions from fuel can be reduced. Thus the company takes care to avoid secondary environmental pollution.


Fluorescent lamp manufacturing process



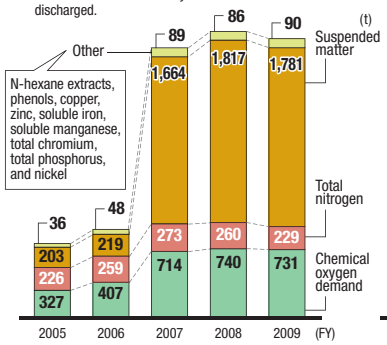
Management of substances that have impacts on the atmospheric and aquatic environments

Toshiba Group is working to grasp the extent of emissions of sulfur oxides (SO_x) and nitrogen oxides (NO_x), both of which are major causes of air pollution, as well as water pollutants and ensure appropriate management of such emissions. Each business 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.

Business 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. (For details see p. 15)

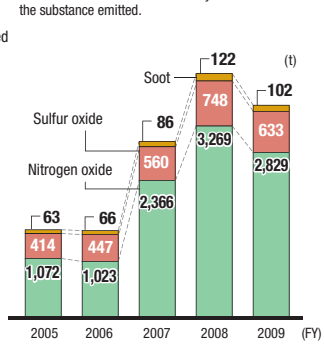
■ Changes in impacts on the aquatic environment

In accordance with the Water Pollution Control Act, the amount of impact is calculated by multiplying the concentration of each substance by the amount of the substance discharged.



■ Changes in impacts on the atmospheric environment

In accordance with the Air Pollution Control Act, the amount of impact is calculated by multiplying the concentration of each substance by the amount of the substance emitted.



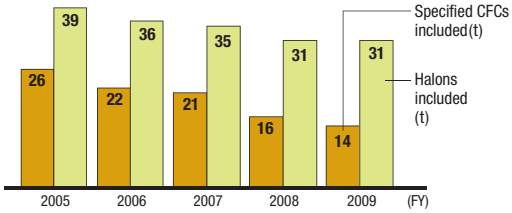
* Starting FY2007, data include those for Sigma Power Ariake and Sigma Power Tsuchiura.

Management of ozone-depleting substances

Previously, Toshiba Group used chlorofluorocarbons (CFCs), trichloroethane, and other ozone-depleting substances as coolants for refrigerators as well as for the cleaning of parts, the dry-etching of semiconductors, and for the forming of heat insulators. Of these, the use of specified CFCs for cleaning was completely discontinued in 1993, and that for inclusion in products in 1995.

On the other hand, Toshiba Group manages air-conditioning systems, fire-extinguishing equipment, and other products that include CFCs and halons by affixing stickers to them stating that they include the substances. CFCs and halons are collected and treated appropriately when the products are no longer used. Currently, 1,794 air-conditioning systems and 856 fire-extinguishers and fire-extinguishing facilities use CFCs and halons, and the amounts of specified CFCs and halons included in these products are 14 tons and 31 tons, respectively. These amounts are decreasing each year through appropriate management.

■ Changes in the amount of specified CFCs and halons included in products



Efficient Use of Resources

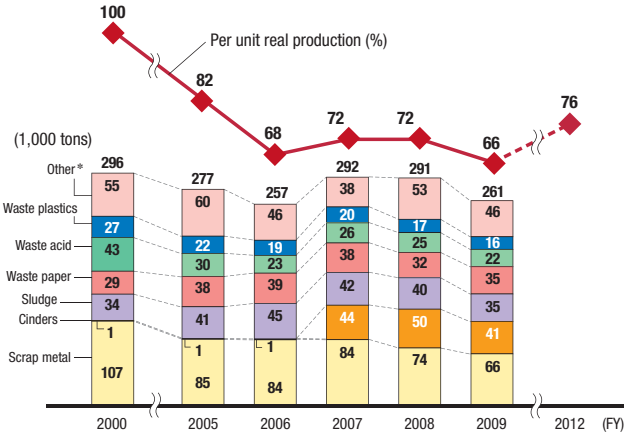
In order to reduce the volume of waste generated and finally disposed of, Toshiba Group will work to use resources effectively on a continuous basis. We will also promote proactive recycling and strive to use water resources effectively.

Reducing the total waste volume

As part of its efforts to use resources effectively to create a recycling-oriented society, Toshiba Group aims to reduce the total volume of waste generated from production and other business processes, including items with value that are sold, by 24% compared to the FY2000 level on a per unit real production basis by FY2012. In FY2009, the total volume of waste generated on a per unit real production was 66% of the FY2000 level, a 34% reduction compared to the target of 23%. The total volume of waste generated was about 260,000 tons, approximately 30,000 tons less than in the previous year. This is attributed to the effects of measures to decrease total waste volume, such as reducing the volume of materials used and products generated during the treatment process through improvements in the manufacturing and treatment processes. In addition, the effects of decrease in production due to the economic downturn affected the results of FY2009. By waste type, scrap metal from power generation equipment and transformer equipment production sites accounted for the largest percentage of the total, and other waste included sludge from semiconductor production sites and cinders resulting from power generation operations. Toshiba Group will strive to curb the total volume of waste generated mainly by increasing production efficiency and wastewater treatment efficiency.

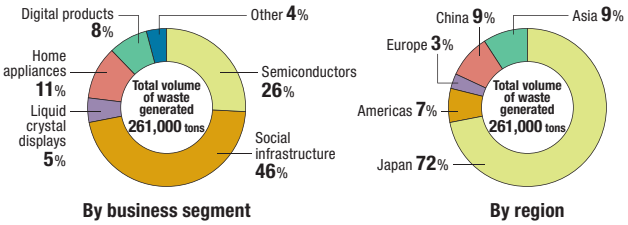
It is expected that the volume of waste generated will grow in the future as business expands as a result of economic recovery, but Toshiba Group will make efforts to reduce the total volume of waste generated by taking various measures on a continuous basis.

■ Changes in the total amount of waste generated



* Other waste includes waste oil, wood chips, refuse glass, and specified hazardous industrial waste.

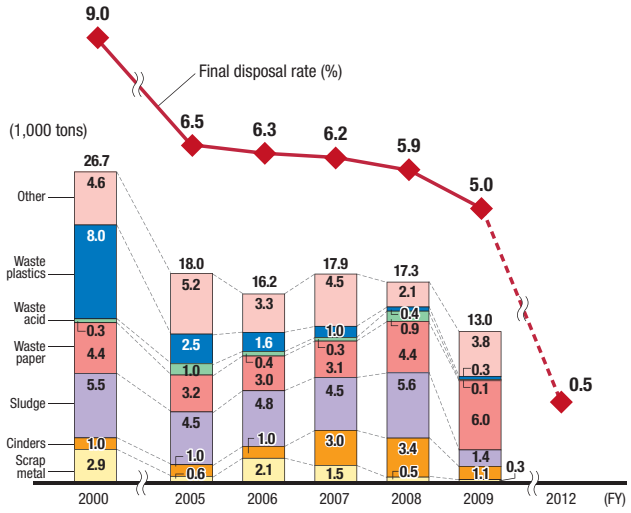
■ Breakdown of the total volume of waste generated



Reducing the amount for final disposal

Toshiba Group aims to achieve zero waste emission (see note 5 on p.10 for the definition)---an initiative of reducing final landfills to zero by reusing and recycling waste generated (including objects with value that are sold) at plants and other business sites as much as possible---at all its bases in FY2010. In FY2009, the Group reduced the amount of final disposal by about 4,300 tons compared to the previous year mainly by making all-out efforts to sort out waste, finding new uses for recycled waste, and improving treatment processes so that recycled waste could be used for materials. The final disposal rate was 5.0%, 0.9 percentage points lower than a year earlier. By business segment, social infrastructure systems accounted for about 80% of the amount of final disposal, and stepping up efforts to reduce the amount of final disposal in this business segment is an issue to be addressed by the Group. Characteristic waste of this segment includes cinders resulting from power generation operations and waste paper from overseas subsidiaries involved in the production of power generation equipment. Toshiba Group is taking measures to improve treatment processes so that cinders can be recycled chiefly to produce cement materials. The Group will also concentrate its efforts on

■ Changes in the final waste disposal amount and the final disposal rate



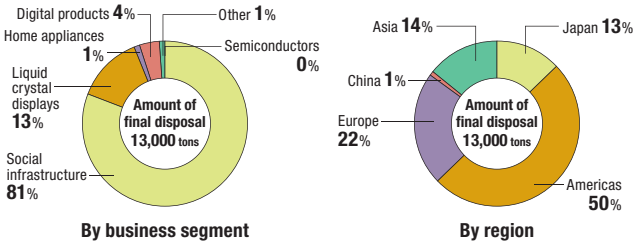
Example:1 **Turning wastewater treatment sludge into fertilizer**

Toshiba Mobile Display Co., Ltd.

At Toshiba Mobile Display Co., Ltd., which mainly manufactures liquid crystal display panels, large volumes of sludge were generated when wastewater from the manufacturing process was treated to make it harmless. Previously, the company outsourced the treatment to disposers. Paying attention to the fact that sludge contained much phosphoric acid, however, it considered using it as raw material for compound fertilizers. It reviewed the wastewater treatment process and adjusted the concentration of phosphoric acid in sludge to a level that enabled the sludge to be sold as a product with value, thus establishing a system to reuse wastewater as raw material for fertilizer.

increasing waste paper recycling by thorough sorting, including enhancement of employees' awareness. In FY2009, the percentage of bases that achieved zero waste emission to all Toshiba Group bases was 70% compared to the target of 80% for the year. In particular, overseas bases with underdeveloped recycling systems and infrastructures were slow making progress in this area. In the future, Toshiba Group will continue its initiatives by, for example, further advancing activities that help identify and develop recyclers overseas mainly through information exchange with local governments and business partners.

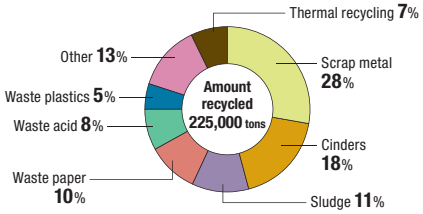
■ Breakdown of the amount of final waste disposal (FY2009)



●Promoting recycling

In FY2009, Toshiba Group recycled 225,000 tons of resources. The recycled resources consisted mainly of scrap metal, cinders, sludge, and waste paper, and 93% of them were used effectively for material recycling (recycled into materials for products), and the remaining 7% for thermal recycling (heat recovery). The ratio of resources recycled into materials was increased by nine percentage points compared to the 84% achieved in FY2008. In the future, Toshiba Group will continue to increase the total amount 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 amount recycled (FY2009)



Efficient use of water resources

As part of the measures to cope with water shortages worldwide, Toshiba Group is striving to reduce the volume of water it uses for its business operations. The goal of the Group is to reduce water received per unit real production by 10% compared to the FY2000 level in FY2012. The amount of water received per unit real production in FY2009 was reduced to 70% of the FY2000 level, a 30% reduction, greatly surpassing the goal of 9%. The absolute amount of water received was about 53 million m^3, about three million m^3 less than in the previous year.

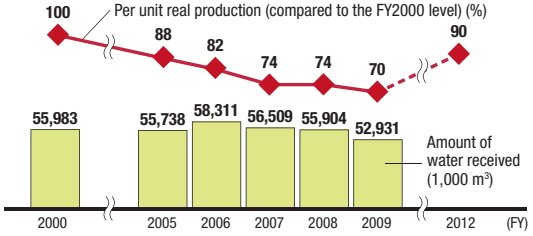
By business segment, the semiconductor business received nearly half of the water. Therefore, Toshiba Group is pushing forward with initiatives for reducing water consumption in this segment.

Specific measures include reusing water resources by introducing wastewater treatment and collection systems into semiconductor production bases that consume much water and using a dry exhaust gas treatment process.* Thus Toshiba Group is reducing water consumption in a systematic way.

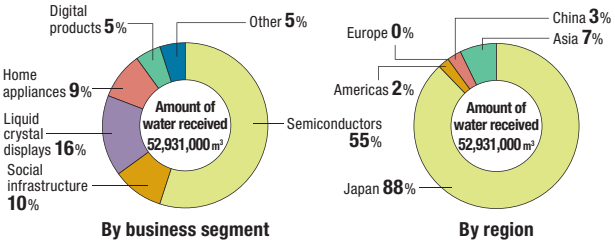
By region, Japan accounts for about 90% of the total amount of water received, but for regions where water is in short supply, Toshiba Group will steadily reduce the amount of water it receives by setting separate goals on a region-by-region basis.

* The conventional wet method involved treating waste perfluoro compound gas by decomposing it and then dissolving the fluorine in water. The dry process makes treatment water unnecessary by absorbing fluorine using calcium.

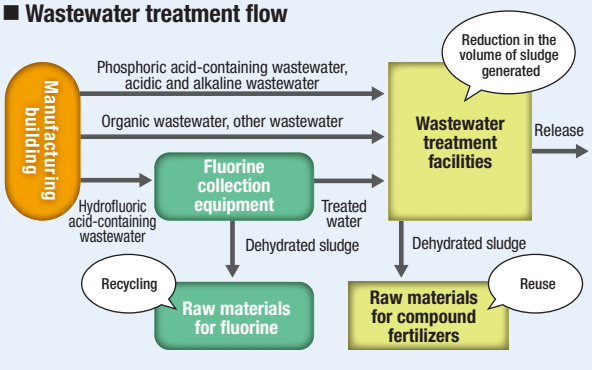
■ Changes in the amount of water received and that per unit production



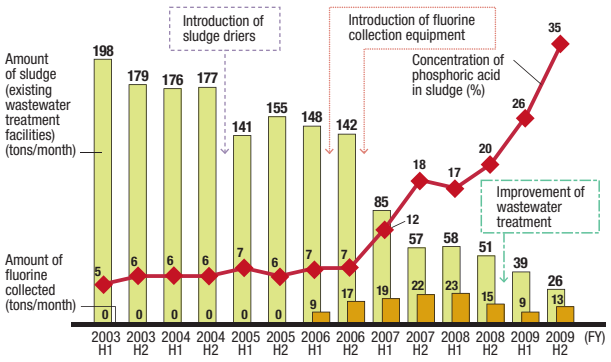
■ Breakdown of the amount of water received (FY2009)



■ Wastewater treatment flow



■ Changes in the amount of sludge generated



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 business 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 business 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 business sites confirmed contamination at 17 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.

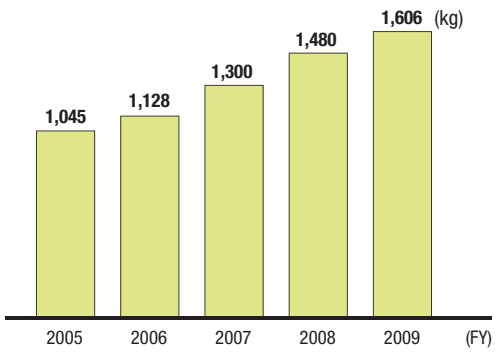
Water pumping is conducted primarily in areas where VOCs remain at high concentrations, but plans call for Toshiba Group to keep the amount of VOCs collected at 1,000 kg/year by taking such measures as increased water pumping in areas where VOCs remain at relatively high concentrations after the concentration of VOCs in other areas declines as purification advances. In FY2009, approximately 1,600 kg of VOCs were collected. 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.

■ Purification of soil and groundwater contaminated with volatile organic compounds

Business site	Location	Progress in purification	Purification method*1	Amount collected*2 (kg)
Fukaya Operations, Toshiba Corp.	Fukaya City, Saitama Prefecture	Being monitored*3	A	—
Toshiba Electric Appliances Co., Ltd.	Maebashi City, Gunma Prefecture	Being monitored	D, F	—
Former site of Asia Electronics Inc.'s Yokohama Operations	Yokohama City, Kanagawa Prefecture	Being monitored	A, E, G	—
Komukai Operations, Toshiba Corp.	Kawasaki City, Kanagawa Prefecture	Purification in progress	A, G	82.5
Microelectronics Center, Toshiba Corp.	Kawasaki City, Kanagawa Prefecture	Purification in progress	A	10.3
Himeji Operations (Taishi district), Toshiba Corp.	Taishi Town, Ibo County, Hyogo Prefecture	Being monitored (North district)	D, F, G	—
		Purification in progress	A	229.4
Himeji Operations (Yobe district), Toshiba Corp.	Himeji City, Hyogo Prefecture	Work in progress that will allow purification measures to be taken	E,F	—
Oita Operations, Toshiba Corp.	Oita City, Oita Prefecture	Purification in progress	A	1.5
Fuji Operation Center, Toshiba Carrier Corp.	Fuji City, Shizuoka Prefecture	Purification in progress	A, B	281.1
Tsuyama Operation Center, Toshiba Carrier Corp.	Tsuyama City, Okayama Prefecture	Purification in progress	A, B	2.8
Former site of Toshiba Components Co., Ltd.'s Yokohama Works	Yokohama City, Kanagawa Prefecture	Purification in progress	A	14.6
Kawamata Seiki Co., Ltd.	Kawamata Town, Date County, Fukushima Prefecture	Purification in progress	A	Less than 0.1
Kitashiba Electric Co., Ltd.	Fukushima City, Fukushima Prefecture	Purification in progress	A	0.5
Former site of Toshiba Shomei Precision Corp.'s Kawasaki Works	Kawasaki City, Kanagawa Prefecture	Being monitored	A, B, F	—
Former site of Toshiba Lighting & Technology Corp.'s Iwase Works	Sakuragawa City, Ibaraki Prefecture	Purification in progress	A	0.1
Ibaraki Plant, Lighting Device & Fixture Corp.	Joso City, Ibaraki Prefecture	Being monitored	A	—
Kimitsu Operations, Toshiba Components Co., Ltd.	Kimitsu City, Chiba Prefecture	Purification in progress	A, B	984.2

*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 2009 to March 2010.
*3 Monitoring: Monitoring to confirm how things develop after work that will allow measures to be taken or purification is completed.

■ Changes in the amount of volatile organic compounds (VOCs) collected (17 locations listed above)



Example:1 Environmental measures

Fuji Operations, Toshiba Carrier Corporation

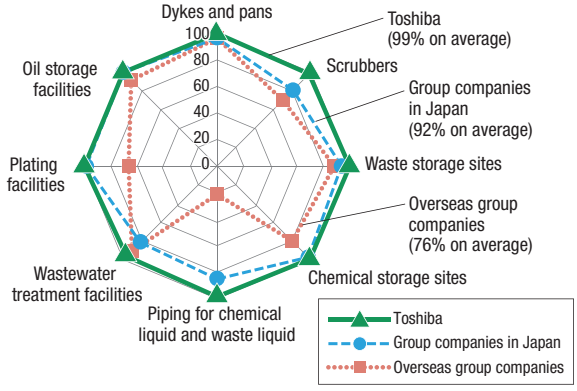
The Fuji Operations of Toshiba Carrier Corp. took the opportunity of modifying some of its buildings to dig and remove soil contaminated with chlorinated volatile organic compounds. The removal work was completed in January 2010.

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 bases are also promoting continuous improvements in this area. In FY2009, Toshiba Group achieved a compliance rate of 99% for all of Toshiba's bases and 92% for all of its group companies' bases 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 (FY2009)**



Example:2 **Measures to prevent leaks of chemicals at environment-related facilities**

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 dispose of PCB waste appropriately by July 2016. At March 2010, Toshiba Group reported environmental liabilities of approximately 9 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 business 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 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 6.7 billion yen in environmental liabilities was reported as a loss that could reasonably be estimated in March 2010. 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.

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 dykes 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 FY2009, about 120 transformers and large condensers 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

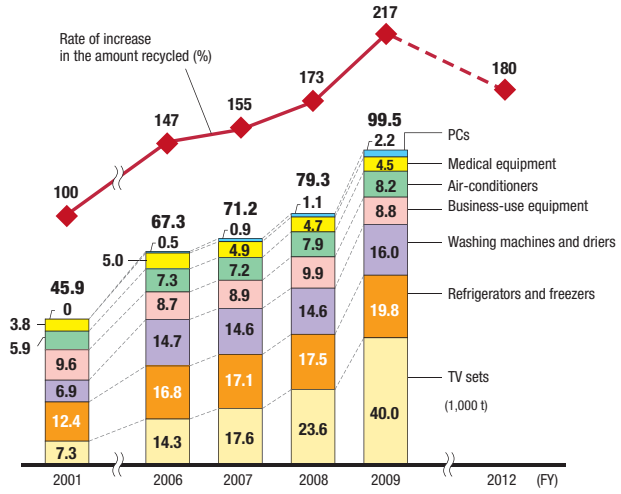
Toshiba Group is expanding the recycling of end-of-life products globally. In Japan, too, the Group is actively promoting the recycling of end-of-life products centered on waste home appliances and personal computers.

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 to use. In order to minimize collection and recycling costs as it complies with each country's recycling scheme, the Group aims to increase the volume of end-of-life products recycled by 180% compared to the 2001 level by 2012. In Japan, in addition to products covered by the Law for the Recycling of Specified Kinds of Home Appliances, the Act on the Promotion of Effective Utilization of Resources, and other relevant laws, it has established a unique scheme to collect medical equipment, elevators, POS systems, and other products. Toshiba Group also responds appropriately to the Directive on Waste Electrical and Electronic Equipment (WEEE) in Europe and state statutory regulations in the United States as U.S. state governments step up recycling legislation. Furthermore, it is preparing to respond appropriately to recycling-related statutory regulations as governments in China and other Asian countries as well as Oceania plan to put them in place. In FY2009, in Japan and abroad, Toshiba Group collected about 128,000 tons of end-of-life products, of which it recycled about 99,500 tons. The Group increased the weight of end-of-life products recycled by 217%, exceeding the goal substantially for FY2009,* because both the volume of four types of waste home appliances collected under the eco-point system in Japan and that of end-of-life products collected in Europe and North America were increased. 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.

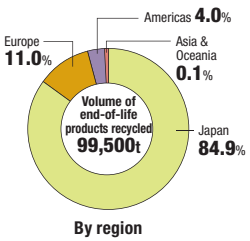
* The FY2009 goal was to increase the weight of end-of-life products recycled by 159% compared to the FY2001 level.

■ Changes in the volume of end-of-life products recycled (global)

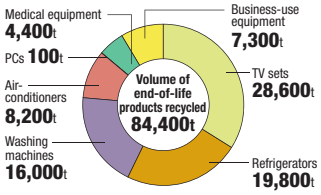


■ Breakdown of the volume of end-of-life products recycled (FY2009)

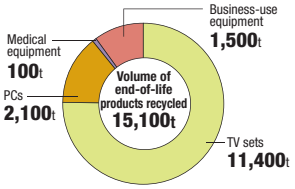
Looking at the volume of end-of-life products recycled by region, in Japan 85% of the total volume is recycled, with four types of home appliances accounting for the bulk of this. Major items collected and recycled in Europe, which has the next highest recycling ratio after Japan, include TV sets, PCs, multifunctional peripherals (MFPs), and medical equipment. In the U.S., major items include TV sets and PCs. Increasing the volume of end-of-life products recycled in China and other Asian countries is an issue to be addressed in the future.



By region



Japan

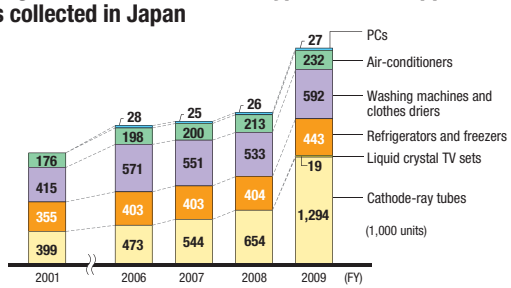


Overseas

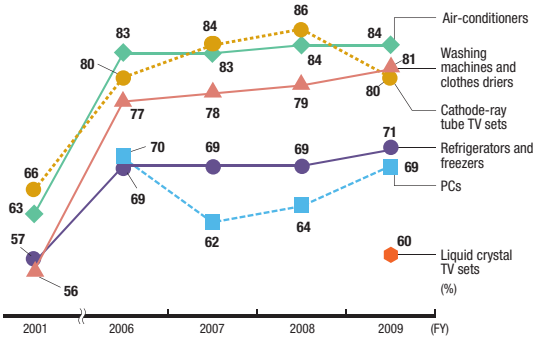
Recycling of end-of-life products in Japan

In Japan, Toshiba Group is collecting and recycling end-of-life products in accordance with the Law for the Recycling of Specified Kinds of Home Appliances and the Act on the Promotion of Effective Utilization of Resources. The number of four types of home appliances collected in FY2009 was approximately 2.58 million, about 14% of all appliances collected in Japan, and this remained almost at the same level as in the previous year. And 27,000 PCs were collected from business firms and homes for recycling. With respect to liquid cryst al TV sets and clothes dryers, which came to be covered by the Law for the Recycling of Specified Kinds of Home Appliances in April 2009, Toshiba Group is working with disposers to ensure appropriate treatment of hazardous substances and efficient collection and recycling of items with value such as iron, copper, aluminum, and plastics.

■ Changes in the number of four types of home appliances and PCs collected in Japan



■ Changes in the percentage of four types of home appliances and PCs recycled in Japan

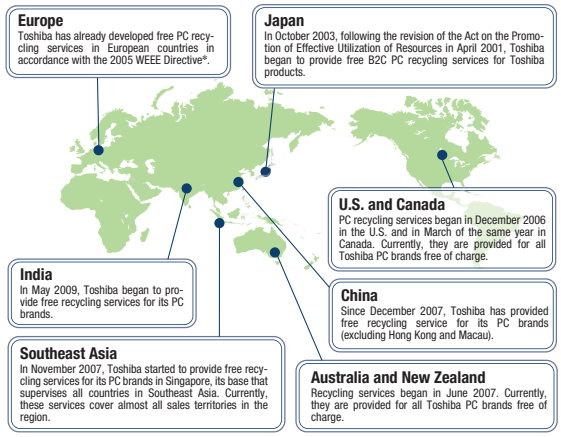


Example:1 Global recycling of personal computers

Digital Products & Network Company, Toshiba Corporation

In order to implement a PC recycling program in all its sales territories worldwide, Toshiba Corp. has begun to provide PC recycling services there, and these services currently cover more than 80% of these territories. In FY2009, it started to offer these services in India, and in the future, it will consider launching the services in areas that are not yet covered by them.

■ Areas in which the PC recycling program is implemented



* The WEEE Directive is a directive of the European Union concerning waste electrical and electronic equipment.

Example:2 Recycling of TV sets in the United States

Toshiba America Consumer Products L.L.C.*1

In the United States, Toshiba America Consumer Products L.L.C. is contributing to the creation of a recycled-oriented society through the collection and recycling of TV sets by MRM*2, a recycling firm. Along with meeting state statutory regulations, the company is carrying out a collection program at 400 locations in mainland U.S. in order to increase consumer convenience in recycling. In November 2009, MRM won the TV Recycling Challenge award from the U.S. Environmental Protection Agency for its recycling system and recycling efforts. Toshiba America Consumer Products also collects TV sets through recycling events held in partnership with major retailers and audits recycling firms.

Scene from a recycling event

Winning the TV Recycling Challenge award

*1 Integrated into Toshiba America Information Systems, Inc. in July 2010
*2 Electronic Manufacturers Recycling Management Company, LLC (MRM) is a recycling management firm established jointly with Matsushita Electric Industrial Co., Ltd. and Sharp Corp. in September 2007. For more details visit its website: http://www.mrmrecycling.com/

Example:3 Recycling of toner cartridges in the U.S.

Toshiba America Business Solutions, Inc.

Since the autumn of 2008, Toshiba America Business Solutions, Inc. has implemented the Zero Waste to Landfill recycling program in North America in collaboration with Close the Loop Inc*. Toner cartridges, consumables, and replacement parts collected through this program are recycled into materials and such products as park benches.

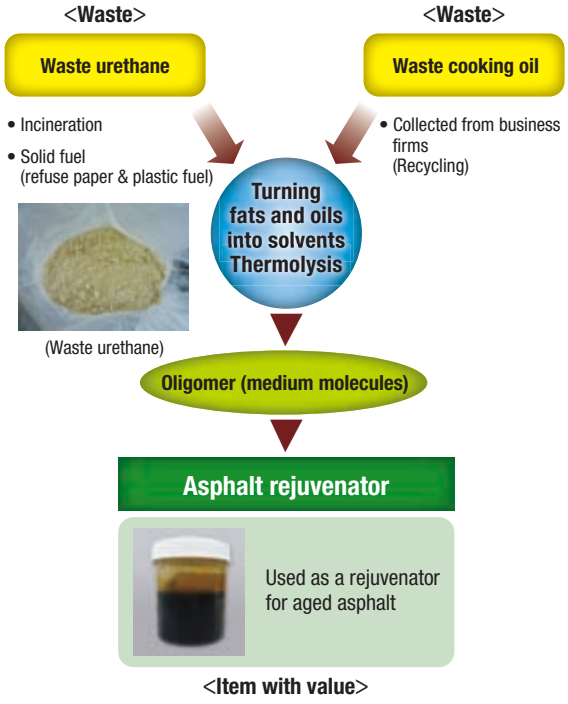
Collection box

* Close the Loop Inc. develops business in North America, Australia, and other regions.

Example:4 Material recycling for waste urethane

Nishinihon Kaden Recycle Corporation

In order to mitigate environmental impacts, Nishinihon Kaden Recycle Corp. is working to reduce waste by finding new uses for it. The company, for example, uses waste urethane from refrigerators, which was previously treated as waste, for fuel and mixes it with waste cooking oil to produce asphalt rejuvenator.



Example:5 Recycling of flat-panel TV sets

Term Corporation

Starting April 1, 2009, flat-panel TV sets came to be covered by the Law for the Recycling of Specified Kinds of Home Appliances. Term Corp. contributes to the recycling of resources such as iron, aluminum, and plastics by disassembling flat-panel TV sets manually and sorting out substances thoroughly for collection. In order to more effectively recycle flat-panel TV sets, which are expected to be discharged as waste in larger numbers in the future, the company is working to appropriately treat hazardous substances included in the backlight, develop conveyance and disassembly systems that help reduce operators' workload, and establish a recycling line.

Greening of Products
Environmentally Conscious Products

We have set "eco-targets" as new standards for environmentally conscious products (ECPs) in order to achieve the highest level of environmental performance.

While various energy-saving initiatives have been implemented in advanced countries, wider use of home appliances and digital equipments in emerging countries as a result of their economic growth is likely to cause significant increases in environmental impact due to increased consumption of energy and resources. Electrical appliance manufacturers have a responsibility to support convenient and comfortable lifestyles while minimizing environmental impact. Toshiba Group is making every effort to improve the environmental performance of all its products. We have set eco-targets in order to achieve the highest level of environmental performance for all products that we develop.

Summary of activities in FY2009

Greening of Products P31

Initiatives aimed at achieving the highest level of environmental performance
- Creation of environmentally conscious products (ECPs)

Aiming to increase product eco-efficiency
- Product eco-efficiency increased to 2.13, exceeding the goal of 2.03

Percentage of ECPs to total sales
- ECP sales increased to 65%, exceeding the goal of 50%

Mitigation of Climate Change P33

CO_2 emissions reductions through global eco products
- CO_2 emissions decreased by 3.4 million tons, falling short of the goal
- Reducing CO_2 across the world

Management of Chemicals P35

Proper management of chemicals contained in products

Promoting abolishment, reduction and substitution
- 15 specified chemicals eliminated from 99% of products, exceeding the goal of 80%.
- Reduction in the use of PVC and BFRs

Efficient Use of Resources P36

Promotion of the 3Rs through the entire product life cycle
- Approximately 800 tons of recycled plastics used annually

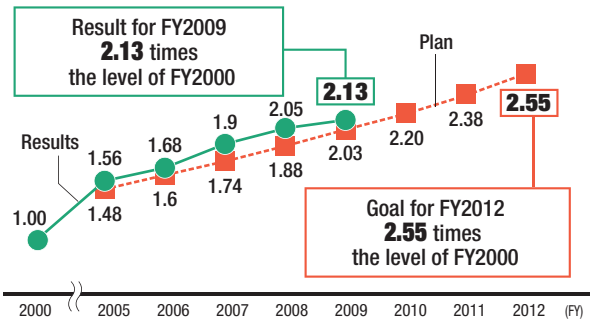
Excellent ECPs P39

13 Excellent ECPs created, exceeding the goal (10 ECPs)

Aiming to increase product eco-efficiency by 2.55 times in FY2012

Viewing the eco-efficiency of products (see p. 37 for details) as an important indicator, Toshiba Group is promoting activities to create ECPs. Our goal is to increase the product eco-efficiency by 2.55 times by FY2012 compared to the level of FY2000. By the end of FY2009, we calculated the Factor values (degree of improvement in eco-efficiency) for 89% of 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 2.13, which far exceeded the goal of 2.03.

Product eco-efficiency $\left[\frac{\text{Value of a product}}{\text{Environmental impact of a product}}\right]$

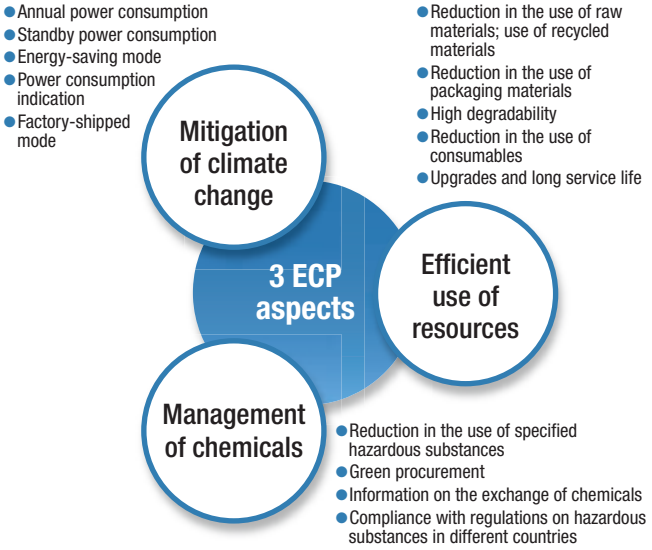


✻ Factor of products whose values have not been calculated were assumed to be 1.

Initiatives for creating ECPs

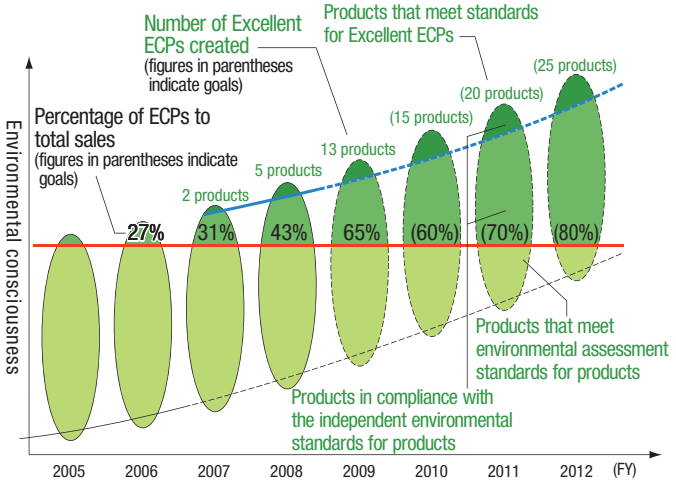
ECPs are products that are designed to be environmentally conscious in all stages of their life cycle, including the procurement of materials, manufacturing, distribution, use, disposal, and recycling. The environmentally conscious product design has three aspects: mitigation of global warming, efficient use of resources, and management of chemicals. Toshiba Group will continue to create ECPs designed to be environmentally conscious in all these aspects through all stages of their life cycle by setting independent environmental standards (ECP standards) for each product.

■ Three aspects of ECP certification



Creation of Excellent ECPs and ECPs

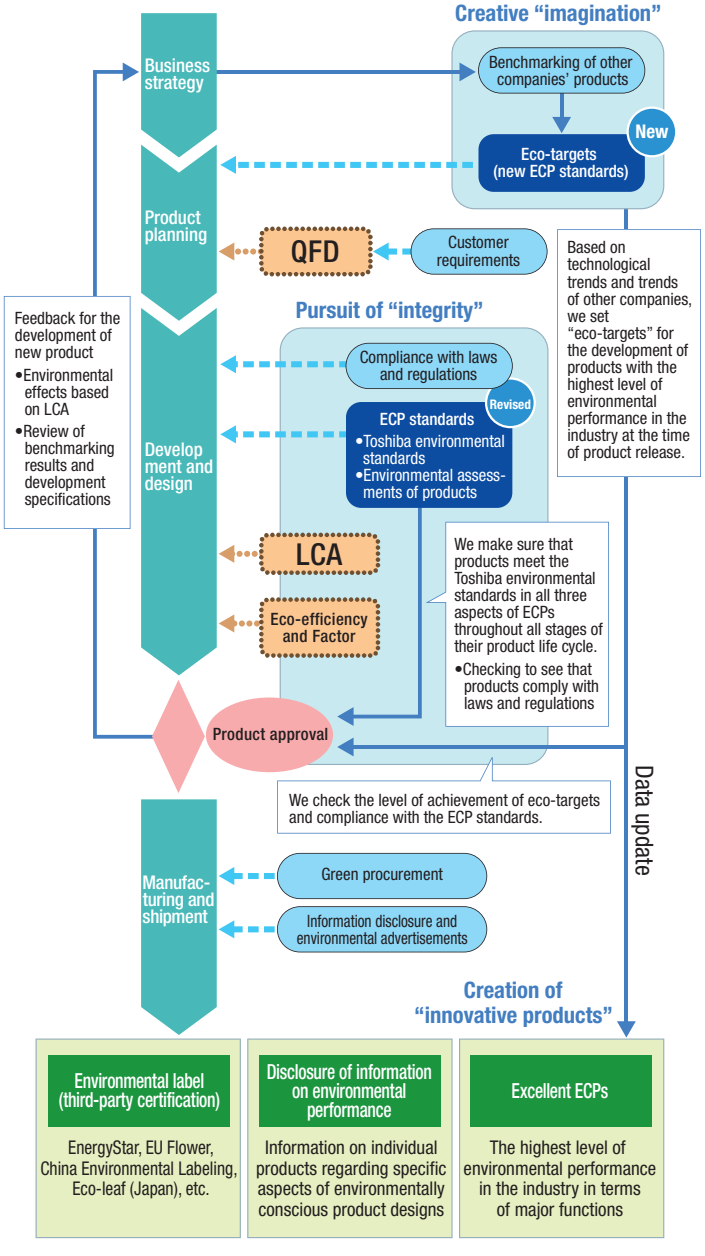
Under the Fourth Voluntary Environmental Plan, Toshiba Group is working to improve the environmental performance of all its products by increasing the percentage of ECPs to total sales and, through the development of Excellent ECPs, create products with the highest level of environmental performance in the industry. In FY2009, the percentage of ECPs to total sales was 65%, which exceeded the goal of 50%, while the number of ECPs newly created was 13, which also exceeded the goal of 10 (see p. 39 for details).



Greening of products

In addition to measures to promote the creation of ECPs, we started a new ECP initiative in FY2010. In the stages of business strategy formulation and product planning, we set "eco-targets" for the development of products with the highest level of environmental performance. Then, in the stages of product development and design, we make environmental assessments of products to make sure that our products comply with laws and regulations and meet the ECP standards (Toshiba environmental standards) in all three aspects (mitigation of climate change, efficient use of resources, and management of chemicals) through all stages of their life cycle. In the product approval stage, we check to see the level of achievement of eco-targets and compliance with the ECP standards and evaluate products for the certification as Excellent ECPs before releasing them. Thus, by unleashing our creative imagination we aim to create innovation through the pursuit of integrity.

■ System for the Greening of Products



Mitigation of Climate Change

Toshiba Group is working to reduce CO_2 emissions through the development of environmentally conscious products. We will continue to provide energy-saving products for countries around the world in order to contribute to the mitigation of climate change.

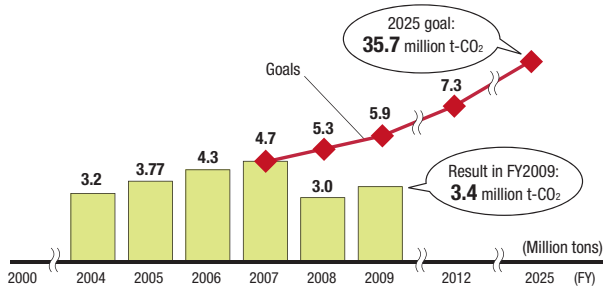
CO_2 emissions reductions through global eco products

In order to mitigate climate chage, Toshiba Group is striving to develop environmentally conscious products which reduce environmental impact throughout their life cycle from the procurement of raw materials and manufacturing to the use and disposal stages.

Toshiba Group's products cover a wide range of categories from consumer electronics to power generation plants, and CO_2 emissions generated by these products in different stages of their life cycle vary from one product to another. For example, digital products like mobile phones and notebook PCs cause environmental impact mainly during the procurement of materials, while semiconductor products, such as SD memory cards, cause most of their environmental impact during manufacturing. Meanwhile, the environmental impact from power consumption during the use of products accounts for the bulk of the impact caused by products that consume a large amount of energy and those that are used for a long period of time, which leads us to believe that the most effective way to reduce their environmental impact is to reduce the amount of power consumed when they are used. For this reason, with a view to appropriately evaluating its diverse product portfolio, Toshiba Group calculates the annual reductions in CO_2 emissions that would be achieved if products purchased in FY2000 were replaced by new ones not only during their use but also through their entire life cycle in order to achieve a greater reduction in CO_2 emissions.

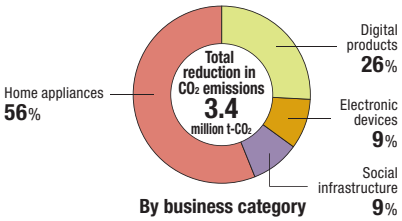
In FY2009, as in the previous year, we fell short of achieving our goal as a result of the economic recession. Therefore, we formed a working group to promote measures to mitigate climate change through products, thereby reducing CO_2 emissions by 3.4 million tons per year, which exceeded the reduction achieved in the previous year.

■ Annual Reductions in CO_2 Emissions through eco products



✻ Figures for FY2009 and subsequent years represent estimates calculated based on CO_2 emissions coefficient for electricity by region

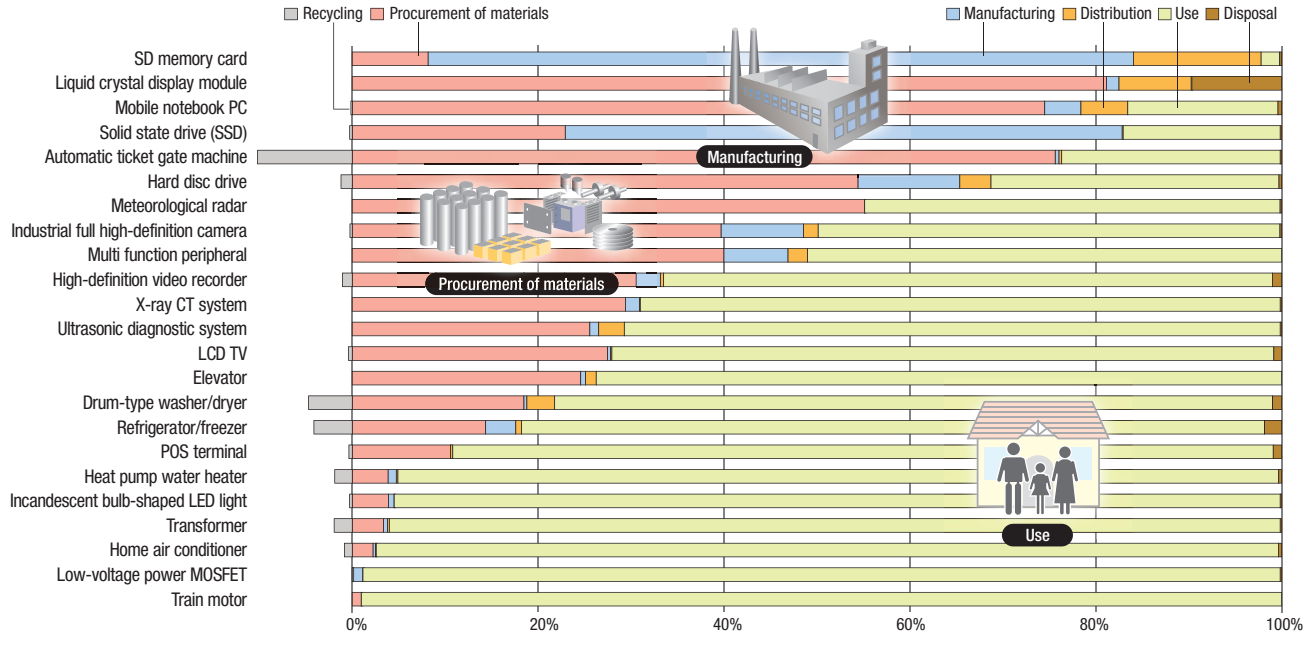
■ Breakdown of Reductions in CO_2 Emissions



✻ Excluding power supply products

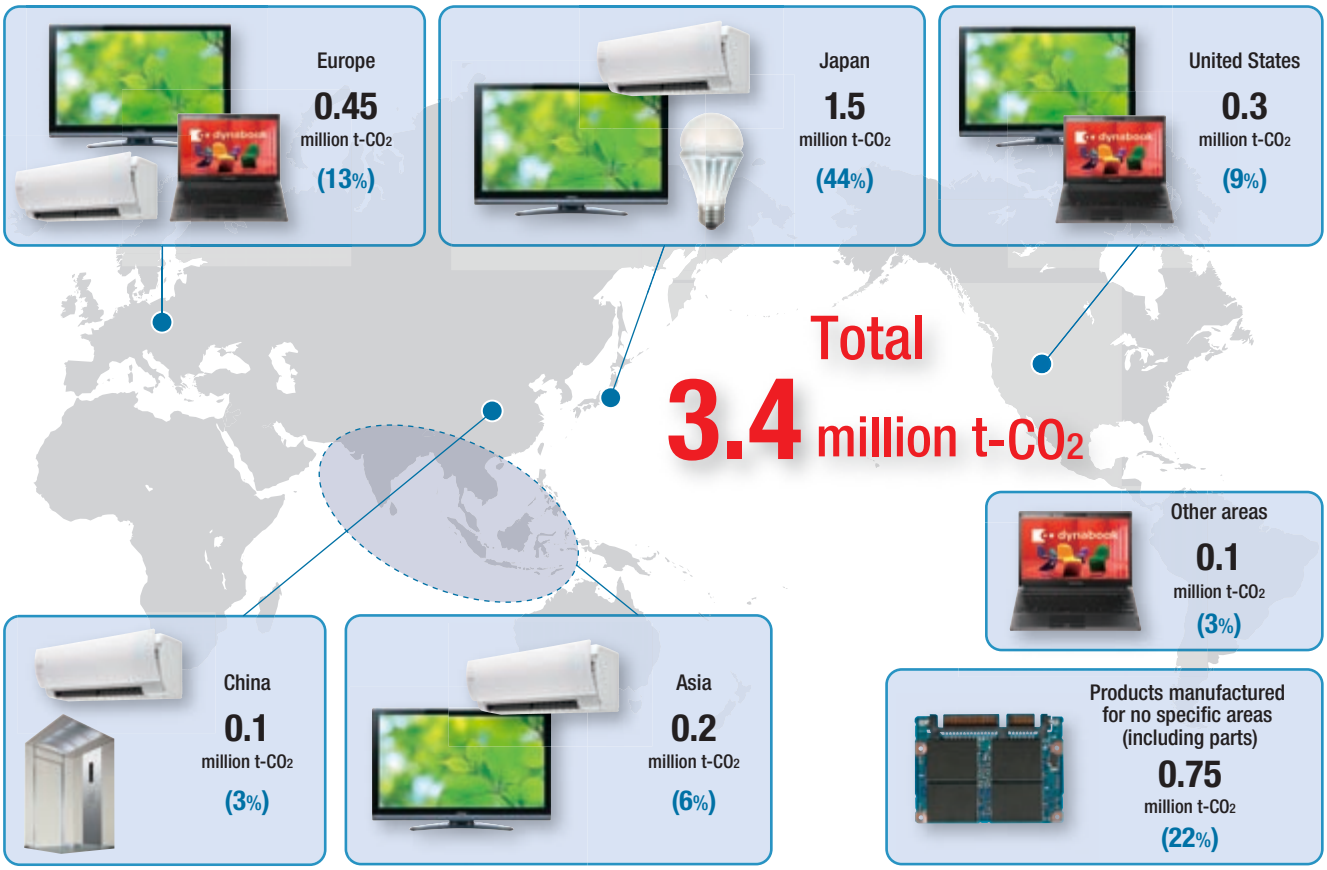
Toshiba Group will continue to achieve greater reductions in CO_2 emissions by identifying key factors that contribute to reducing CO_2 emissions, by sharing advanced examples and core technologies among group companies and by expanding its business in global markets for home appliances that have large energy-saving effects, such as digital products and LED light bulbs—especially in markets in emerging countries where there is a rapidly growing demand. We will create many products with the highest level of energy-saving performance by promoting product design aimed at saving energy through the entire product life cycle and will work to maximize reductions in CO_2 emissions by providing our products to as many customers as possible.

■ Percentages of CO_2 Emissions Generated in Different Stages of the Life Cycle of Toshiba Group's Products



Although about half of the reductions in CO_2 emissions in FY2009 was achieved by products for Japanese markets, Toshiba Group's products, such as LCD TVs, PCs and air conditioners, are contributing to reducing CO_2 emissions in Europe and the United States as well.
Reductions in CO_2 emissions achieved in emerging countries account for only about 10% of the total at present. However, now that there is a rapidly growing demand for home appliances and digital equipment in these countries, we need to support convenient and comfortable lifestyles while mitigating climate change by providing products with a high level of energy-saving performance throughout the world.

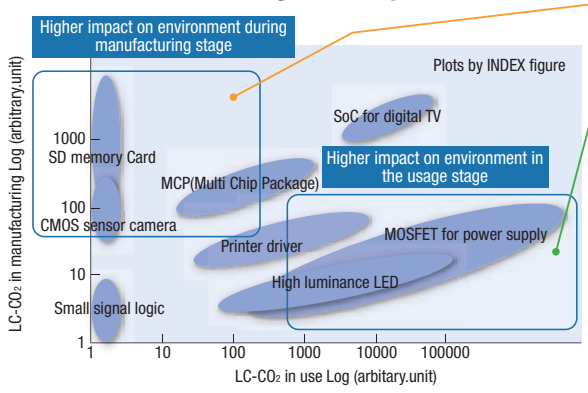
Environmental impact caused by the use of products varies depending on the type of energy supply available in different areas. Average CO_2 emissions coefficients for electricity are used to calculate estimated reductions in CO_2 emissions in Japan, Europe, the United States, Asian countries and China. Global average values are used to calculate estimated reductions in other areas and reductions regarding products, including parts, that are manufactured for no specific areas.
In its global business development, Toshiba Group will continue to contribute to the mitigation of climate change through its energy-saving products in areas around the world.



Case **Initiative for the mitigation of climate change through semiconductors**

Toshiba Semiconductor Company

■ **Balance of CO_2 emissions generated by semiconductors**



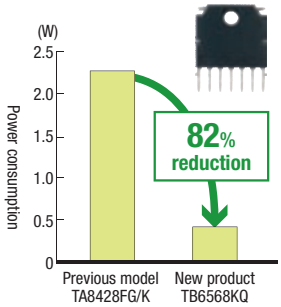
Depending on what products they are used for, semiconductors vary in the balance between environmental impact during material procurement and manufacturing and environmental impact during their use. Toshiba Group is working to mitigate climate change through its measures for the greening of processes as well as products.

Greening of process **See p.17 for details.**

Greening of products

Example of a full-bridge driver for DC motors

We have improved circuit currents, output saturation voltage and on-resistance as compared with previous models, thereby greatly reducing power consumption. The new product model is contributing to reducing the amount of power consumed by various devices that use DC motors, such as ATMs and automatic vending machines.



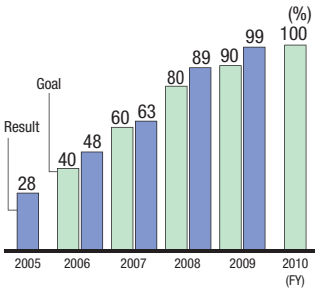
Management of Chemicals

Toshiba Group implements measures to manage chemicals, in accordance with the targets that have been set, through voluntary plans and other initiatives. We also promote green procurement to minimize environmental impact and implement measures to comply with new regulations.

Elimination of the Use of Specified Chemicals

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) and other conferences, Toshiba Group promotes initiatives to eliminate the use of specified chemicals and to reduce and manage the amount of chemicals contained in products so that customers can use Toshiba products with a sense of security. The Fourth Voluntary Environmental Plan, which started in FY2005, identified 15 rank-A chemical substance groups and made it a goal to eliminate the use of all these chemicals by FY2010. The percentage of products that do not contain these substances relative to the total sales reached 99% in FY2009. We are continuing our efforts to totally eliminate the use of these substances.

■ **Ratio of sales of products with 15 substance groups eliminated to net sales**



15 chemical substance groups subject to restriction (rank A)

(1) Bis (tributyl tin) oxide (TBTO)
(2) Tributyl tins (TBSs) and Triphenyl tins (TPTs)
(3) Polychlorinated biphenyls (PCBs)
(4) Polychlorinated naphthalenes (PCNs with 3 or more chlorines)
(5) Short-chain chlorinated paraffins (C10-C13)
(6) Asbestos
(7) Azo colorants
(8) Ozone-depleting substances
(9) Radioactive substances
(10) Cadmium and its compounds
(11) Hexavalent chromium compounds
(12) Lead and its compounds
(13) Mercury and its compounds
(14) Polybrominated biphenyls (PBBs)
(15) Polybrominated diphenyl ethers (PBDEs)

✻ Detailed definitions and exempted uses are provided separately.

Reducing the Use of Chemicals and Using Substitute Materials

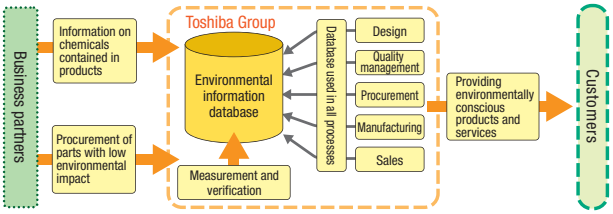
In addition to the 15 chemicals that are prohibited from being contained in products, Toshiba Group has defined 20 substance groups (rank-B substances) that need to be reduced or substituted in order to manage chemicals contained in products. We are actively promoting measures to replace these B-rank substances with substitutes, if such substitutes are available from the viewpoint of mass production and cost efficiency and can contribute to reducing environmental impacts without affecting the functions, performance and quality of products. These measures will be extended to cover other chemical substances, such as polyvinyl chloride (PVC) and brominated flame retardants (BFRs).

Rank-B substance groups:
Polyvinyl chloride; brominated flame retardants (excluding PBBs and PBDEs); antimony and its compounds; beryllium and its compounds; certain phthalates; arsenic and its compounds; bismuth and its compounds; nickel (for external use only); selenium and its compounds; zinc compounds; chlorinated paraffins (excluding some short-chain chlorinated paraffins); trivalent chrome and its compounds; cyanogen compounds; nickel (excluding external use) and its compounds; perfluorocarbons; hydrofluorocarbons; halogen resin additives (excluding brominated flame retardants); sulfur hexafluoride; manganese compounds; organotin compounds (excluding TBT and TPT)

Green Procurement Initiatives

Toshiba Group is promoting green procurement worldwide with the cooperation of its business partners. When procuring parts and raw materials, in addition to coming to a shared understanding of biodiversity initiatives with our business partners, we conduct a survey to check how many chemicals with potentially high environmental impacts or scarce resources are contained in these parts and materials and give priority to those with low environmental impact. Information on parts and materials is stored in a database and used for various purposes, including certifying newly procured materials, making judgments as to whether or not to replace existing materials with substitutes, or developing environmentally conscious products. We also perform analyses of chemicals on our own to verify information on parts and materials and take an active part in developing and improving analysis methods to increase the accuracy and efficiency of data collection.

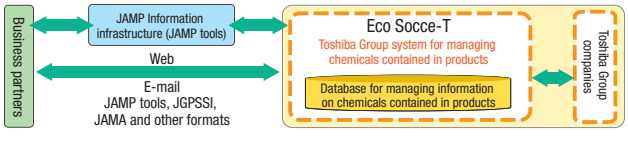
■ **Creating a procurement database, including parts and raw materials**



Compliance with New Regulations

The REACH✻1 regulations, which have been enforced in Europe since June 2007 to control chemical substances, make it a requirement to create a system for disclosing and efficiently communicating information on chemicals contained in parts, materials and products through supply chains. In order to enhance the management of chemicals contained in products, Toshiba Group has developed Eco Socce-T✻2, a system shared by all Toshiba Group companies designed for the integrated management of the acquisition and communication of information on chemicals contained in products. It is usable on the JAMP-GP✻3, which provides a standard survey format in the industry. Using this system, we will implement measures to ensure compliance with the new regulations.

✻1 REACH: Registration, Evaluation, Authorization and Restriction of Chemicals
✻2 Eco Socce-T: Eco-Substances of concern exchange & management system in the Toshiba group
✻3 JAMP-GP: Joint Article Management Promotion Consortium Global Portal



Case **Reducing chemicals in notebook PCs**

Toshiba Digital Products & Network Company

● **PVC/BFR-free**
・No PVC used for the main body of the PC
・No BFR used for the main body of the PC
(Plastic parts weighing 10 g or more)

● **Mercury-free LCD**
We eliminated the use of mercury by using an LED backlight crystal display, thereby producing a mercury-free PC body.


Mercury-free Crystal display

● **Halogen/antimony-free✻ printed wiring board**
We use a printed wiring board containing no halogen compounds (chlorinated or brominated compounds) or antimony compounds for the main substrate.

✻ Standards of the Japan Electronics Packaging and Circuits Association

Efficient Use of Resources

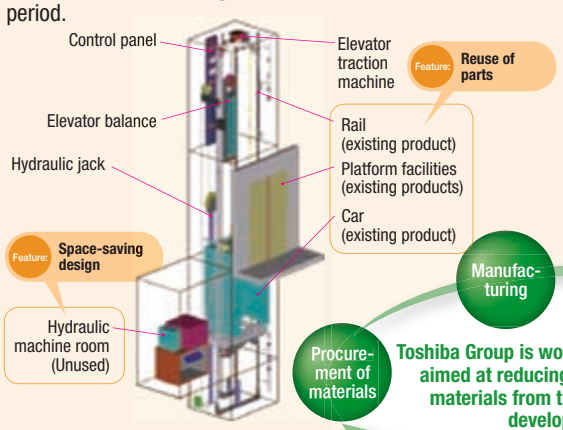
Based on the 3R (reduce, reuse and recycle) design concept, we are working to make efficient use of resources by facilitating their circulation. As part of our effort, we have developed initiatives regarding the use of packaging materials.

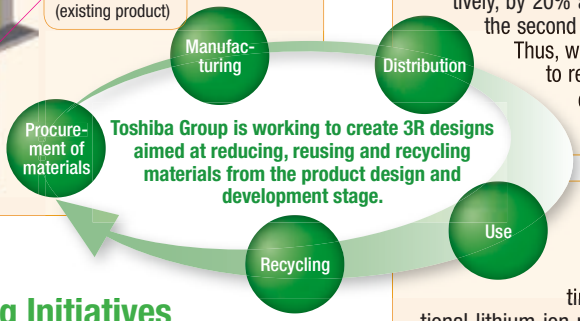
3R Design Concept

In order to create a recycling-based society, there is a need to reduce the amount of resources extracted and discharged as waste throughout the product life cycle. To that end, Toshiba Group is working to create 3R designs aimed at reducing, reusing and recycling materials starting from the product design and development stage.

Reduce/Reuse Elevator renovation

We replace existing hydraulic elevators with rope elevators without removing existing platform facilities, cars or rails. We make maximum use of existing facilities so as to shorten the shutdown period.





Resource Recycling Initiatives

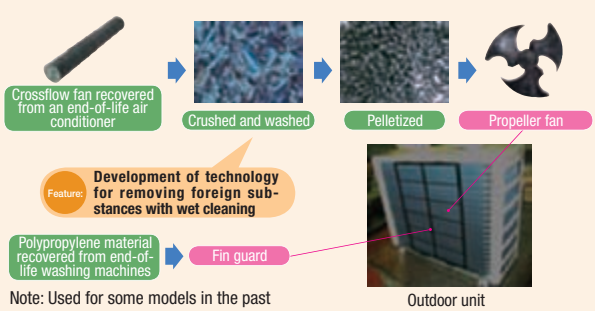
Toshiba Group is working to recycle waste plastic materials generated from end-of-life products. In FY2009, a total of about 800 tons of recycled plastic materials were used for the base plates of washing machines, multifunctional peripherals (MFP), TVs, air conditioners, notebook PCs and other products. We will use recycled materials for a wider range of products in the future.

Note: Post-consumer recycled materials vary in the amount of supply and in quality depending on how they are obtained. We may need to use virgin materials due to a lack of supply or problems in quality.

Recycle Home air conditioners

Using recycled materials for outdoor units of air conditioners.


【RAS-406UDR】



Note: Used for some models in the past

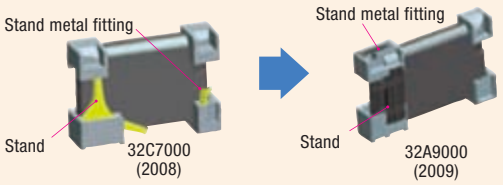
Outdoor unit

Reduction in the use of Packaging Materials

Toshiba Group sets goals for reduction in the use of packaging materials in order to promote the 3Rs for packaging. We will further streamline the use of these materials by setting new goals.

Reduce LCD TV

Reducing the packaging volume by packing the LCD panel and its stand separately.



Transportation efficiency also improved as a result of reduction in volume. The number of units carried by a 10-ton truck and in a 40-ft container increased, respectively, by 20% and 23% compared to the second half of last fiscal year. Thus, we are also contributing to reducing CO_2 emissions during the distribution of our products.

Feature: 14% decrease in packaging volume by packing parts in packages 190 mm in depth

Reduce Rechargeable Battery SCiB™

SCiB™ can be recharged more than 6,000 times and lasts 3 to 5 times longer than conventional lithium ion rechargeable batteries. It contributes to reducing not only waste but also running costs. We will propose new recycling-based business models, such as the reuse of batteries designed to last for a long period of time. (See p. 51 for details)

SCiB™

Feature: Toshiba's unique rechargeable battery technology

eco products awards 2009

Outstanding Award winner, 6th Eco-Products Awards

Recycle Drum-type Washer/Dryer

Using recycled polypropylene materials recovered from the washing tubs of end-of-use washing machines for base plates, etc. About 3.5 kg of recycled polypropylene is used per machine, which accounts for approximately 13% of plastics used and 4% of the product mass.


TW-Z9000

Feature: Use of recycled polypropylene at overseas manufacturing sites

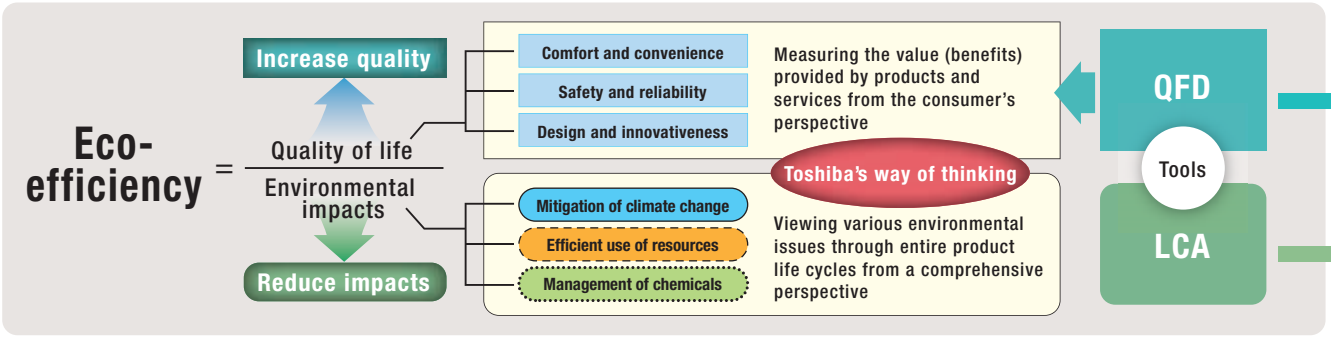
Recycled resin product


Base plate made from 100% recycled polypropylene

Product Eco-efficiency

Eco-efficiency

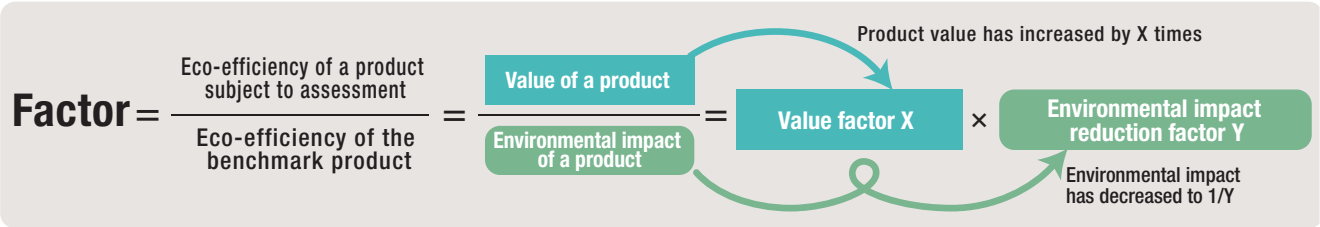
In order to achieve the goal established in the Toshiba Group Environmental Vision 2050 and create a world with all people leading rich lifestyles in harmony with the Earth, it is necessary to improve the eco-efficiency of products and services. Eco-efficiency can be improved by raising the quality of life and by minimizing the environmental impact of products throughout their life cycles. At Toshiba, we use a unique method to measure eco-efficiency in order to create ECPs with high eco-efficiency.



Factor

The Factor indicates how many times larger the eco-efficiency of a product is in comparison with a standard. A greater Factor value means that a product contributes more to the creation of a world with all people leading rich lifestyles in harmony with the Earth through technological progress and innovation.

The Factor is composed of a numerator and a denominator, which represent different aspects of improvement in eco-efficiency. The numerator, which is called the value factor, represents an increase in the value provided by a product, while the denominator, which is called the environmental impact reduction factor, represents a reduction in environmental impact. The Factor value is calculated by multiplying these two components.



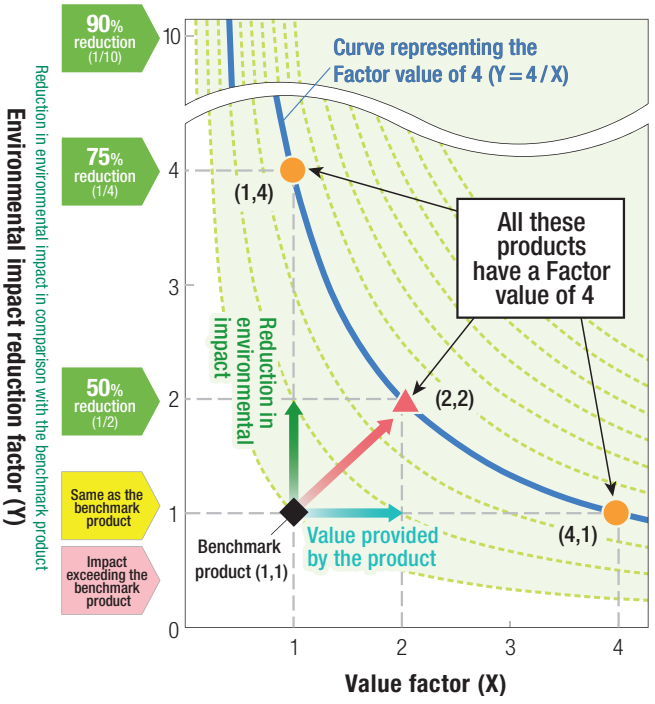
Explanation about the Factor Example of a product with a Factor value of 4

The Factor of a product can be plotted in a graph, as shown in the figure on the right, by combining its values on the x-axis (value factor) and the y-axis (environmental impact reduction factor). For example, a product with value twice that of the benchmark product and with environmental impact reduced to one half is represented by the point (2, 2) (marked with a triangle). The benchmark product is represented by the point (1, 1) (marked with a square).

All combinations that are on the curve shown in the figure on the right have a Factor value of 4 (e.g., points represented by a circle). The Factor, for which values are calculated by multiplying values on the x- and y-axes, generally gives high scores to combinations that strike a good balance between values on the two axes.

For example, the point (2, 2), which is represented by a triangle and has the same value on the x- and y-axes, is located at the shortest distance from the point (1,1) (represented by a square), providing the shortest way to the Factor value of 4. However, products vary in the level of improvement represented by the x- and y-axes and some products deliver excellent performance only in one of these aspects. Toshiba Group checks to ensure that steady progress is made in reducing environmental impact and increasing the value provided by products by visualizing the progress in a graph on the right. The Factor is also used to provide guidelines for making further improvements.

The Factor values of Toshiba Group's products are presented on the following website: http://www.toshiba.co.jp/env/en/products/factorlist.htm



Example of calculation of the Factor value of an LCD TV

Product certified as an Excellent ECP in FY2009
REGZA 52R9000 (November 2009)
Benchmark product: 52L4000-equivalent

Factor value 5.59 = 3.40 × 1.64

Assessment of the product value with QFD

Toshiba Group uses the quality function deployment (QFD) approach to measure the integrated value of products.

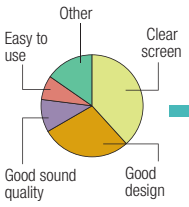
Step 1 Analysis of customer needs
We conduct questionnaire surveys on benefits obtained from the functions and performance of products to study customers' needs.

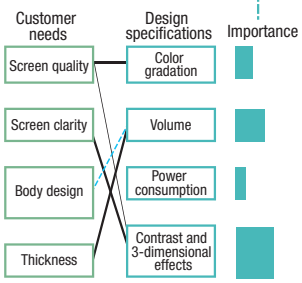
Step 2 Visualization of customer's needs and product specifications
Based on the relationship between customers' needs and product specifications (quality characteristics) and by using QFD, we identify quality characteristics required to meet customers' needs.

Step 3 Comparison of specifications
We evaluate the performance of the product to be assessed by comparing it with the benchmark product.

Step 4 Integration
After comparing specifications and normalizing assessment scores, we adjust the scores with weights and integrate them into a single indicator.

Value factor 3.40



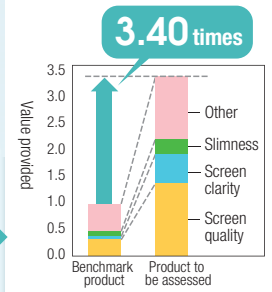


	Benchmark product (2000 model)	Product to be assessed (2009 model)
Color gradation	1024	4096
Volume	174	59
Power consumption	286	108
Contrast and 3-dimensional effects	800	50000

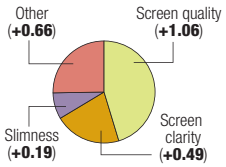
Normalized and weight-adjusted by levels of importance

Single indicator (normalized)

■ Value provided to customers



■ Breakdown of the improvement in value

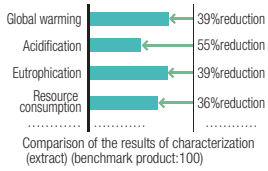


Environmental impact assessed based on the LIME* approach

By using the LIME* approach to calculate weights for different environmental issues, Toshiba Group measures not only the performance of products regarding individual environmental issues but also their overall environmental impact.

Step 1 Life cycle inventory analysis
Using life cycle assessment tools (Easy-LCA*3) and other methods, we calculate the levels of environmental impact of products throughout their life cycles. Easy-LCA provides databases using input-output tables and makes it possible to make life cycle assessments of all products. (See p. 33 for details)

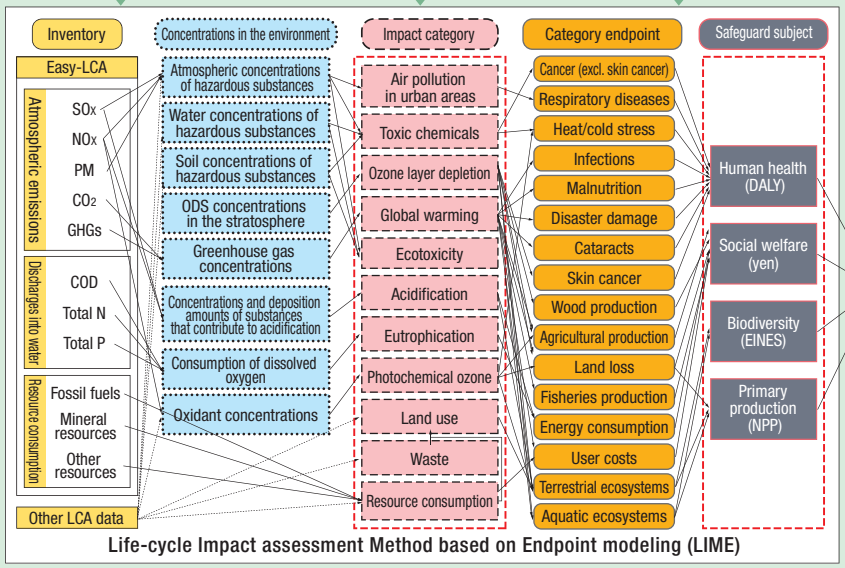
Step 2 Characterization
The levels of environmental impact calculated in step 1 are used to measure environmental effects.



Step 3 Impact assessment
We measure the level of negative environmental impact by the degree of environmental damage to four targets for protection.

Step 4 Integration
We integrate different measurements into a single indicator by determining weights for the four targets for protection and by using an economic value analysis method known as the conjoint analysis method.

Environmental impact reduction factor 1.64

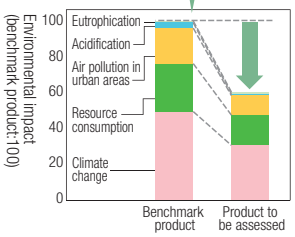


Life-cycle Impact assessment Method based on Endpoint modeling (LIME)

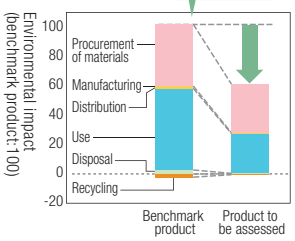
Single indicator (yen)

■ Life cycle environmental impact

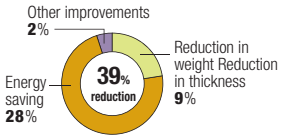
By type of environmental impact **39%reduction**



By life cycle stage **39%reduction**



■ Breakdown of environmental impact



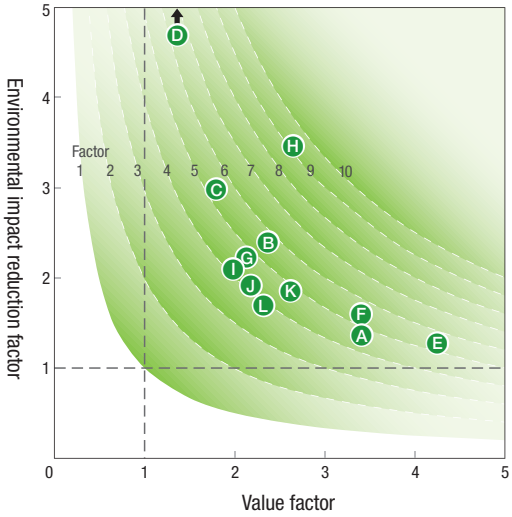
*1 A general tool used in product design.
*2 LIME is a life-cycle impact assessment method developed by the National Institute of Advanced Industrial Science and Technology (AIST) through LCA projects. The LIME chart presented above is the LIME summary chart provided by the AIST with some additions.
*3 Easy-to-use life cycle assessment tool developed by Toshiba

Excellent ECPs

Products Certified as Excellent ECPs in FY2009

ECPs with the industry's highest level of performance are certified as Excellent ECPs. Two products were certified as Excellent ECPs in FY2007, five in FY2008 and thirteen in FY2009. Not only home appliances and digital products but also products that have achieved remarkable progress in the social infrastructure field are certified as Excellent ECPs.

	FY2007 (2 products)	FY2008 (5 products)	FY2009 (13 products)
Home appliances	Notebook PC LED indoor lighting equipment	Notebook PC LED light bulb LCD TV Washing machine with dryer	Ⓐ Home air conditioner Ⓑ Refrigerator Ⓒ Washing machine with dryer Ⓓ LED light bulb Ⓔ Hard disk drive Ⓕ LCD TV
Industry products		X-ray CT system	Ⓖ LED indoor lighting equipment Ⓗ LED outdoor lighting equipment Ⓘ Office air conditioner Ⓙ Air-cooled chilling unit
Parts			Ⓚ Rechargeable battery Ⓛ Soft X-ray nano-focus tube



Home Appliance Products Certified as Excellent ECPs

Home Air Conditioner

The industry's highest level 1 of energy-saving performance; equipped with a cost-saving monitor that indicates electricity costs

Factor 4.35 = Value factor 3.41 × Environmental impact reduction factor 1.28

Daiseikai UDR/PDR series

RAS-402UDR

Benchmark product: RAS-406YDR (2000 model)

Key points of value improvement

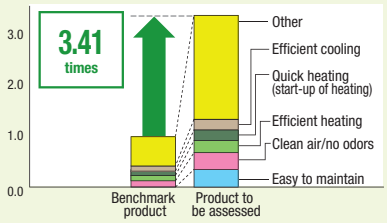
- Improve the cooling and heating capacity
- Improve comfort by airflow controls (spot airflow and wide airflow functions) and sterilize with an ion air purifier, cleaning and purifying functions
- Visualize electricity costs by a cost-saving monitor

Key points of improvement in environmental impact

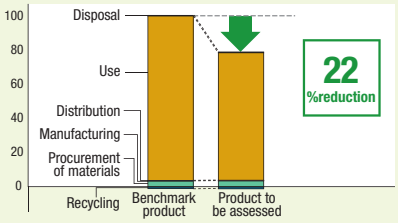
- Equipped with dual compressors that have the industry's highest level of performance,*1 with an APF*2 value of 6.0
- Use of recycled materials (see p. 36 for details)
- Polyvinyl chloride (PVC) replaced by a substitute material

Mitigation of climate change
Efficient use of resources
Management of chemicals

Value provided (benchmark product: 1.0)



Environmental impact (benchmark product: 100)



Refrigerator

The industry's highest 1 level of energy-saving performance; retains freshness with pico ions

Factor 5.68 = Value factor 2.37 × Environmental impact reduction factor 2.40

CR-B55F/50F/48F

GR-B50F

Benchmark product: Product model of ten years ago*3

Key points of value improvement

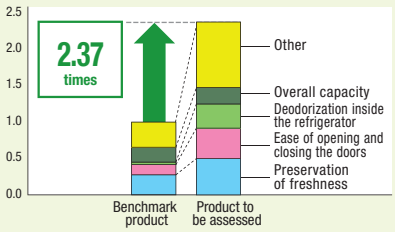
- Sterilization and deodorization with pico ions; capacity to preserve food increased two fold
- Improvement in the ease of use by changes in design, including the layout

Key points of improvement in environmental impact

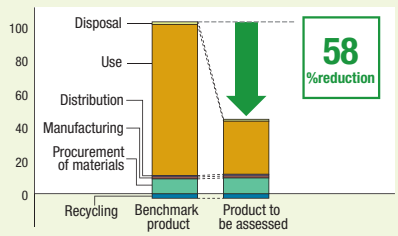
- The industry's lowest level of annual power consumption*1 (290 kWh/year)

Mitigation of climate change

Value provided (benchmark product: 1.0)



Environmental impact (benchmark product: 100)



*1 When sales began.
*2 Annual Performance Factor.
*3 Calculated based on the standard annual power consumption (750 to 840 kWh/year) of a refrigerator with freezer with a capacity of 401 to 450 L, a product of ten years ago (1999 model). The power consumption is not that of a specific refrigerator model but the standard annual power consumption of a refrigerator of ten years ago based on the independent standard of the Japan Electrical Manufacturers' Association.

Factor = **Value factor** × **Environmental impact reduction factor**

Washing Machine with Dryer

The industry's highest level of energy- and water-saving performance and sterilization and deodorization with pico ions

Factor 5.07 = Value factor 1.75 × Environmental impact reduction factor 2.90

Drum-type washing machine with dryer, ZABOON

TW-Z9000

Benchmark product: TW-F70 (2000 model)

Key points of value improvement

- Large washing and drying capacity
- Powerful washer and a high-speed spin dryer with the ACTIVE S-DD motor
- Sterilization and deodorization with pico ions

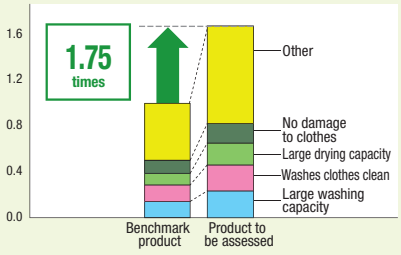
Key points of improvement in environmental impact

- Saves 760 Wh of energy and 56 L of water by heat-pump drying (when washing and drying clothes weighing 6 kg)

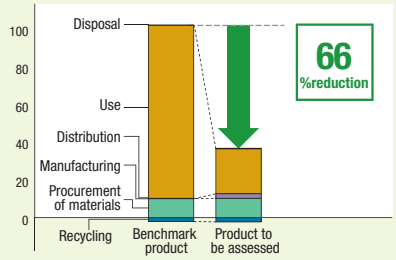
Mitigation of climate change

Efficient use of resources

Value provided (benchmark product: 1.0)



Environmental impact (benchmark product: 100)



LED Light Bulb

Reduces energy consumption to one-eighth compared with an incandescent light bulb and has a long rated life of 40,000 hours

Factor 10.7 = Value factor 1.38 × Environmental impact reduction factor 7.73

LED light bulb, E-CORE
Incandescent light bulb-type,
8.7 W/ 6.9 W/4.1 W

Winner of the Agency for Natural Resources and Energy Director-General's Award (Energy Conservation Grand Prize 2009 in Japan)

LEL-AW8N (daylight white)

Benchmark product: Incandescent light bulb LW100V72W (2000 model)

Key points of value improvement

- Shaped like an incandescent light bulb and easy to install
- Easy to replace

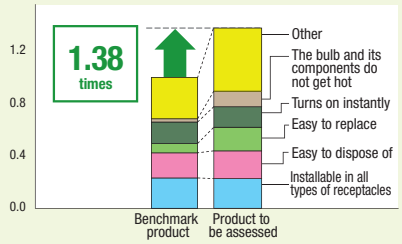
Key points of improvement in environmental impact

- Reduces energy consumption to about one-eighth that of an incandescent light bulb and lasts 40 times longer (40,000 hours)

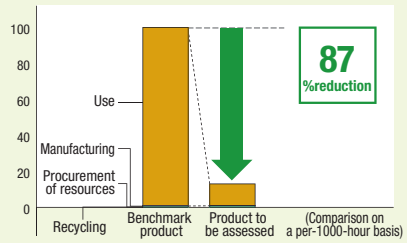
Mitigation of climate change

Efficient use of resources

Value provided (benchmark product: 1.0)



Environmental impact (benchmark product: 100)



Hard Disk Drive

The industry's highest level*1 of energy efficiency; a 2.5-inch disk with a 640-GB capacity

Factor 5.07 = Value factor 4.25 × Environmental impact reduction factor 1.19

2.5-inch HDD

MK6465GSX

Benchmark product: MK2016GAP (2000 model)

Key points of value improvement

- The industry's highest level of storage capacity*1 (640GB) for a 2.5-inch HDD (5,400 rpm; composed of 2 disks)

Key points of improvement in environmental impact

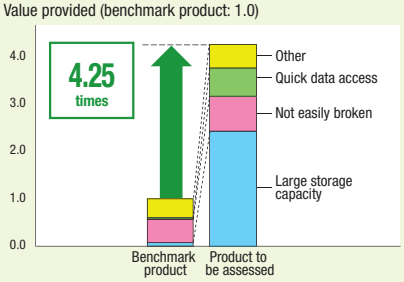
- The industry's highest level*2 of energy efficiency (0.00086 *3) with a newly developed LSI and high-density technology

Mitigation of climate change

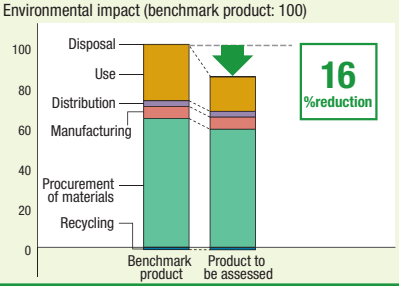
- Eliminated the use of halogen ahead of other companies

Management of chemicals

Value provided (benchmark product: 1.0)



Environmental impact (benchmark product: 100)



*1 When sales began.
*2 By category name "e" (an item specified by the Law Concerning the Rational Use of Energy; the rating depends on the diameter and number of disks). When sales began.
*3 Energy consumption efficiency is calculated based on power consumption divided by formatted capacity, as defined by Japanese law

Excellent ECPs

Industrial Products Certified as Excellent ECPs

LED Indoor Lighting Equipment

The industry's highest overall efficiency*1 with sensor controls and a continuous dimming control system

Factor 4.40 = Value factor 2.09 × Environmental impact reduction factor 2.11

LED base light E-CORE

LEDR-32401W-LD9

Benchmark product: Fluorescent lighting equipment FT-42326-125 (2000 model)

Key points of value improvement

- Sensor control, continuous dimming control and other mechanism used in response to the latest computerized technologies
- Easy to check and replace LED modules
- Easy-to-replace lamps

Key points of improvement in environmental impact

- The industry's highest overall efficiency*1 (84 lm/W)
- A long rated life of 40,000 hours
- No mercury used (mercury-free)

Mitigation of climate change / Efficient use of resources / Management of chemicals

LED Outdoor Lighting Equipment

The industry's highest efficiency*1 and a long life of 40,000 hours

Factor 8.96 = Value factor 2.65 × Environmental impact reduction factor 3.38

LED security light E-CORE

LEDK-70941W-LS8

Benchmark product: Mercury lighting equipment 10055HC (2000 model)

Key points of value improvement

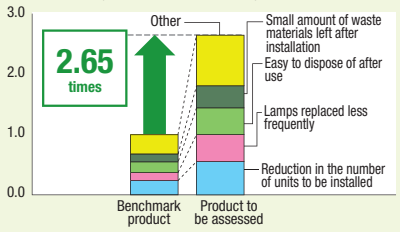
- Easy-to-replace lamps
- Installation interval of 35 m or longer (class B*2); 3 ranks lower than the benchmark product in terms of lighting costs

Key points of improvement in environmental impact

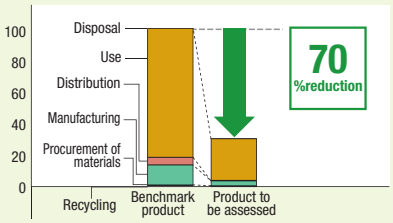
- The industry's highest efficiency*1 (74 lm/W)
- Requires less maintenance with a long rated life of 40,000 hours
- No mercury used

Mitigation of climate change / Efficient use of resources / Management of chemicals

Value provided (benchmark product: 1.0)



Environmental impact (benchmark product: 100)

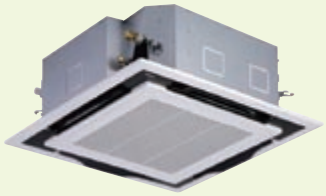


Office Air Conditioner

The industry's highest energy-saving performance*1 and increased cooling and heating capacity

Factor 4.24 = Value factor 2.05 × Environmental impact reduction factor 2.06

Super Power Eco Cube series



AIU-AP805H

Benchmark product: AIU-J806HG (1997 model)

Key points of value improvement

- Eliminates the unevenness in the room temperature with all-direction air flows
- Maintains comfort and energy-saving performance with automatic cleaning
- Easy to install with the monitoring function during a trial operation

Key points of improvement in environmental impact

- The industry's highest annual energy efficiency*1 (APF*3: 6.0)

Mitigation of climate change

Winner of the Ministry of Economy, Trade and Industry's Energy Conservation Grand Prize 2008 in Japan

Air-cooled Chilling Unit

The industry's highest energy-saving performance*1 and a 50% reduction in footprint owing to space-saving modular structure

Factor 4.00 = Value factor 2.18 × Environmental impact reduction factor 1.83

Super Flex Modular Chiller series

Winner of the Ministry of Economy, Trade and Industry's Energy Conservation Grand Prize 2006 in Japan

RUA-TBP

Benchmark product: TAG-C (2000 model)

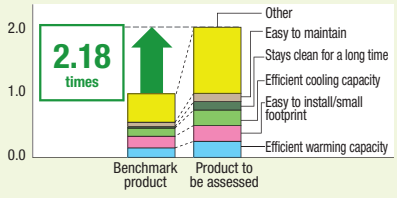
Key points of value improvement

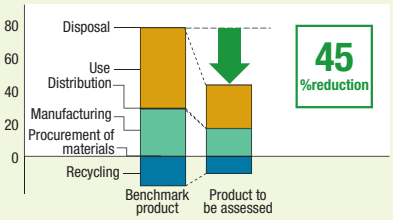
- A 50% reduction in footprint owing to air cooling and space-saving modular structure

Key points of improvement in environmental impact

- R410A HFC refrigerant used for a large-size chiller for the first time in the industry
- The industry's highest*1 integrated part load value*4 (IPLV:6.7)

Mitigation of climate change





*1 When sales began. *2 By the luminance standards of the Japan Security Systems Association. *3 Annual Performance Factor.
*4 Value obtained for cooling operation at 50 Hz by taking into consideration partial loading characteristics (based on ARI550/590-2003).

Factor = **Value factor** × **Environmental impact reduction factor**

Rechargeable Battery

A long life of 6,000 charge-discharge cycles; superb safety and rapid charging, with 90% of the capacity charged in 5 minutes

Factor 4.63*1 = Value factor 2.62 × Environmental impact reduction factor 1.77

SCiB™

SCiB™ Rechargeable Battery

Benchmark product: Lithium ion battery (2000 model)

Outstanding Award winner, 6th Eco-Products Awards

Key points of value improvement

- Rapid charging capacity with 90% of the capacity charged in as fast as 5 minutes
- Long life with minimal capacity loss even after 6,000 charge-discharge cycles*2
- Functions at cold temperatures as low as -30°C*2

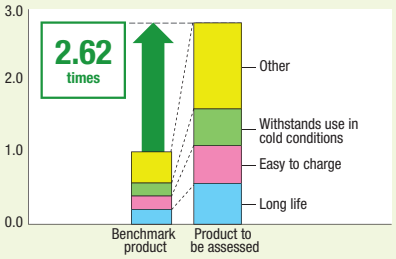
Key points of improvement in environmental impact

- Product life increased by 3 to 5 times compared to conventional lithium ion batteries
- Reduction in maintenance frequency and in the amount of waste materials

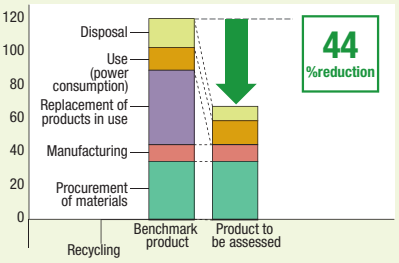
Mitigation of climate change

Efficient use of resources

Value provided (benchmark product: 1.0)



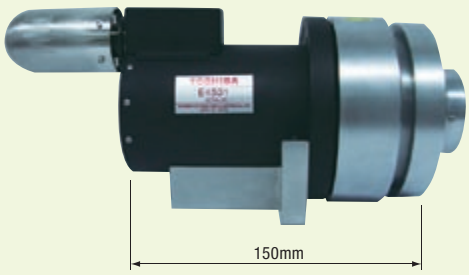
Environmental impact (benchmark product: 100)



Soft X-ray nano-focus tube

X-ray tube with a micro-focus function for nanometer scale observation

Factor 3.73 = Value factor 2.32 × Environmental impact reduction factor 1.61



E4501

Benchmark product: Industrial X-ray tube (2000 model)

Key points of value improvement

- A 0.2-μm nano-focus with a low voltage of 15 kV
- Makes it possible to observe organic micro-samples
- No need for a vacuum pump and easy to use and maintain

Key points of improvement in environmental impact

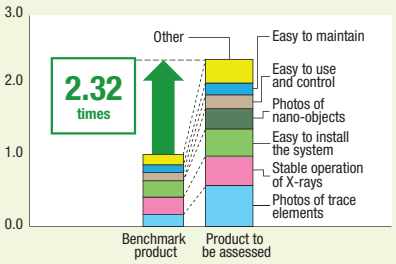
- Power consumption reduced to one half
- Product volume reduced to 2/7
- No grease used

Mitigation of climate change

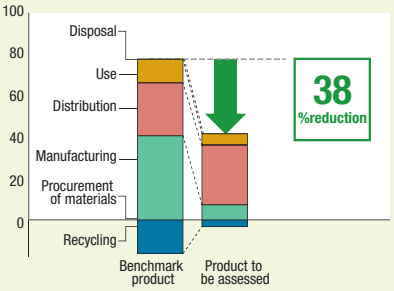
Efficient use of resources

Management of chemicals

Value provided (benchmark product: 1.0)



Environmental impact (benchmark product: 100)



*1 Calculated for lighting use.
*2 These values are obtained under the test conditions specified by Toshiba.

Greening by Technology

Energy and Environmental Technology

Toshiba Group will contribute to providing a stable supply of power and mitigating climate change through its low-carbon energy technologies.

Movements aimed at creating a low-carbon society are gaining momentum not only in fields related to conventional energy, such as nuclear and thermal power generation, and renewable energy, such as solar, hydroelectric and wind power generation, but also in fields related to electric power distribution, and all energy-related fields are swept up in the powerful tides of change. Against this background, Toshiba Group is developing a wide range of technologies for reducing global environmental impact in order to contribute to providing a stable supply of energy and mitigating climate change with an optimum combination of different energy sources. We also aim to create an environmentally advanced community supported by a social infrastructure network that provides a whole range of public services, including water supply and transportation.

Summary of activities in FY2009

Greening by Technology P43

- Promotion of the development of smart grids and smart communities in Japan and overseas through cooperation between the public and private sectors
- Promotion of measures to mitigate climate change in energy-related fields

Conventional Energy P45

Nuclear power generation
- Construction of four pressurized water reactors (AP1000™) started in China; a contract for two boiling water reactors (ABWR) received from the United States and the manufacture of equipment started
- Development of a small fast reactor 4S model (Super-Safe, Small and Simple) as a dispersed power source that does not use fossil fuels

Thermal power generation
- Completion of a 670-MVA high-efficiency power generator with the world's largest capacity using indirect hydrogen cooling
- Construction of a CCS pilot plant with a capacity to capture about 10 tons of CO_2 per day within a coal-fired thermal power plant in Japan; development of CCS technology and test experiments started

Renewable Energy P47

Photovoltaic power generation
- Contracts for the Taketoyo Mega Solar Power Plant and the Ukishima Solar Power Plant Facility (tentative name)
- Entry into the home photovoltaic power generation system business

Hydroelectric power generation
- Provision of high-performance, low-environmental-impact hydroelectric power generation systems around the world

Geothermal and solar thermal power generation
- Application of the most advanced technologies to improve the performance and reliability of steam turbines installed in existing power plants (geothermal power generation)
- Promotion of the development of high-performance turbines (solar thermal power generation)

Power Distribution Networks P49

Smart grids
- Establishment of an organizational framework for the smart grid business
- Participation in large-scale field projects on Miyakojima Island and in New Mexico, U.S.A.

Building energy management system (BEMS)
- Commercialization of a building energy management system, BUILDAC™-U, designed with improved ease of use and expandability in addition to the unique energy-saving control technology

Home energy management system (HEMS)
- Promotion of the development of home energy management systems with visualization functions to raise users' energy-saving awareness

SCiB™ Rechargeable Battery
- SCiB™ rechargeable batteries to be installed in EV-neo, electric motorcycle prototype

Fuel cells
- Promotion of the use of Ene-Farm, which provides the industry' s highest level of performance

Toward a Low-carbon Society

In response to a growing worldwide concern over climate change, movements aimed at spreading the use of renewable energy and electric vehicles are gaining momentum. Against this background, smart grids are attracting attention as next-generation power distribution networks that can achieve the optimum balance between the supply and demand of electricity by using information and communication technology (ICT). The market demand is expected to increase greatly as smart grids come into widespread use to meet the needs of various regions, including Europe, North America and Asia.

In order for Japanese companies to take an active part in the international and domestic development of smart communities i.e. social systems including smart grids and other infrastructures (water, gas, transportation, etc)—and to make technological contributions in response to these trends, there is a need to develop initiatives that cannot be implemented by individual companies alone, such as establishing new standards and creating opportunities to discuss issues between the public and private sectors. To this end, the Japan Smart Community Alliance was established in April 2010 as a government-industry joint council supported by the Ministry of Economy, Trade and Industry and the New Energy in Japan and Industrial Technology Development Organization (NEDO). A total of 287 companies from various related industries, including electricity, electronics and automobile industries, participate in this council and Norio Sasaki, President of Toshiba Corporation, was appointed as the first chairman of the council. Four working groups were organized to discuss the following issues: (1) international strategies, (2) establishment of global standards, (3) roadmaps and (4) smart houses. The council is currently developing activities aimed at spreading the use of smart grids and related services.

First General Meeting of the Japan Smart Community Alliance

Greening by Technology

In order to develop specific measures 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.

For example, we will enhance our nuclear power generation business as the most essential measure to mitigate climate change using conventional energy. Having been engaged in the construction of 112 nuclear power plants in ten countries around the world, Toshiba Group expects to win contracts for 39 more plants by 2015. Through these construction projects, we will contribute to reducing CO_2 emissions throughout the world. We will also use our technologies to replace old turbines by high-performance turbines designed to increase electric power output and will introduce laser technologies that can shorten the construction period. In order to strengthen our integrated manufacturing system through the expansion of the fuel and service businesses, we are working to enhance and expand our front-end supply chain ranging from the production of uranium to the molding and processing of nuclear fuel.

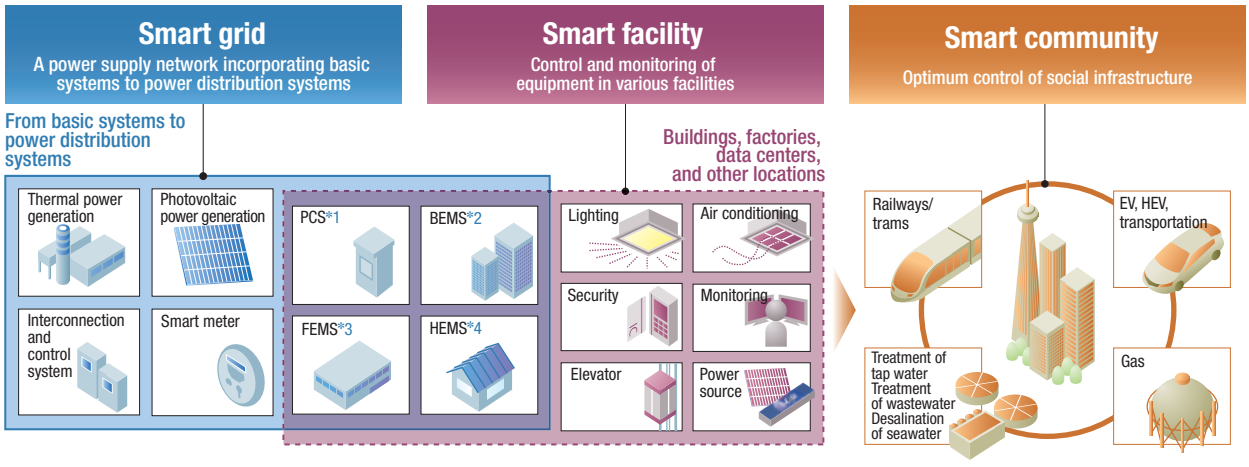
Meanwhile, considering the fact that we depend on fossil fuels for about 80% of our energy supplies, there is a need to implement more efficient measures in thermal power generation that emits a particularly large amount of CO_2. Toshiba Group is developing a wide range of technologies designed to improve the efficiency of thermal power generation along with technologies aimed at commercializing carbon dioxide capture and storage (CCS) systems.

In renewable energy fields, Toshiba Group launched an initiative to enhance its organizational structure for the photovoltaic power generation system business in January 2009 to meet the growing market needs for photovoltaic power generation. As a result, we are now providing mega solar systems that achieve high levels of efficiency and economic performance by using our know-how in total engineering that we have acquired through the development of large-scale plants. We also entered the home photovoltaic power generation system business in April 2009 and are working to develop and promote systems with our expertise in system technologies that we have acquired through the development of commercial and industrial photovoltaic power generation systems.

In electric power distribution fields, in October 2009 Toshiba Group established an organization dedicated to the development of a smart grid–a system expected to play a pivotal role in making effective use of renewable energy and providing a stable power supply–and is participating in large field experiment projects in Japan and overseas. In April 2010, Toshiba Group also established an organization dedicated to developing systems that monitor and control the energy flows of entire buildings, factories and homes for facilities and equipment that are used as parts of a smart grid. Through these initiatives, we provide solutions to create smart facilities that are designed to reduce CO_2 emissions to zero. We will further develop our smart grid technologies to create a "smart community," which is supported by a social infrastructure network–a future expansion of a smart grid–that provides a whole range of public services, including water supply, gas and transportation.

By providing these low-carbon energy technologies along with environmentally conscious products, including TVs and PCs (see pages 31-42 for details), we aim to achieve an annual reduction of 750 million tons of CO_2 emissions by 2020.

Vision of a Smart Community in the Future



- Participation in field experiments (New Mexico, US and Miyako Island, Japan)
- Supply of various systems and devices

- Various solutions offered by establishing a new division

- President Sasaki (Toshiba Corp.) appointed as the Chairman of the Smart Community Alliance, a joint conference between government and industry organized by METI and the New Energy and Industrial Technology Development Organization, for the worldwide development of smart communities

*1 Power Conditioning System
*2 Building Energy Management System
*3 Factory Energy Management System
*4 Home Energy Management System

Conventional Energy

Nuclear Power Generation

Countries around the world expect nuclear power generation to play an essential role in providing a stable supply of energy and mitigating climate change. Toshiba Group will contribute to reducing CO_2 emissions through the promotion of safe and secure nuclear power generation.

Contributing to a Stable Energy Supply and the Mitigation of Climate Change

The global primary energy demand is predicted to increase to about 1.4 times the current level by 2030.*1 At present, we depend on fossil fuels for about 80% of our energy supplies. Meanwhile, the use of fossil fuels presents serious problems, including climate change and resource depletion, making it more and more difficult to depend on these sources for our energy supplies. Although solar power and wind power are expected as sources of clean energy, they are unlikely to become conventional energy sources because of their economic performance and supply stability.

Nuclear power generation is capable of producing a large amount of energy without emitting CO_2 during operation. While it is estimated that fossil fuels will only be available for about 100 more years, uranium, which is a reprocessable nuclear fuel, is estimated to be available for use as energy for as long as 3,000 years.*2 By building a 1.35 GW nuclear power plant instead of a conventional coal-fired thermal power plant and by operating the plant at 80% of capacity, we will be able to achieve an annual reduction of as much as 9.05 million tons of CO_2.*3

Nuclear power generation is highly evaluated by the IEA as a technology effective in reducing CO_2 emissions. The IEA estimates that in order to stabilize the CO_2 concentration in the atmosphere at the level of 450 ppm, there is a need to build approximately 1,280 nuclear power plants with a gigawatt capacity by 2050.*4 The Japanese government has also agreed on a basic energy plan aimed at constructing 14 or more new nuclear power plants and raising the operation rate of nuclear power plants to the same level (90%) as in other countries by 2030.

As a Leading Company in Nuclear Power Generation

Toshiba Group has been engaged in the construction of 112 nuclear power plants in ten countries around the world, thereby contributing to reducing approximately 700 million tons of CO_2 emissions annually.*5 We have also concluded a contract in China for building four advanced pressurized water reactors (AP1000™) developed by Westinghouse and started the construction. In the United States, we concluded a contract for building two boiling water reactors (ABWR) and started the manufacturing of equipment. In Japan, we are participating in the construction of Electric Power Development Co., Ltd.'s Ohma Nuclear Power Plant. We expect to win contracts for 39 nuclear reactors, including the contracts already concluded, by 2015 and will continue to provide nuclear power plants that do not emit CO_2 during operation to countries around the world.

In order to improve the operation rate of power plants, we replace old turbines with high-performance turbines to increase power output as well as providing maintenance services using laser technology to shorten the construction period, and through these services we contribute to a further reduction in CO_2 emissions.

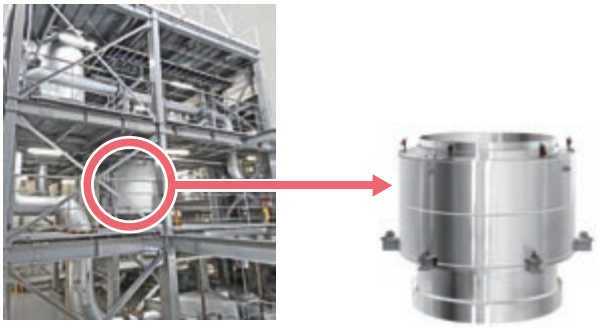
In addition, we are working to enhance and expand our front-end supply chain from uranium mining to fuel fabrication in order to provide nuclear fuels required for the stable operation of nuclear power plants.

Construction of the Sanmen Nuclear Power Station in Zhejiang Province, China

Initiatives for the Future

In order to recycle limited uranium resources, Toshiba Group is developing technologies for spent fuel reprocessing and nuclear waste treatment and disposal as well as fast reactor technologies for the future. We are using one of the largest private sodium loop facilities in Japan owned by Toshiba in order to develop a small, fast reactor 4S (Super-Safe, Small and Simple) as a dispersed power source that does not require fossil fuels. Since equipment for the 4S, such as electromagnetic pumps, can be used for other sodium-cooled fast reactors, we have begun reviewing plans for technological cooperation for the development of the Traveling Wave Reactor (TWR) proposed by TerraPower.

Based on our vision for "planet Earth 1,000 years from now", we will contribute to protecting the global environment and saving energy by providing services required for the construction and maintenance of nuclear power plants, the supply and reprocessing of nuclear fuels, and nuclear power generation with fast reactors.



Facility for the research and development of fast reactors (sodium loop facility)

Real-scale electromagnetic pump

*1 Source: World Energy Outlook 2009
*2 Source: Graphical Flip-chart of Nuclear & Energy Related Topics 2010, Japan Atomic Energy Relations Organization
*3 Calculated based on a comparison of CO_2 emissions from coal-fired thermal power generation and from nuclear power generation. Source: Graphical Flip-chart of Nuclear & Energy Related Topics 2010, Japan Atomic Energy Relations Organization
*4 Calculated from the IEA's Energy Technology Perspective 2008
*5 The total power generation capacity of the 112 power plants whose nuclear reactors are maintained by Toshiba Group as the major contractor is 110 GW (based on a survey conducted by Toshiba in April 2008). The reduction in CO_2 emissions is calculated assuming that the annual reduction of CO_2 emissions per 1.35-million-kW nuclear power plant is 9.05 million tons.

Thermal Power Generation

In order to make effective use of fossil fuels and to reduce CO_2 emissions, Toshiba Group is working to improve the efficiency of thermal power generation, while at the same time developing various technologies designed to achieve zero-emission thermal power generation.

Effective Use of Fossil Fuels and Reduction in CO_2 Emissions by Improving Performance

At present, thermal power generation accounts for approximately 70% of the total amount of electricity produced around the world. However, thermal power generation, which uses fossil fuels, causes more CO_2 emissions per unit power produced than other power generation methods. In order to reduce CO_2 emissions from thermal power generation, Toshiba Group is developing next-generation thermal power technologies aimed at improving plant efficiency and commercializing carbon capture and storage (CCS) systems.

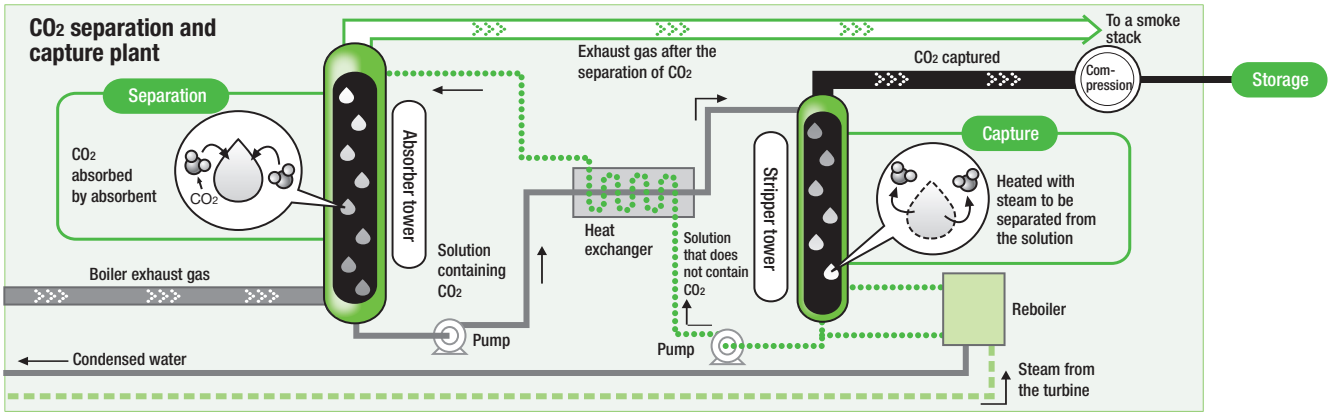
There are two methods for improving the efficiency of thermal power generation: the method that raises the temperature of the steam or gas used to rotate turbines and the method that raises the efficiency of equipment, including turbines and power generators. Toshiba Group is working to commercialize an Advanced Ultra-SuperCritical (A-USC) steam turbine system far more efficient than previous models, which is designed to increase steam temperature from 600°C to above the 700°C mark, as well as developing technologies designed to improve the efficiency of turbines and power generators. In order to raise the efficiency of power generators, Toshiba Group completed a 670MVA high-efficiency generator, which has the world's largest capacity as an indirectly hydrogen-cooled turbine-driven generator, and won the 2009 Japan Machinery Federation Chairman's Award for Outstanding Energy Equipment.

Accelerating the Development of Carbon Dioxide Separation and Capture Technology

Toshiba Group is working to commercialize carbon dioxide capture and storage (CCS) technology designed to separate and capture carbon dioxide (CO_2) emitted from thermal power plants and other such facilities and then store it underground. The absorbent used to capture CO_2, after having selectively captured CO_2 in an absorber tower, is sent to a stripper tower, where it is heated by steam and other external energy and releases CO_2. By providing the absorbent that has released CO_2 to the absorber tower, we can continuously separate and capture CO_2 from exhaust gases. Since regeneration energy required to heat the absorbent has considerable effects on the performance and environmental characteristics of power plants, Toshiba Group is continuing its development to commercialize an absorbent that achieves high performance with as little energy as possible. The characteristic of a high-performance absorbent is that it absorbs a large amount of CO_2 and absorbs and releases it at a fast speed using a small amount of energy for the separation response. We are conducting basic research to develop an absorbent that satisfies these contradictory requirements. At the same time, we are working to improve the performance of power plants with the optimal integration of our CO_2 separation and capture systems and power generation systems.Toshiba Group has constructed a CCS pilot plant with the capacity to capture about 10 tons of CO_2 per day within a coal-fired thermal power plant located in Japan in order to develop the CO_2 separation and capture technology and conduct test experiments. The principal purposes of these experiments are as follows: (1) to demonstrate the performance of our CCS system by using boiler exhaust gases emitted from a coal-fired thermal power plant; (2) to perform the test experiments required to design a system for real-scale power plants in the future, including measuring the effects of substances and degraded materials contained in exhaust gases generated by the thermal power plant on our system; and (3) to acquire technical know-how regarding the integration of our system with other power generation system machinery, including turbines. The use of CCS technology in conjunction with A-USC systems will open up the possibility of eliminating most of the CO_2 emissions generated from thermal power plants while minimizing the effects on power generation efficiency.

CCS pilot plant (within the Sigma Power Ariake Mikawa Power Plant in Omuta City, Fukuoka)

We will step up our efforts to develop technologies required for next-generation thermal power facilities in order to achieve zero-emission thermal power generation.



Renewable Energy

Photovoltaic Power Generation

Toshiba Group will contribute to reducing CO_2 emissions by providing photovoltaic power generation systems that achieve high levels of efficiency and economic performance to a wide range of facilities, including power plants, factories and homes.

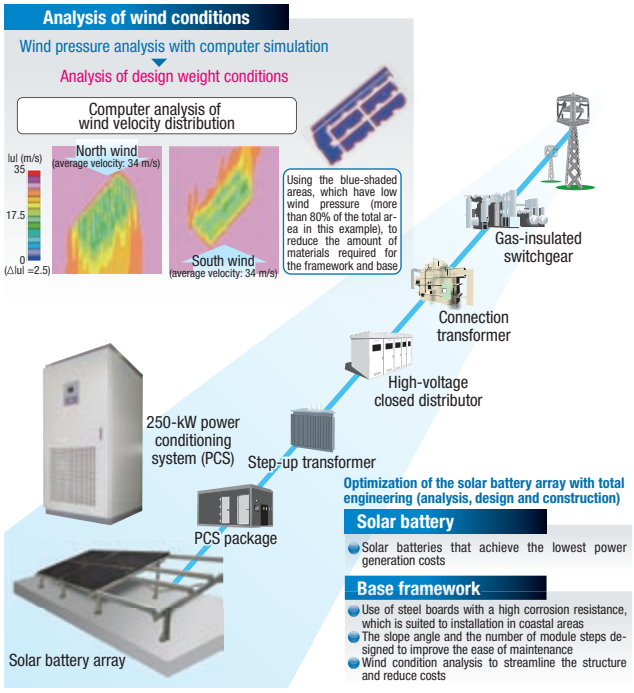
Mega Solar System Made Possible by Total Engineering

As more and more countries across the world show an interest in climate change, photovoltaic power generation, which uses inexhaustible solar energy and produces electricity without emitting CO_2, attracts more attention as an efficient means of mitigating climate change. Plans to develop large-scale commercial and industrial systems for photovoltaic power generation have been announced both in Japan and overseas, and the size of the market for photovoltaic power generation is expected to reach the level of 2.2 trillion yen in FY2015 and continue to increase in the future.

In January 2009, Toshiba Group established a headquarters for the photovoltaic power generation system business in order to enhance its organizational structure. By using its comprehensive engineering skills acquired through the development of large-scale plants, Toshiba Group offers a full range of services, from installing solar batteries to establishing connection to power supply networks, by total engineering that includes analysis, design and construction in order to provide mega solar systems that achieve the highest levels of efficiency and economic performance.

A photovoltaic power generation system converts sunlight into AC or DC electricity. Therefore, it is of crucial importance to create an efficient system designed to minimize conversion loss. There is also a need to lower the power generation costs that are higher compared with methods that use conventional energy, such as nuclear and thermal power, and to this end, we are working to reduce system construction costs as much as possible. In order to improve efficiency, Toshiba Group has succeeded in commercializing a compact power conditioning system (PCS) that can achieve the industry's highest level of efficiency of 97.5% (rated as having an output capacity of 250 kW, requiring an area of only 1 m^2 and weighing 1,600 kg). We are striving to develop and commercialize high-efficiency power generation systems by using solar modules and related systems along with system building skills in accordance with purposes and usage environments. We also design an optimal layout of a large number of solar battery modules by analyzing various factors, including wind conditions during the installation of modules, the design of the base framework for solar panels, construction plans, transportation systems and construction methods, in order to minimize the construction costs of mega solar systems. In August 2009, Toshiba Corp. concluded contracts for the construction of photovoltaic power generation systems for Chubu Electric Power Company's Taketoyo Mega Solar Power Plant and Tokyo Electric Power Company's Ukishima Solar Power Plant Facility (tentative name). The Taketoyo Mega Solar Power Plant, a plant with an output capacity of 7.5 MW, will be constructed in the coastal area of Taketoyo-cho, Aichi Prefecture, and the Ukishima Solar Power Plant Facility, also a plant with a capacity of approximately 7.5 MW, in the coastal area of Kawasaki City, Kanagawa Prefecture. Both these plants are scheduled to start their operation in FY2011.

Constructing a system that provides a stable and efficient supply of power, from installing solar batteries through to connecting the system to a power supply network

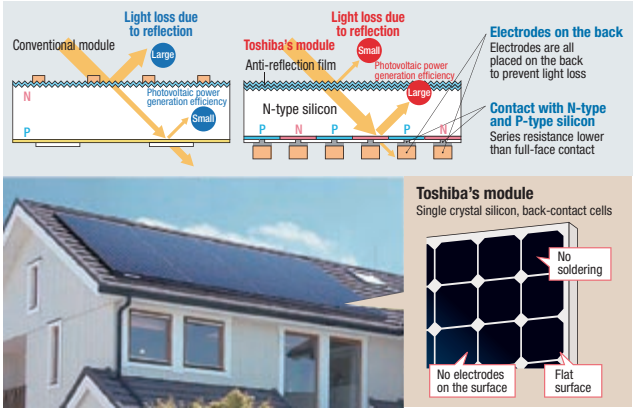


(Artist's rendition) Chubu Electric Power Company's Taketoyo Mega Solar Power Plant

(Artist's rendition) Tokyo Electric Power Company's Ukishima Solar Power Plant Facility (tentative name)

High Efficiency Solar Panels for Homes

Toshiba Corp. entered the home photovoltaic power generation system business in April 2010. Toshiba's solar panels increase the module conversion efficiency to 16.9% by taking in sunlight efficiently and by maximizing power generation output. While conventional solar panels have electrodes on the cell surface, Toshiba adopted a back-contact method and placed all electrodes on the back of a panel so as to reduce the loss of light caused by reflection and to improve power generation efficiency. Toshiba's solar panels, which do not have electrodes on their surface, are also designed to be slim and have a sophisticated appearance.



Hydroelectric Power Generation

Hydroelectric power generation, which produces electricity without CO_2 emissions by using the gravitational force of falling water, provides clean and renewable energy, the effective utilization of which is being reviewed by countries around the world.

Provide a Stable Supply of Clean Energy

Among power generation systems that use clean and renewable energy without CO_2 emissions, hydroelectric power generation is the most efficient in providing a stable power supply at low power generation costs. Since 1894, when we delivered a power generator to the first commercial hydroelectric power plant in Japan, Toshiba Group has delivered more than 2,000 hydraulic turbines and generators respectively, with a capacity of 52 GW or more to over 40 countries around the world.

Global Business Expansion

Hydroelectric power generation requires that equipment be designed in accordance with different geological conditions. Toshiba Group is working to develop a wide range of technologies, including developing various types of machines, improving power generation efficiency and output capacity, and increasing product life, in order to provide countries worldwide with hydroelectric power generation systems that can achieve high performance with low environmental impact. In China, where the world's largest number of hydroelectric power generation plants are being constructed, high-performance splitter runner turbines and large diameter bulb turbines have been put into commercial operation, and Toshiba Group is taking an active part in constructing these new facilities as well as renovating existing ones both in Japan and overseas.

Large-diameter bulb water turbine runner for China

Micro-hydroelectric Power Generation Systems

Unlike large-scale hydroelectric power generation, micro-hydroelectric power generation makes effective use of small water resources to generate electricity. Toshiba Group has developed and commercialized Hydro-eKIDS™, a micro-hydroelectric power generation system designed for customers that are using water for purposes other than power generation. Unlike conventional hydroelectric power generation systems, Hydro-eKIDS™ does not require large-scale civil engineering or construction and can be used anywhere there are water sources available, including water supply and disposal systems, irrigation canals, wastewater from factories and water discharges from rivers, thereby contributing to reducing greenhouse gas emissions and saving energy.

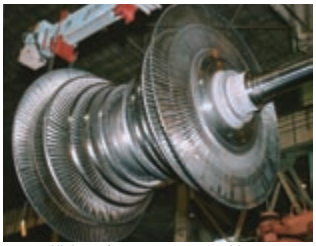
Mibugawa No. 4 Plant, Mibugawa Electric Power Co., Inc.

Geothermal and Solar Thermal Power Generation

Since delivering geothermal turbines and generators to its customer for the first time in Japan, Toshiba Group has continued to improve the performance of facilities, thus contributing to reducing CO_2 emissions through the promotion of geothermal power generation.

Contributing to Reducing CO_2 Emissions by the Geothermal Power Generation Facilities

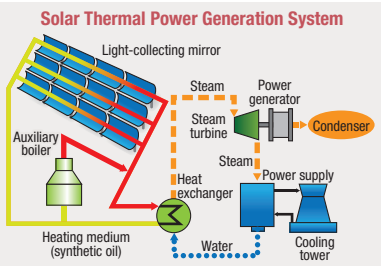
Geothermal power generation systems, which produce electricity by extracting hot water and steam from underground and by rotating steam turbines using the energy of the extracted hot water and steam, cause a very low level of CO_2 emissions—about 1.5% of CO_2 emissions generated by coal-fired thermal power generation (comparison on a life cycle basis). Toshiba Group has delivered geothermal power generation facilities to various countries around the world, including the United States, the Philippines, Iceland and Mexico, and is currently providing facilities equivalent to about 25% of the total amount of electricity produced by geothermal power generation throughout the world.
Toshiba Group is promoting geothermal power generation through the construction of new power plants and is also retrofitting steam turbines in existing power plants by using the most advanced technologies designed to improve their performance and reliability, thereby contributing to reducing CO_2 emissions.
Toshiba Group delivered highperformance steam turbine rotors for the retrofit of systems No.5 to 8 of the Geysers Power Plant in the United States, which has the world's largest geothermal power generation capacity, and succeeded in improving the steam consumption efficiency by approximately 10%.



High-performance steam turbine rotor for the Geysers Power Plant, U.S.A.

Power Generation Systems that Make Effective Use of Solar Heat

Solar thermal power generation is one of the ways to use solar energy.
A solar thermal power generation system collects solar heat with mirrors to generate steam and produces electricity by using steam turbines. Since it causes almost no CO_2 emissions during operation, using solar thermal power generation in combination with Toshiba's high-efficiency steam turbines, and with increases in scale and efficiency, this renewable energy source will contribute to reducing CO_2 emissions. To that end, it is necessary to improve the efficiency of steam turbines for solar thermal power generation using low-temperature steam. We are working to develop high-performance turbines by using its technologies acquired through the development of turbines for nuclear and geothermal power generation and are reviewing methods for improving the economic performance of solar thermal power generation systems.



Power Distribution Networks

A smart grid is a next-generation energy supply system that integrates the electric power infrastructure and the communica-
storage devices, such as the SCiB™ rechargeable battery, to homes, offices and factories through a network of electricity and
response to these demands. Smart grids are expected to play a vital role in making effective use of renewable energy and pro-
tions technology. Toshiba Group will contribute to the creation of a low-carbon society through its efforts to develop a smart

μEMS : Grid monitoring/ control device

The amount of power generated by natural energy, such as solar and wind energy, varies greatly depending on weather conditions. Natural energy power generation therefore involves the risk of an imbalance between the supply and demand of electricity. In order to provide power for the stable operation of a power supply system, Toshiba is working to develop a grid monitoring/control device, the Micro Energy Management System (μEMS). It is a core technology that serves as the brain of a smart grid by monitoring and controlling the local supply and demand of electricity. The μEMS is a system for controlling electricity supply and demand, which is designed to absorb variations in power consumption within a grid and to minimize the effects of these variations on external systems. The system performs three functions: formulating comprehensive plans for energy supply and demand; controlling the allocation of economic load; and controlling load frequencies in real time.

■ Control process

●Formulating a comprehensive plan for energy supply and demand

The system makes a plan for the daily operation of individual power generation devices based on past data on power demand and data on the amount of power generated by natural energy (❶, ❷ and ❸ in the figure below).

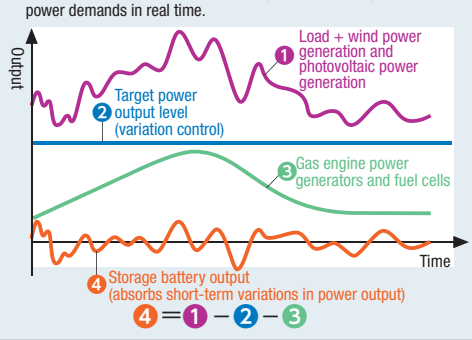
●Controlling the allocation of economic load

If there is a large gap between the planned output and actual output of natural energy power generation, or between the planned demand and actual demand for electricity, corrections are allocated to power generation devices to make adjustments in power output (❸ in the figure below).

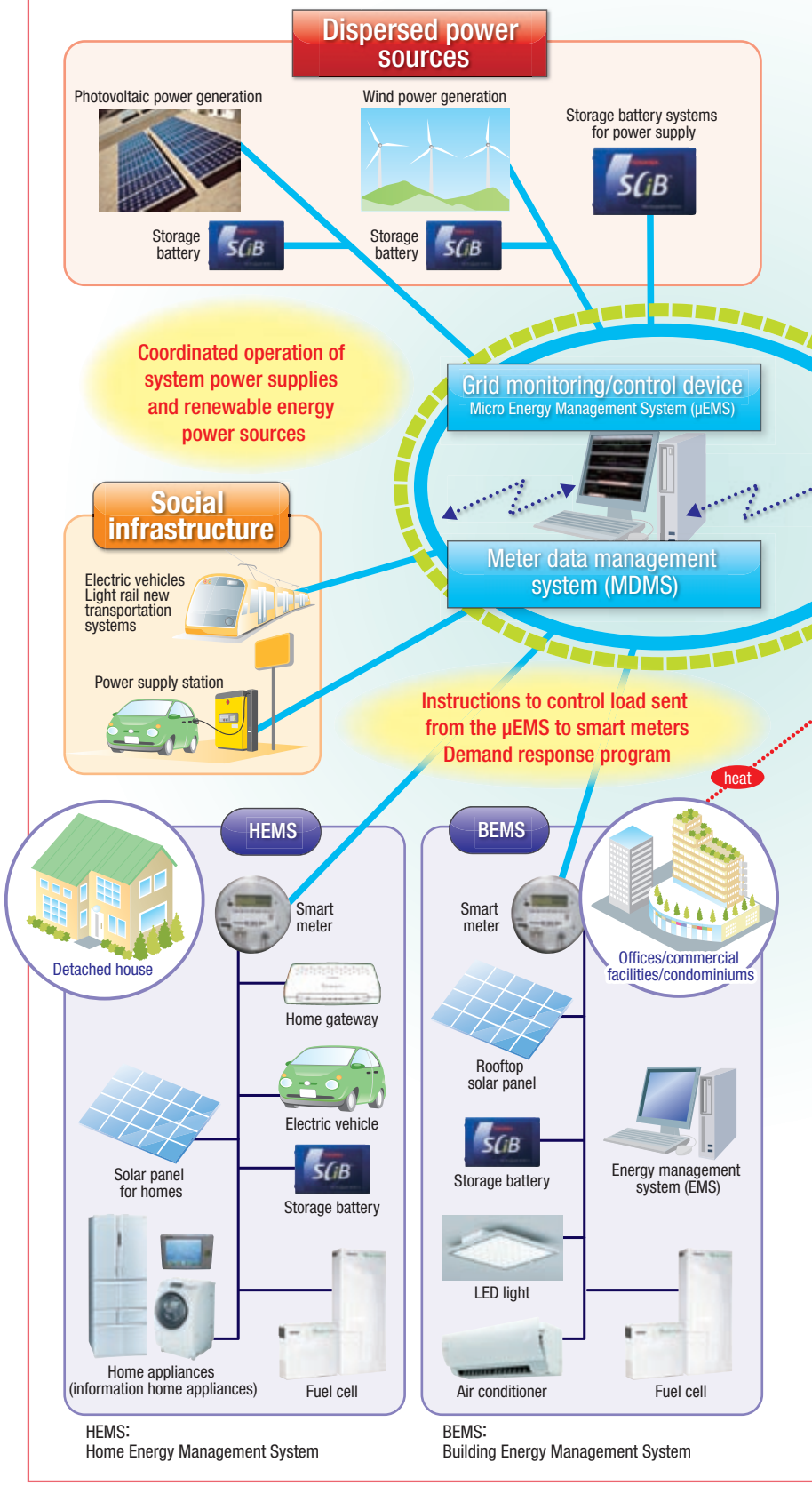
●Controlling load frequencies in real time

The system controls output in accordance with short-term variations in the output of natural energy power generation mainly by using storage batteries (❹ in the figure below) and maintains the balance between the supply and demand of electricity at a constant level.

The system automatically controls the balance between the supply and demand of electricity by analyzing and forecasting consumers' power demands in real time.

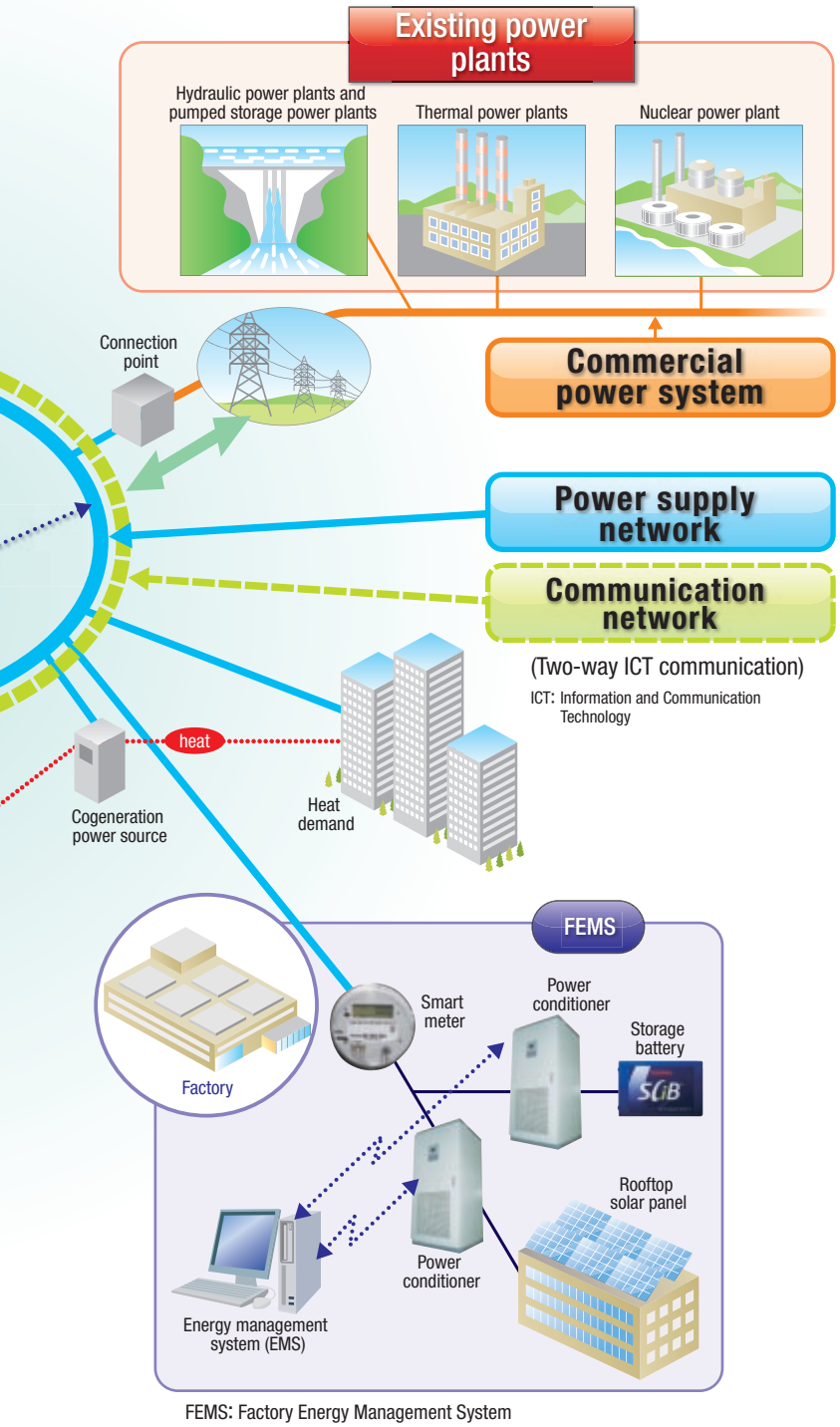


Next-generation Power Supply



tion infrastructure. It connects a number of dispersed power sources, such as solar power facilities and fuel cells, and power communication and analyzes and forecasts consumers' power demands in real time in order to provide power supplies in viding a stable supply of power by controlling the balance between the supply and demand of electricity using telecommunica-grid, the next-generation power supply network.

Network Smart Grid



FEMS: Factory Energy Management System

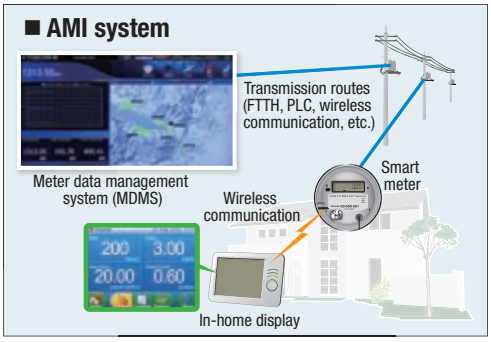
SCiB™Rechargeable Battery

SCiB™ is a rechargeable battery with superb safety. SCiB™ also has excellent characteristics such as, long life and rapid charging capability. SCiB™ has a charge retention rate of over 90% even after having been discharged and recharged more than 6,000 times and has excellent service life characteristics that can help reduce waste.

AMI : Advanced metering infrastructure system

The AMI system performs various functions, such as transmitting measurement data obtained from smart meters that are connected to transmission routes to a meter data management system (MDMS) or showing power consumption and other figures on in-home displays.

These functions make it possible to visualize amounts of power consumption by two-way communication technology and to set electricity rates flexibly. The system is expected to play an important role in raising energy saving awareness among the public and making up for part of daytime power consumption by power generated during night hours.



●Smart meter

A smart meter is a high-performance system that collects data on power consumption and transmits it to power supply companies. It collects real-time data on the amounts of power consumed in buildings and homes and transmits the data to power supply companies through networks. The collected data is used to provide consumers with real-time information on electricity charges. A smart meter is also capable of receiving instructions from grid monitoring/control devices to control electric power load (demand response program) and providing consumers with information for the efficient operation of power-consuming devices, thereby enabling them to reduce power consumption.

●Meter data management system (MDMS)

The MDMS is a system that collects and analyzes information transmitted from smart meters in order to impose electric charges or to provide consumers with information for the efficient use of energy. Real-time meter data on individual consumers provides power supply companies with accurate information on the use of electricity. In case of a natural disaster or an accident, the MDMS makes it possible to identify areas where power supply is suspended and to repair damage efficiently.

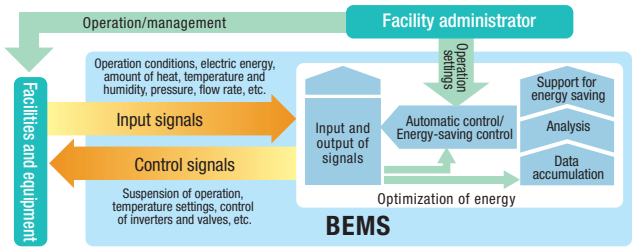
Power Distribution Networks

Building Energy Management System (BEMS)

Providing functions designed to save energy for buildings

In order to save energy by managing the energy consumption, operation efficiency and indoor environments of building facilities, Toshiba Group is working to develop a BEMS that collects data efficiently and stores it in a data format that can be used in conjunction with other systems* and general-purpose software. The BUILDAC™-U, which was commercialized last year, is a reliable system that closely integrates advanced, diversified facilities for centralized monitoring and discrete control. It makes it possible to change monitor screen settings and the number of management items online in accordance with changes in facilities and their use required to save building energy and provides a means of adjusting to changes with minimal effects on building operations. The system has various control functions designed to save energy while maintaining comfort, such as the neuro-PMV™ control, and also meets the need for remote operations, including the remote control and maintenance of facilities using Internet technologies.

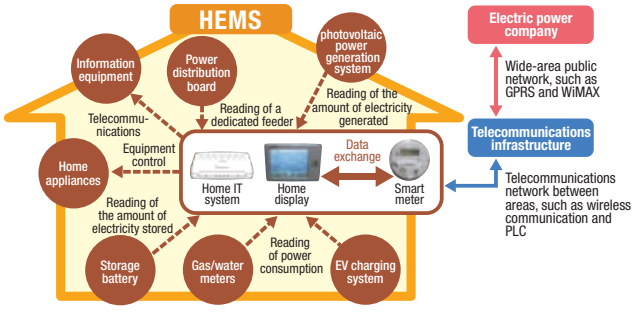
* BACnet (ISO standard) and LonWorks (proven track records with many air conditioner manufacturers) used as standard network communication systems.



Home Energy Management System (HEMS)

Contributing to home appliance energy control with advanced technologies

A HEMS is a system that connects storage batteries that store energy produced by photovoltaic power generation and fuel cells, a number of home appliances and water heating equipment through a network in order to automatically maintain these appliances and equipment in optimal operating conditions and to measure and display energy consumption and the operations of equipment in homes by using IT technologies. Toshiba Group has commercialized a home IT system designed to visualize the amount of electricity generated and consumed along with CO_2 emissions and to remotely control home appliances from the outside via mobile phone. We will actively promote the development of various systems, such as smart meters and home display systems, that provide more advanced HEMS functions associated with smart grids in order to create smart communities in the future.



SCiB™ rechargeable battery

SCiB™, designed to ensure safety and a long life

The SCiB™ rechargeable battery is very safe to use and can be quickly charged and discharged. Since it also has a long life, it reduces the amount of batteries disposed of and makes efficient use of resources, thereby contributing to the development of a recycle-based society. Because of these characteristics, the SCiB™ rechargeable battery is attracting attention as a storage battery that can be used for a variety of purposes, including providing electricity for vehicles and home appliances. It is expected to play the most important role as a storage battery for smart grids in the near future and to contribute to the creation of a low-carbon society.

●Major characteristics

Safety	Low risk of explosion or ignition even if it is deformed by external force
Long life	Maintains more than 90% of its capacity after 6,000 discharge-recharge cycles
High output capacity	Has an input-output density as high as a capacitor
Quick charge	Can be charged in about five minutes
Low-temperature operation	Usable in cold climates (-30)
Large effective capacity	Since it can be charged and discharged with large output on a wide range of states of charge (SOCs), it provides a large amount of usable energy

●The battery will be installed on electric motorcycles.

SCiB™ rechargeable batteries to be installed in EV-neo electric motorcycle prototype .

Photo provided by: Honda Motor Co., Ltd.

Fuel Cells

Residential fuel cells (ENE-FARM) that provide the industry's highest level of performance

Residential fuel cells are systems that produce electricity through electrochemical reactions. They provide energy generated at the site where they are used, meaning there is no power transmission loss. Since the heat generated by chemical reactions can also be used to provide hot water, fuel cells are beginning to be widely used as co-generation systems for homes that contribute to reducing CO_2 emissions.

Toshiba Group has been engaged in the development of phosphoric acid fuel cells for many years. We have been working on the development of 1-kW class residential fuel cells since 2000 based on the experience and know-how accumulated over the past years. These are the only fuel cells that can process both natural gas and LPG and, weighing only 104 kg and requiring a footprint of 2.5 m^2, are lightweight and compact. They are also designed to have a low noise level and achieved a level not exceeding 40 dB, which is equivalent to the level of a library. The ENE-FARM model requires regular maintenance only once every two years, for about 30 minutes each time. Thus, we have succeeded in developing a product that leads the industry in durability and cost. We started the sale of the ENE-FARM in FY2009.

Residential fuel cell (ENE-FARM), TM1-Z

TOPICS Participation in Smart Grid Verification Tests

Many countries around the world are reviewing the designs of smart grids that meet their respective needs. We will provide examples of verification test projects that Toshiba Group is participating in.

Verification Test on Miyako Island, Japan

Contract with the Okinawa Electric Power Company for a microgrid system for remote islands

Toshiba Group has concluded a contract for the bulk delivery of facilities required for the verification test of a microgrid system for remote islands, which will be conducted on Miyako Island by the Okinawa Electric Power Company starting in the fall of 2010.

This verification test is conducted to analyze how Miyako Island's independent electricity network will be affected if renewable energy like solar energy, which is highly variable in output, is introduced in large amounts and connected to the network and to examine measures to stabilize the electricity network. In addition to our power conditioners, which have the world's highest level of AC-DC conversion efficiency (97.5%), a next-generation monitoring and control system equipped with the μEMS that serves to maintain the balance between electricity supply and demand is used for the contracted project. Our SCiB™ rechargeable batteries are also used along with other batteries.

Miyako Island Microgrid Verification Test Facility Data provided by: The Okinawa Electric Power Co., Inc.

Verification Test in New Mexico State, U.S.A

Toshiba Group chosen as a participant in Japan-U.S. joint projects

Toshiba Group is also participating in verification test projects overseas. We were chosen as a participant in verification test projects jointly undertaken by the New Energy and Industrial Technology Development Organization (NEDO) and the New Mexico State government, U.S.A.

Thirty companies including Toshiba Corp. that were commissioned to conduct project surveys carried out preliminary surveys from January 2010. Based on the evaluation of these surveys, proposals of 21 companies were accepted for verification tests, and 19 companies were finally chosen as project participants. Of the demonstration projects conducted in five places in New Mexico State, Toshiba Group was chosen as a participant in Japan-U.S. joint projects undertaken in Los Alamos County and in Albuquerque City.

Entrance to the town of Los Alamos

Water and Environmental Systems

TOPICS Toshiba Group contributes to providing

Water is the source of life that has supported the development of various civilizations. However, demand for water is increasing rapidly around the world as a result of an increase in global population, expansion of economies and urbanization. Just like energy and resources, the need for water creates pressing problems that require global solutions.
Through its technologies, systems and products that support a wide range of activities, including not only the production and distribution of water but also its utilization and recycling, Toshiba Group will contribute to the development of sustainable social infrastructure designed to provide a secure supply of safe water and to protect the environment.

Solution for the wide-area management of water supply and wastewater systems

At present, water supply and wastewater systems are being developed over wide areas as a result of municipal and business mergers, thereby creating a need to integrate and share a number of facilities and to develop systems that make it possible to operate individual plants with low environmental impact and using energy-saving measures.
Toshiba has developed a system for the monitoring and control of water supply and wastewater (TOSWACS™ V) designed to perform detailed, real-time remote monitoring of a number of facilities located far away in order to reduce the workload of monitoring. We provide various other solutions that contribute to a stable water supply and environmental conservation for the future, such as the technology for pipeline network analysis and water distribution control simulation, which makes it possible to formulate a plan for the optimal energy-saving operation of a number of different water supply pumps.


Monitoring/control system

UV radiation system for water purification (TOSAQLEAR™)

The principal method of protecting against chlorine-resistant pathogenic bacteria*1 living underground or underwater has been to physically remove them by filtration. However, since bacteria filtration requires expensive facilities that need frequent maintenance, many local governments are still not using this method. With a view to overcoming these difficulties, Toshiba promoted the development of a UV radiation technology to provide a low-cost water treatment system. The system, which does not use chemicals, has low environmental impact and is easy to maintain compared with filtration systems. We finally succeeded in commercializing a UV radiation system TOSAQLEAR™, which uses a medium-pressure UV lamp, has high radiation efficiency and is designed to save space.*2
As a result of the recent revision of a ministerial ordinance,*3 many local communities that depend on groundwater for water supply will need our technology in the future. By using our water purification technology to provide a secure supply of safe water, we will contribute to creating a social environment where people can live with a genuine sense of security.


UV radiation system

*1 Microorganisms that cause diarrhea, such as cryptosporidium.
*2 The first UV radiation system using a medium-pressure lamp in Japan that was certified by the Japan Water Research Center (JWRC) as meeting its product standards.
*3 UV treatment was newly specified as a water purification method by the Ministerial Ordinance for the Partial Revision of the Ordinance on Technological Standards for Water Supply Facilities.

Seawater desalination plant

Seawater desalination technology that produces freshwater from seawater, which exists in abundance on Earth, is an essential technology that provides a solution for the lack of water supply expected in the future. Although the reverse osmosis method* (using RO membranes) is currently gaining widespread use, it involves high power costs. It is therefore necessary to develop a system that can reduce water production costs.
To resolve the difficulty, Toshiba is developing technologies that can reduce water production costs compared with existing desalination systems by using our expertise in detailed control technologies and high-efficiency power recovery systems that we have acquired through the development of water supply and waste water systems in Japan. We will continue to provide solutions tailored to the needs of individual customers.


Field experiment system

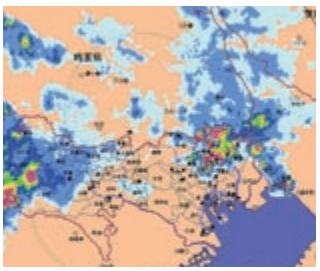
* A method that uses applied pressure on saline water to filter it through a membrane where desalinated water is left on the low-pressure side of the membrane and concentrated solution on the high-pressure side.

a secure supply of safe water

Rainwater Drainage System using rain gauge radars

In recent years, sudden localized heavy rain are occurring with increasing frequency in urban areas, causing difficulties in operating facilities installed at rainwater pump sites. Toshiba provides support in solving these difficulties by its Rainwater Drainage System. We have developed radar rain gauges that provide detailed and timely rainfall information, technology for forecasting inflows into rainwater pump sites and a system for supporting the operation of rainwater pumps using advanced technology in order to help operate facilities efficiently during heavy rain.


Radar rain gauge


Monitoring screen

Low-environmental-impact non-aeration wastewater treatment system

The activated sludge method*1, which is currently most widely used for the municipal wastewater treatment, requires aeration in order to provide oxygen needed for microorganisms to decompose organic matter. This method requires large power consumption for blowers used for aeration. To solve this difficulty, Toshiba is developing a wastewater treatment system that does not require aeration. The new system has applied technology that uses anaerobic granules*2, with regard to which Toshiba has a proven track record in industrial wastewater treatment. Toshiba's technology can reduce power consumption and excess sludge (industrial waste) greatly, compared with the activated sludge method while maintaining water quality. We are evaluating the system in order to commercialize it as a wastewater treatment system that can greatly reduce environmental impact compared to conventional systems.

*1 A wastewater treatment method using aerobic bacteria.
*2 A granule of bacteria that decomposes organic matter and produces methane & CO_2.


Pilot plant of non-aeration wastewater treatment system
(Capacity: 30 m^3/day)
(Japan Sewage Works Agency's Research & Technology Development experimental center)

System for producing fuel from sewage sludge

Toshiba is developing a technology of producing biomass resources*1 from sewage sludge.
The system is designed to reduce consumption of fossil resources by utilizing the energy of sludge for process heating. Thus, the system can reduce GHGs.
Toshiba has confirmed effectiveness of the system by field test plant which is 1.9tons/day capacity of sludge inlet. The field test demonstrated that the system can convert sludge into solid fuel with low environmental impact and high efficiency*2 compared to conventional sludge incineration systems.
We will provide such system to utilize biomass resources as renewable fuel which was incinerated.

*1 Renewable organic resources, other than fossil resources, produced by biological organisms.
*2 The field experiments were jointly conducted with the Japan Institute of Wastewater Engineering Technology. All experiments were completed in August 2009 and we obtained a certificate for the results of the new technology from the institute at the end of March 2010.


Field demonstration system

Building a Future with Stakeholders

We believe it is essential to achieve clear understanding through continuous dialogue as we work together toward creating a better global environment.

In our efforts to address environmental problems, Toshiba Group believes in the importance of always being open to the outside world. Our wish is to grow alongside our stakeholders by engaging in an active dialogue based on information disclosure. We conduct our activities while valuing the objective perspective that others have to offer.

Summary of Activities in FY2009

Providing Information to Stakeholders P56

- Toshiba Group Environmental Report 2009 won top prizes in the 13th Environmental Communications Awards and the Toyo Keizai Inc's 13th Environmental & Sustainability Report Awards
- Disclosure of a digest report on approximately 130 manufacturing sites
- Received awards in the 13th Environmental Communications Awards and the 63rd Dentsu Advertising Awards for advertisement on Toshiba's decision to cease production of incandescent bulbs
- Displayed environmentally conscious products at exhibitions in various countries around the world

Global Activities P57

- Development of various environmental communication activities in different countries

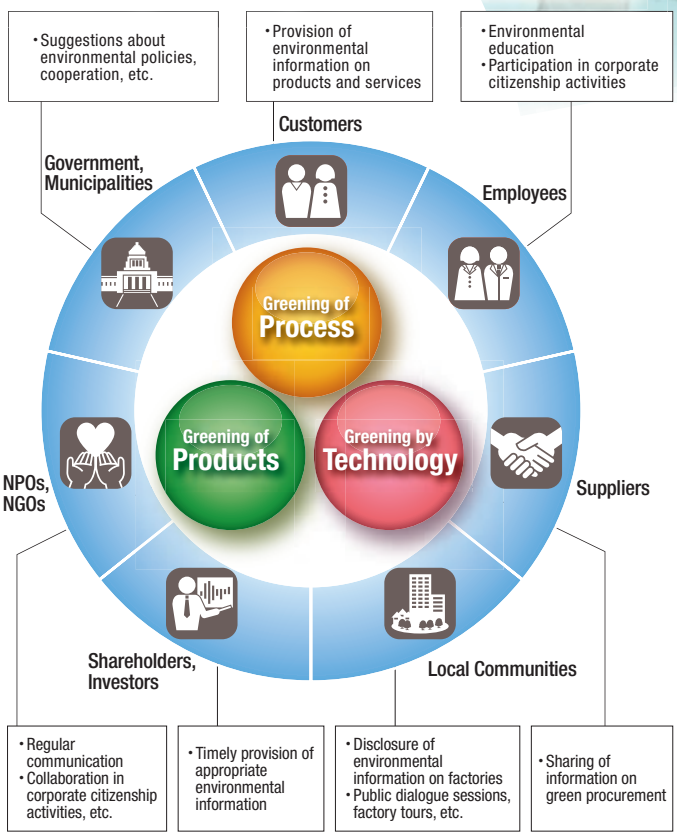
Partnerships with Stakeholders P59

- Achieving savings of a total 17,241 kWh of electricity in the Carbon Dioxide Reduction / Light-Down Campaign

Evaluation by External Parties P60

- Received the Energy Conservation Grand Prize 2009 for our LED light bulbs and compact air-conditioning system designed to prevent the idling of large trucks

■ Relationships between Major Stakeholders and Toshiba Group



■ Major Initiatives for Communicating with Stakeholders

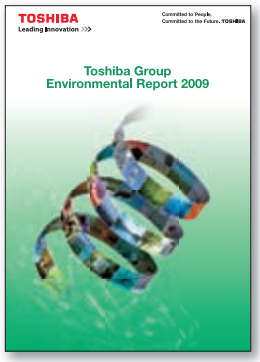
	Policy	Major activities
Proactive communication	・Provision of information to stakeholders ・Provision of information to local communities	・Publication of environmental reports ・Disclosure of site reports ・Disclosure of information on our environment website ・Environmental advertisements (TV commercials, newspapers, magazines, etc.) ・Display of environmentally conscious products at exhibitions ・Environmental labeling of products
Promotion of dialogue	・Two-way communication with stakeholders	・Stakeholder dialogue ・Dialogue sessions with local communities
Formation of partnerships	・Promotion of corporate citizenship activities ・Collaboration with stakeholders	・Efforts to preserve biodiversity ・1.5 Million Tree-planting Project ・Environmental programs with local communities ・Environmental education in local communities ・Participation in Challenge 25 Campaign

Providing Information to Stakeholders

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 2009, which was published last year, received the Award of Excellence for Environmental Reporting (Environment Minister's Award) at the 13th Environmental Communication Awards hosted by Japan's Ministry of the Environment and the Best Report Award in Toyo Keizai Inc.'s 13th Environmental & Sustainability Report Awards.

We also provide more detailed, up-to-date information on our environmental website in addition to the content found in our environmental reports.



Toshiba Group Environmental Report 2009
(available in Japanese and English)

Toshiba Group's environmental website
http://www.toshiba.co.jp/env/en/

Advertisements

We are deploying a corporate advertising campaign in Japan that communicates our environmental initiatives through television commercials and through a series of newspaper ads themed on "The Little Prince."

Our television commercial on Toshiba's decision to cease production of incandescent bulbs received the Environment Minister's Award in the Environmental Television Commercials category at the 13th Environmental Communications Awards, and our newspaper advertisements received the Environmental Advertising Award at the 63rd Dentsu Advertising Awards.

"The Little Prince" Ads

LED light bulbs; Toshiba's decision to cease production of incandescent bulbs "Thank you for 120 years of hard work."

Site Report

In order to present an overview of business activities at our manufacturing sites around the world and to have our environmental initiatives understood by local community residents, we disclose environmental information for each of our manufacturing sites. We summarized major environmental initiatives in FY2009 and presented digest reports on about 130 sites on our websites. Some of our manufacturing sites publish their own reports and present their information on the website. Copies of these reports are also distributed to visitors to our factories.

Digest reports on manufacturing sites

Environmental reports
manufacturing sites

Site report
http://www.toshiba.co.jp/env/en/company/region.htm

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 participated by Toshiba

March 2010	6th Eco-Products International Fair (Indonesia)
February 2010	19th Toshiba Group Environmental Exhibition (Toshiba headquarters, Japan)
January 2010	CES 2010 (USA)
December 2009	Eco-Products 2009 (Tokyo, Japan)
September 2009	IFA/Berlin International Consumer Electronics Show

Eco-Products 2009 (Japan)

CES 2010 (USA)

Toshiba Group Environmental Exhibition (Japan)

Eco-Products International Fair (Indonesia)

Global Activities

Toshiba Group is engaged in various environmental communication activities worldwide. We strive to make our environmental initiatives known to a wide range of stakeholders—including communities and schools near Toshiba factories and offices, as well as customers, students, and employees—so that we can all think together about environmental problems.

Activities in Americas

Earth Day in New York

In April 2010, Toshiba America, Inc. participated in an environmental event held in New York to commemorate the 40th anniversary of Earth Day. We set up a booth in Grand Central Station and exhibited our newest environmentally conscious products, including TVs, notebook PCs, LED lights, and smart grid systems. We also carried out proactive environmental initiatives such as a tree planting event with NY city and Toshiba employees, and recycling events at seven locations within the city.

Recognized as Platinum Member in Texas

Toshiba International Corporation in Houston, Texas, has been working actively to improve the environment for local communities and future generations through reductions of air polluting substances, tree planting, environmental education, and park cleanups. The Texas Commission on Environmental Quality's Clean Texas program commended these efforts, accepting the company as a platinum member, the highest level for general corporations.

Activities in China

Awarded for Environmental Leadership in Shenyang City

Toshiba Elevator (Shenyang) Co., Ltd., has been working actively to reduce the environmental impact of its products, help mitigate climate change, and save energy and resources in all of its business processes, and has communicated such initiatives in its Environmental Report. The company received an award as a Shenyang City Environmentally Compliant Model Company for its activities. The United Nations Environment Programme (UNEP) and administrative officials have been taking factory tours at the company, now recognized as a city leader for the environment.

Aiming for the Most Environmentally Conscious Factories

Management and employees of Toshiba Information Equipment (Hangzhou) Co., Ltd., manufacturing notebook PCs have been working together in an environmental initiative that utilizes employee creativity and rigorously follows "look, find, show" management, the core principle behind Toshiba's comprehensive environmental audit program. As a result of their work, environmental management improved across the entire factory, and the company received the Economic Development Zone Energy Saving Award from Hangzhou City and the Water-Saving Company Award from Zhejiang Province.

Activities in Europe

Toshiba Launched the First Billboard in Europe to Use Solar Energy

In May 2010, we erected a carbon-neutral billboard equipped with photovoltaic generation and LED light sources atop a building situated along the ring road in Paris. During the day, the billboard sells electricity generated by solar panels installed on the building's walls to the power company, and at night it receives a supply of electricity from the power company. This "self-sustaining" advertisement is set up to generate more electricity during the year than it consumes at night.

Offsetting Carbon Emissions with Customers

Toshiba Group in the UK is implementing a scheme to offset CO_2 emitted throughout the lifecycle of Toshiba laptop computers, televisions, and multi-function peripherals (MFPs). Through cooperation with carbon offset providers, money donations from customers during purchases is given to programs that invest in afforestation projects in the UK and energy efficiency schemes in Kenya.

Activities in Asia and Oceania

Participating in Earth Run 2010

Toshiba Storage Device (Philippines), Inc. participated in Earth Run 2010, a marathon event held to commemorate the 40th anniversary of Earth Day. 300 Toshiba employees participated by running courses ranging from 3 to 21 kilometers, effectively displaying Toshiba's commitment to solving environmental problems.

Recognition for Outstanding Environmental Management in Thailand

Toshiba Semiconductor (Thailand) Co., Ltd. has been actively providing environmental education to students at its factory in cooperation with government institutions, NGOs, and schools. The effort gained recognition from Thailand's Ministry of Industry for its demonstration of outstanding environmental management.

Activities in Japan

Holding a Parent-Child Environmental School

In July 2009, Toshiba exhibited in Asahi Shimbun's "Elementary and Junior High Summer Festival 2009," an environmental event for children held in Tokyo. We introduced numerous visitors to our environmental technologies, such as power generation equipment and LED illumination, and held a Family Environment School in which parents and their children conducted energy experiments and other hands-on projects designed to develop their understanding of the environment.

Year-round Communication with Local Residents

Toshiba Solutions Corporation annually hosts an Environmental Forum as a way of communicating with local communities and government through environmental activities. The event is sponsored by Fuchu City and invites participation from local residents. Lectures were given by C. W. Nicol in 2006, Ken Noguchi in 2007, Ikuo Nakamura in 2008, and Manabu Miyazaki in 2009. The company also fosters a deeper relationship with local residents year-round by participating in community events such as the Fuchu Environmental Festa.

Lecture with sign language interpretation

Teaching the importance of wildlife protection

Partnership with Stakeholders

We are working to promote environmental activities through collaboration with our stakeholders.

●Toshiba Youth Conference for a Sustainable Future 2009

In August 2009, we held the 2nd Toshiba Youth Conference for a Sustainable Future by the Toshiba International Foundation, an event that gathered teachers and high-school students from Japan, the United States, Thailand, and Poland to discuss environmental issues. Through a multifaceted program involving group discussions, interviews with environmental experts, and tours of Toshiba facilities, we helped to foster youth that will think and act on environmental issues with a global perspective.

●Environmental Education in Brazil

Toshiba Transmission and Distribution Systems Brazil Ltd. conducts a range of environmental activities. One such activity was an environmental education program that taught up to 1,300 teachers, students, and local residents on the importance of environmental protection.

●Kids' ISO in Yokkaichi, Japan

Toshiba's Yokkaichi factory is promoting efforts to teach elementary school children in neighborhood communities about the environment. Using educational tools such as the Yokkaichi Kids' Carbon Diet Strategy, which was jointly developed by the Kids' ISO 14000 Program, Yokkaichi City, and multiple companies including Toshiba's Yokkaichi factory, children learned how to save energy at home by following the PDCA cycle.

●Toshiba Science Museum

The Toshiba Science Museum offers an array of activities focused on the theme "Communion between People and Science"—from hands-on learning using cutting-edge science and technology, to demonstrations of technologies that generate and use electricity in an environmentally conscious manner. The museum also holds classes and environmental seminars for students, and attracts many visitors with its programs.

Toshiba Science Museum homepage http://museum.toshiba.co.jp/

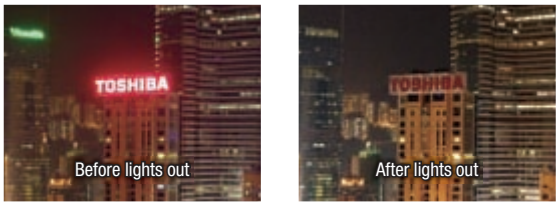
●Carbon Dioxide Reduction / Light-Down Campaign in Japan

We participated in the Black Illumination 2009 campaign (June 21) and the Star Festival Light-Down campaign (July 7) organized by the Japanese Ministry of the Environment and turned off all signboard illuminations in offices and towns. Toshiba Group designated the period between June 20 and July 7 as a voluntary campaign period and saved 17,241 kWh of electricity at 70 facilities in Japan and abroad. This amounts to about 4.8 years of electricity consumed by one home.

Signboard illumination on top of the Toshiba Building, Hamamatsu-cho

●Earth Hour 2010

Earth Hour 2010 is an international event hosted by the World Wildlife Fund that calls for action against climate change through a global effort to turn off lights at the same time on the same day. Toshiba also took part in the event, turning off signboards at eleven locations: New York, Paris, Warsaw, Jakarta, Ho Chi Minh, Mumbai, Hong Kong, Beijing, Guangzhou, Tokyo (Toshiba Building, Hamamatsu-cho), and Hiroshima.

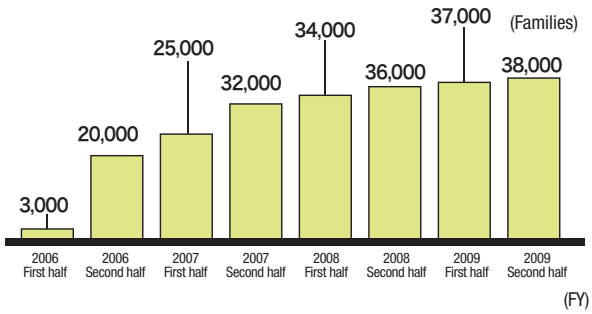


Signboard illumination in Hong Kong

●Promotion of the Environmental Accounts Campaign

Toshiba Group is participating in the Eco Family campaign of Japan's Ministry of the Environment in order to raise environmental awareness among our employees. The number of families with a registered account rose to 38,000 in March 2010.

■ Number of Registered Accounts from Toshiba Group



Evaluation by External Parties

Award title	Award-winning item (s)	Evaluated entity
Evaluation of products		
Japan Machinery Federation Chairman's Prize 2009 Outstanding Energy-Saving Devices Awards	Hydrogen-powered, indirect cooling turbine power generator with super-high efficiency and large capacity 	Toshiba Corp.
Agency for Natural Resources and Energy Director-General's Award, Residential Use category 2009 Energy Conservation Awards	E-CORE LED light bulbs, LEL-AW8N, and LEL-AW8L 	Toshiba Lighting & Technology Corp.
Energy Conservation Center of Japan Chairman's Prize, Automotive Products category 2009 Energy Conservation Awards	Air Style LAS-A001RS, a compact air-conditioning system designed to prevent the idling of large trucks 	Toshiba Home Appliances Corp. (and 2 other companies)
Outstanding Award, Eco-Products category 6th Eco-Products Awards	Safe, long-life rechargeable battery, SCiB™ 	Toshiba Corp.
Environment Minister's Award, Eco-Products category 6th Eco-Products Awards	ENE- FARM fuel cell system for residential use 	Toshiba Fuel Cell Power Systems Corp. (and 7 other companies)
Evaluation of business activities		
Outstanding Company for 3R Activities 2009 Environment Minister's Commendation for Contributions to the Development of a Recycling-oriented Society	Zero waste and zero emissions initiatives through 3R measures	Iwate Toshiba Electronics Co., Ltd.
International Friendship Award, 2009 Shengjing Environmental Conservation Awards	Promotion of Group-wide environmental management	Toshiba Elevator (Shenyang) Co., Ltd. (China)
2009 Hunnan New District Outstanding Company in Environmental Conservation	Environmental management activities	Toshiba Elevator (Shenyang) Co., Ltd. (China)
2009 Hunnan New District Outstanding Individual in Environmental Conservation	Promotion of Group-wide environmental management	Toshiba Elevator (Shenyang) Co., Ltd. (China)
2009 Tonglu County Environmental Conservation Bureau Clean Production Award	Clean production	Toshiba Hydro Power (Hangzhou) Co., Ltd. (China)
Commendation by Wuxi City for a Green Company Environment	Environmental conservation activities	Toshiba Semiconductor (Wuxi) Co., Ltd. (China)
Platinum Level, Clean Texas Program (Texas Commission on Environmental Quality)	Voluntary environmental programs for the prevention of air pollution and water contamination and the preservation of resources	Toshiba International Corporation (USA)
The Plug-in To eCycling's TV Recycling Challenge (U.S. Environmental Protection Agency (EPA))	Recycling activities	Toshiba America Consumer Products, LLC
Outstanding Pollution Control Officer Award	Wastewater management	Toshiba Information Equipment (Philippines), Inc.
Hibiscus Award (Notable Achievement) 2008-2009	Environmental conservation activities	Toshiba Electronics Malaysia Sdn. Bhd.
Energy Star Recruit of the Year	Standards met in all television models and major laptop computers	Toshiba of Canada, Ltd.
Evaluation of communication programs		
Environmental Advertising Award 63rd Dentsu Advertising Awards	LED advertisements 	Toshiba Corp.
Award of Excellence for Environmental Reporting (Environment Minister's Award) 13th Environmental Communications Awards	Toshiba Group Environmental Reports (Toshiba Group Environmental Report 2009, CSR Report 2009, Social Contributions Activities Report 2009)	Toshiba Group
Environment Minister's Award in the Environmental TV Commercials category 13th Environmental Communications Awards	"Appreciation for Light Bulbs" Poster	Toshiba Group
Best Report Award (Environmental Reports category) Toyo Keizai Inc.'s 13th Environmental & Sustainability Report Awards	Toshiba Group Environmental Report 2009	Toshiba Group
2009 Tokyo Metropolitan Prefecture Environmental Award (Governor's Award)	Cooperation in Tama City's forest development project	Toshiba Group
Malaysia Sustainability Reporting Award (MaSRA) 2009	Environmental conservation activities	Toshiba Electronics Malaysia Sdn. Bhd.
Evaluation of management		
Japan Environment Efficiency Forum Chairman's Award, Product Activities category, Eco-Efficiency Award 2009	Development of PCs with low environmental impact	Toshiba Corp.
LCAJ Chairman's Award, 6th Life-Cycle Assessment Society of Japan Awards	Promotion of LCA in the field of power systems for environmentally conscious design	Toshiba Corp.
Green IT Promotion Council Chairman's Award, Green IT Award 2009	Contribution to the mitigation of climate change through environmentally conscious PCs	Toshiba Corp.

Evaluation by the mass media and SRI		
Ranking based on the 13th Environmental Management Survey by Nikkei Inc.	6th place (manufacturing industry)	Toshiba Group
Member of Dow Jones Sustainability Indexes (DJSI) for Socially Responsible Investing (SRI)	Selected for 10 consecutive years since 2000	Toshiba Group
Nikkei BP Environmental Management Forum: the 11th Environmental Brand Survey	10th place (among 560 major companies in various industries)	Toshiba Group

Environmental Management

Toshiba Group promotes core initiatives for its environmental management by emphasizing the importance of "integrity," which means sound business management and sincerity in action.

Toshiba Group has explicitly stated its policies on environmental conservation in its Corporate Philosophy and promotes environmental management by focusing on environmental issues as one of its top management priorities. It has also formulated the Basic Policy for the Environment which lays out specific environmental strategies to be shared by all members of the group.

Summary of activities in FY2009

Management Structure P63

- Promotion of initiatives for environmental management
  Toshiba Group's Environmental Management Promotion Organization expanded into eight divisions

Risks and Compliance P63

- No case of violation of environmental regulations discovered in FY2009

ISO14001 P64

- Obtaining ISO 14001 for all business sites around the world, covering 95% of business sites and 97% of employees

Education and Certificates P64

- Reviewing training programs every year in order to provide environmental education for our employees all around the world
- The number of in-house environmental auditors increased to 288

Environmental Audits P65

- Reviewing audit items every year in order to conduct audits based on stricter standards

Performance Evaluation P66

- Evaluation on environmental management performance is reflected in the performance evaluation of in-house companies and key group companies

Awards P66

- 4 groups received Outstanding Performance Awards under the environmental award system

Environmental Accounting P67

- A decrease in both capital investments and costs
- Environmental benefits exceeded costs in the environmental cost-benefit analysis
- Environmental benefits of energy supply equipment were calculated

Basic Commitment of Toshiba Group

We, Toshiba Group companies, based on our total commitment to people and to the future, are determined to help create a higher quality of life for all people, and to do our part to help ensure that progress continues within the world community.

Commitment to People

We endeavor to serve the needs of all people, especially our customers, shareholders, and employees, by implementing forward-looking corporate strategies while carrying out responsible and responsive business activities. As good corporate citizens, we actively contribute to further the goals of society.

Commitment to the Future

By continually developing innovative technologies centering on the fields of Electronics and Energy, we strive to create products and services that enhance human life, and which lead to a thriving, healthy society. We constantly seek new approaches that help realize the goals of the world community, including ways to improve the global environment.

TOSHIBA Group Slogan

Committed to People,
Committed to the Future. **TOSHIBA**

Toshiba Group's Basic Policy for the Environment

Based on the recognition that it is our responsibility to maintain the health of the global environment as an irreplaceable asset for future generations, Toshiba contributes to the development of a sustainable society by promoting environmental activities designed to realize a world that is low carbon, recycling based and environmentally harmonious.

◆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 prevention of global warming, efficient utilization of resources and control of chemical substances.

◆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.

In order to become one of the world's foremost eco companies, Toshiba Group is promoting environmental management from three perspectives: Greening of Process, Greening of Products, and Greening by Technology.

As a basis for promoting environmental management, we have formulated the Basic Policy for the Environment, based on which we have developed the Environmental Vision, which sets numerical targets to be achieved based on the basic policy, and voluntary environmental plans, action plans designed to achieve these targets. In addition to measures that ensure compliance with laws and regulations, which is our top priority, we provide a wide range of environmental education programs for all employees.

We are also working to develop an ISO 14001 system aimed at ensuring legal compliance and management structures within individual companies. Also, we monitor, through our environmental audit system, the management and development of environmentally conscious products and promote environmental activities at each business site in order to improve the level of activities. As a tool for the management and analysis of environmental information and environmental accounting data, we have created a global environmental management information system, which is centrally controlled.

And in order to provide incentives to take on environmental challenges, we have developed an environmental award system for organizations, teams and individuals and a performance evaluation system for in-house companies and key group companies.

Basic Commitment of Toshiba Group

Basic Policy for the Environment

- Promoting environmental management
- Providing environmentally conscious products and services and reducing their environmental impact through business activities
- As a corporate citizen of planet Earth

Environmental Vision

▶ See p. 5 for details.

Action Plan for Achieving the Vision

Voluntary environmental plan

▶ See p. 9 for details.

Core Initiatives

Environmental Awards and Performance Evaluation

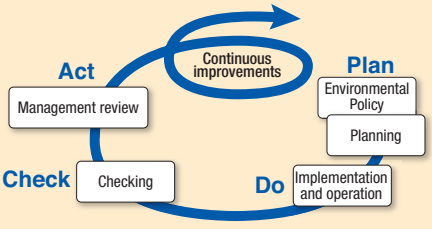
Environmental Education

Environmental Management Information System

Environmental Accounting

Environmental Audit System

ISO 14001



Observance of Environmental Laws and Regulations

Management Structure

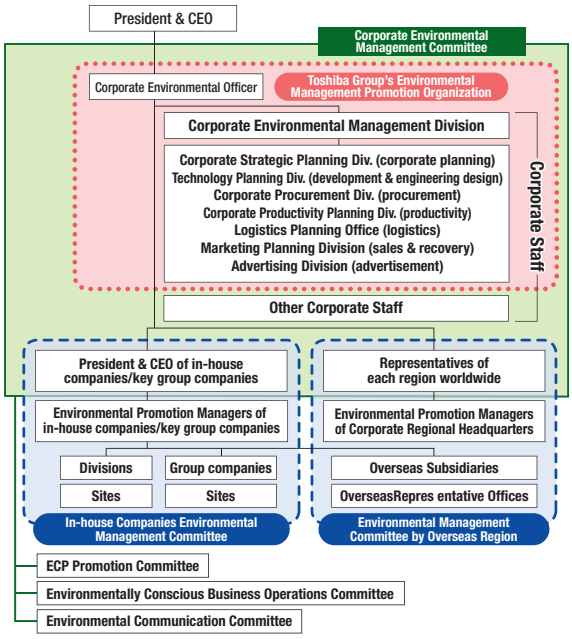
Management Structure

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.

In order to promote environmental management, the Corporate Environmental Officer, Corporate Senior Executive Vice President, supervise the group as a whole, giving instructions to in-house companies and the presidents of key group companies. The Corporate Environment Management Division formulates specific strategies for environmental management. With a view to promoting and strengthening environmental management throughout all companies, we have organized Toshiba Group's Environmental Management Promotion Organization, which is directly supervised by the Corporate Environmental Officer. This organization, which is a cross-functional team composed of divisions that provide direct support for Toshiba Group's businesses and services from environmental perspectives—i.e. the Corporate Strategic Planning Division, Technology Planning Division, Corporate Procurement Division, Corporate Productivity Planning Division, Logistics Planning Office, Marketing Planning Division, Advertising Division and Corporate Environment Management Division—implements various measures to promote environmental management.

■ Toshiba Group Environmental Management Structure



The Corporate Environmental Management Committee was formed as a group-wide decision-making organization regarding environmental management. The Corporate Environmental Officer serves as the chairperson of this committee, which holds meetings twice a year, attended by executive officers, environmental management officers of in-house companies and key group companies, and overseas regional directors. Various issues are examined at these meetings, such as proposals concerning environmental management, technological development, production and sales, as well as reviews of voluntary environmental plans aimed at achieving the Environmental Vision.

The following committees were organized as subgroups of the Corporate Environmental Management Committee: the Environmentally Conscious Products (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 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. We also have an auditing system in place (see p.65 for details) and promote Toshiba Group's environmental management in countries around the world through training for local auditors who conduct the environmental audits of overseas sites.

■ Global Environmental Management Network

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 water so as to ensure that all its business sites comply with environmental rules. We conduct in-house environmental audits (see p.65 for details) 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 audits on individual business sites, new regulation policies, and examples of accidents in other companies, among group companies.There were no violations of environmental rules and regulations discovered in Toshiba Group companies in FY2009. Detailed information is presented on our website to show what measures are taken to ensure legal compliance at our business 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 sites work in collaboration under the direction of the Corporate Environmental Officer to implement appropriate measures, including sharing information, checking relevant business sites and preventing recurrences.

ISO 14001

In recognition of the important role of activities at business sites in promoting environmental management, we obtained ISO 14001 certification for all of Toshiba Corporation's 16 domestic business sites by 1997 and have maintained the certification to this day. Among the 193 business sites of Toshiba Group as a whole, we have obtained certification for 183 sites, which covers 95% of our business sites and 97% of our employees. We plan to obtain ISO 14001 certification for all business sites that have not obtained it (10 sites) by the end of FY2011. We will also obtain ISO 14001 certification for overseas business sites that will become eligible for certification as a result of business expansion.

Toshiba Semiconductor Company and Toshiba Elevator and Building Systems Corporation 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 companies and company groups.

■ List of ISO-14001-certified Sites

	Eligible sites	Certified sites	Certification rate	Percentage of employees
Toshiba Corporation's business sites	16	16	100%	100%
Domestic manufacturing sites	72	71	99%*	100%*
Domestic non-manufacturing sites	43	43	100%	100%
Overseas manufacturing sites	52	46	88%	95%
Overseas non-manufacturing sites	10	7	70%	56%
Total	193	183	95%	97%

As of March 31, 2010

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

* 98.6% for the certification rate and 99.8% for the percentage of employees are rounded to the nearest whole numbers.

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 (542 companies in FY2009) and is accessible from countries around the world.

Education and Certificates

In order to raise the level of environmental activities, we provide environmental education programs for all employees. These education programs are composed of (1) position-based education courses, (2) general education courses, (3) specialized education courses, and (4) ISO 14001 education courses, offering curriculums designed to meet the needs of different posts, occupational roles and specialties. Curriculums are reviewed annually for all education courses in order to help employees share the latest information.

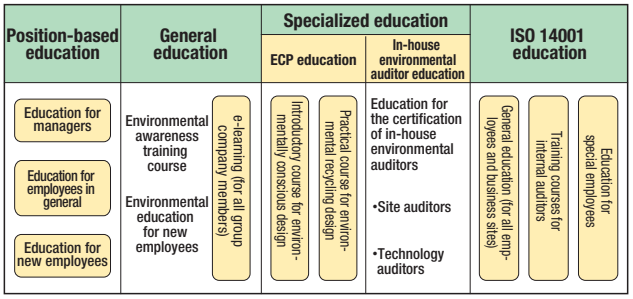
In general education courses designed for all members of the group, we use e-learning to provide lessons to employees at local branches and to employees on business trips using mobile PCs in order to save time on transportation and to improve attendance rates.

In specialized education courses, we provide ECP education and in-house environmental auditor education. ECP education is provided for development and design engineers to help them learn the basics of ECP development and approaches to environmentally conscious design.

We also offer programs for obtaining national and public certificates required for environmental activities. We provide measures to encourage using environmental household accounts (Eco Family) and taking the Eco Test* in order to raise environmental awareness among employees and their family members.We will continue to improve our education programs and will promote the use of IT in our environmental education programs for all employees.

* Certification test for environmental specialists administered by the Tokyo Chamber of Commerce and Industry.

■ Environmental education system



We provide training for auditors for our in-house environmental auditing system, 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 FY2009, 27 employees were certified as site auditors, 15 as technology auditors and 9 as overseas local auditors. The current number of certified auditors is 288. (See p.65 for details.)

■ Training for auditors

Education (1 day)
↓
On-site training and written examination (1 day)
↓
Chosen as a candidate
↓
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 equival-ent 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 FY2009 was about 70%.

Toshiba Group certified auditors in FY2009

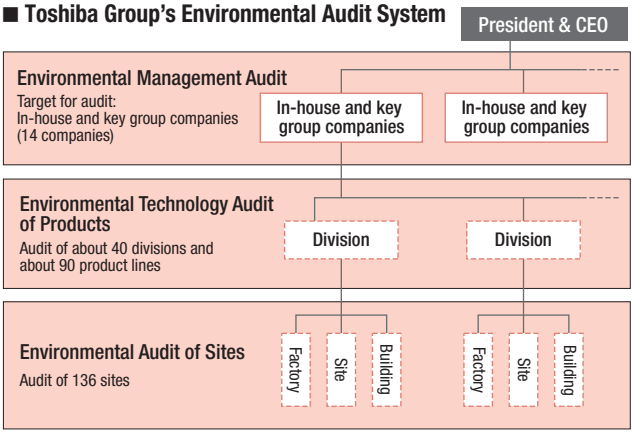
Site auditors: 165 Overseas local auditors: 26
Technology auditors: 97

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.

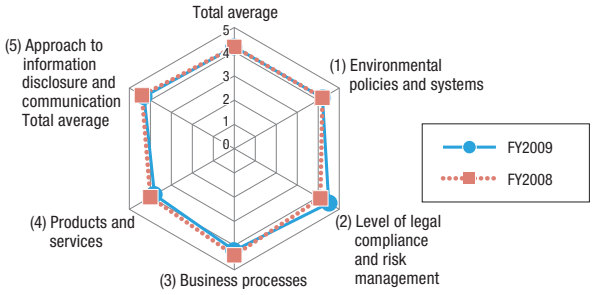
■ Toshiba Group's Environmental Audit System



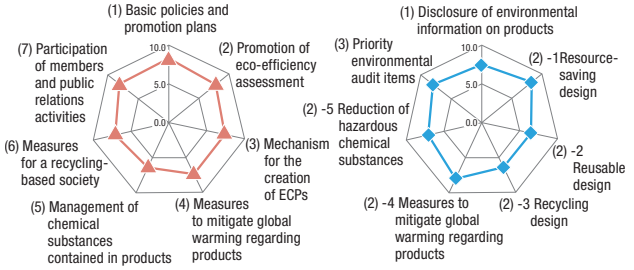
These multiple audits have been integrated into a single system since FY2006 so that they could all be conducted at once. Toshiba Group conducts environmental management audits covering in-house companies and 14 key group companies, environmental technology audits of products covering about 40 divisions, and environmental audits of sites covering 136 business 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 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 apply stricter evaluation standards. In FY2010, we will check the initiatives currently undertaken by in-house companies and key group companies by adding items regarding biodiversity to these audits in order to improve our environmental management.

■ Audit results (FY2009)

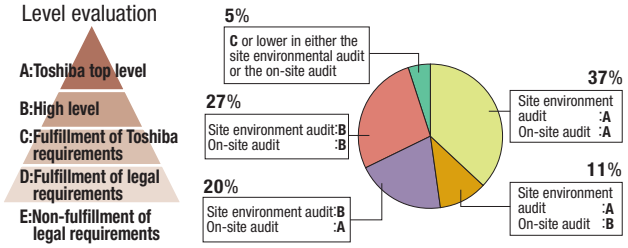
Environmental management audit (total number of check items: 70)



Environmental technology audit of products (total number of check items: 41)

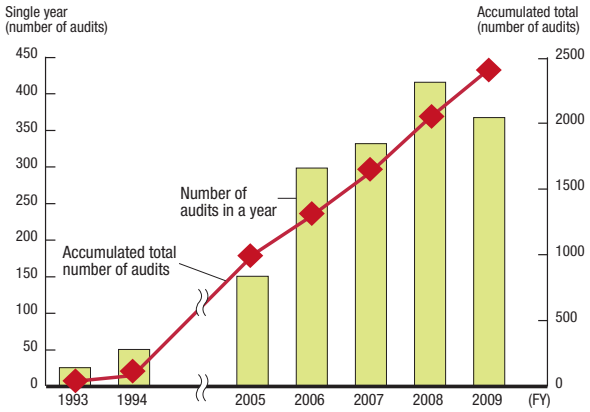


Environmental audit of sites (total number of check items: 201)



The number of audits that are conducted, including self-audits, is increasing annually and the total number of audits conducted since FY1993 has exceeded 2,000. We also provide in-house training for auditors who conduct audits (see page 64 for education programs). In order to provide the know-how about audits and auditor training programs developed within Toshiba Group for public use, we are planning to offer consulting services as part of the business of Term Corporation, one of Toshiba's group companies.

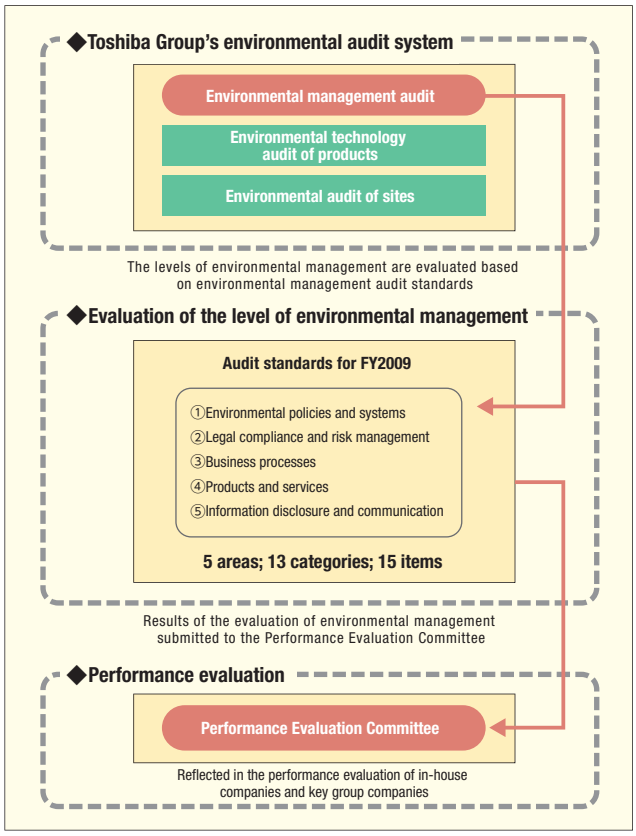
■ Toshiba Group's environmental audit records



Performance Evaluation and Awards

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 (14 companies). We numerically evaluate their (1) environmental policies and systems, (2) legal compliance and risk management, (3) business processes, (4) products and services, and (5) information disclosure and communication, and provide feedback. The results are reflected in the performance evaluation of these companies and serve as incentives.



Awards

In FY2003, Toshiba Group organized the Toshiba Group Environmental Award Program in order to award the President's awards to individuals, groups and offices that have delivered outstanding performance regarding environmental management or development of environmentally conscious products, business processes and communication. Out of 25 groups carefully selected from among in-house companies and key group companies, 4 groups won Outstanding Performance Awards at the Toshiba Group CSR Conference in December. No group was chosen for the Highest Performance Award in FY2008 and FY2009 in view of the fact that public standards for environmental management are becoming stricter every year. Against this background, we will adopt a quantitative assessment approach to identify and define issues in environmental activities and to measure environmental effects in FY2010 so as to improve the level of environmental management measures through the environmental award system.

■ Projects chosen for Outstanding Performance Awards in FY2009

Environmentally Conscious Product Marketing Team

"Environmental marketing activities at Lazona Kawasaki Plaza"

Replacement of the lighting system at Lazona Kawasaki Plaza

The project team developed various marketing activities, such as holding an environmental event, when replacing the lighting system at Lazona Kawasaki Plaza Thanks to joint advertisements by the customer and Toshiba, the replacement of the lighting system and the environmental event were reported by various media and contributed to improving Toshiba Group's environmental brand image.

Toshiba Automotive Systems Division

"Business development and environmental advertisement for a driving system for hybrid vehicles"

Toshiba Inverter

Toshiba Motor

The team developed a compact, high-performance driving system for hybrid vehicles and signed a letter of intent with Volkswagen, which was reported by media in Japan and overseas. Through its advertisement activities in the automotive business, the team contributed to improving Toshiba Group's environmental brand image.

Toshiba Mobile Display Co., Ltd.

"Development of a sewage sludge fertilizer"

Field experiment on the lawn in the Fukaya Factory

The team established a process for refining sludge generated from phosphoric acid wastewater into a chemical fertilizer in collaboration with a fertilizer manufacturer for the first time in Toshiba Group. The team also concluded a sales contract for the refined fertilizer with the fertilizer manufacturer and registered it with the Ministry of Agriculture, Forestry and Fisheries as a "citric acid-soluble phosphoric acid fertilizer."

Toshiba Semiconductor (Wuxi) Co., Ltd.

"Continuous activities for the promotion of environmental management in Wuxi, China"

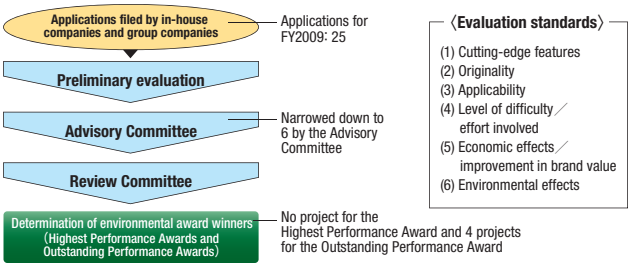
The highest environmental ranking ("Green") given by the Wuxi City Environment Bureau

The company is engaged in various activities for voluntary environmental plans and environmental communication and is highly evaluated among Toshiba Group companies based on the Toshiba Group's environmental audit. Also given the highest environmental ranking ("Green") by the Wuxi City Environment Bureau, the company is promoting innovative environmental management.

■ Projects receiving Toshiba Group Environmental Awards

Environmental management	Promotion of environmental management in coordination with the Environmental Vision, voluntary plans and business activities
Environmentally conscious products	Design and development of environmentally conscious products, development of environmental technologies and solutions
Business processes	Activities aimed at reducing the environmental impact regarding all business processes, including research and development, design, procurement, manufacture, sale, distribution, services and recovery of products
Communication	Promotion of measures designed to raise environmental awareness inside and outside the company

■ Evalution process



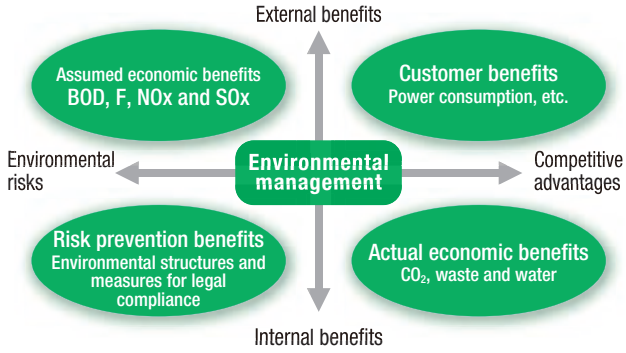
Environmental Accounting

●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-efficiency in managerial decision making.

The figure below shows an outline of the environmental accounting of Toshiba Group. Our environmental accounting assumes four basic concepts: prevention of potential environmental risks, competitive advantages, 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, assumed economic benefits estimated to result from reductions in air pollutant emissions, benefits resulting from preventing potential risks, and actual economic benefits resulting from reductions in the amount of waste and energy consumed. These categories provide useful indices of environmental management.

■ **Environmental accounting as a tool for environmental management**



●Environmental costs and benefits

The environmental accounting for FY2009 covers Toshiba and 542 consolidated subsidiaries and 598 business sites. Environmental costs are categorized and calculated in accordance with the Environmental Accounting Guidelines 2005 of the Ministry of the Environment. Meanwhile, environmental impact reduction benefits are calculated in terms of both physical quantities and monetary values.

Total environmental costs decreased by 10.5% from FY2008 to 54.3 billion yen. While costs required for global warming mitigation and waste disposal decreased in general, costs for the research and development of environmentally conscious products increased by 19% from the previous year. Environmental research and development costs account for 5.8% of the total R&D costs during the fiscal year (4.1% in FY2008), which marked an all-time high. Of different business sections, the electronic device section, which manufactures semiconductors and liquid crystal devices, accounts for the largest percentage (45%) of total environmental costs, followed by the social infrastructure section, which accounts for 30% of the total.

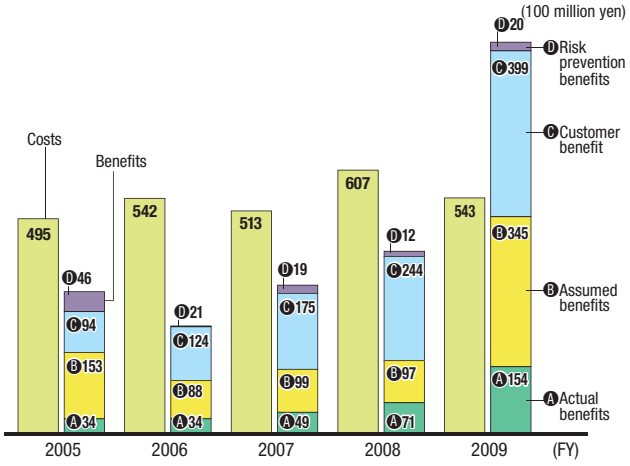
Total investments decreased by 40% from FY2008 to 8 billion yen, with environmental investments accounting for 3.8% of total investments (3.1% in FY2008). The decrease in environmental costs, including costs and investments, is accounted for by reductions in investments and a decrease in production during the first half of the fiscal year.

The total amount of environmental benefits increased greatly, by 116%, from the previous fiscal year to 91.8 billion yen. In terms of benefits from business activities, actual economic benefits increased by 117% and assumed economic benefits by 254%. Meanwhile, customer benefits increased by 63% thanks to reductions in environmental impact (including reductions in power consumption) resulting from an increase in the sales of environmentally conscious products.

Reductions in environmental impact in the electronic device business were the major factor that brought the increase in actual economic benefits, while the increase in assumed benefits is largely accounted for by reductions in environmental impact resulting from the thermal power generation project by Sigma Power Ariake, which started full-scale operation in 2007. The increase in customer benefits was mainly due to an increase in the sale of bulb-type fluorescent lamps and LED lamps, which greatly reduce power consumption. It was also affected by reductions in power consumption achieved by a new LCD TV model, REGZA, and a drum-type washing machine with dryer, ZABOON, and an increase in their sales.

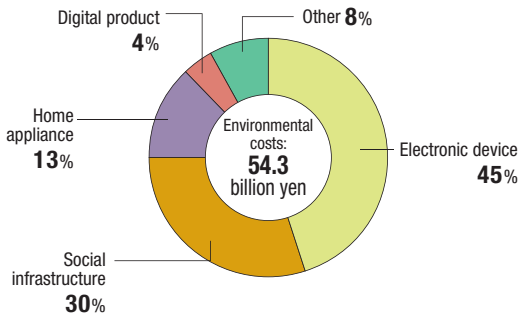
Accordingly, benefits exceeded costs in the environmental accounting of Toshiba Group in FY2009. We will continue to develop environmental management strategies aimed at increasing environmental benefits based on a careful analysis of environmental costs.

■ **Changes in environmental costs and benefits (FY2005-FY2009)**



To ensure consistency with the 4th voluntary Environmental Plan, beginning in FY2009, the base year for all older models of products was, in principle, revised to the year 2000.

■ **Breakdown of environmental costs by business segment (FY2009)**

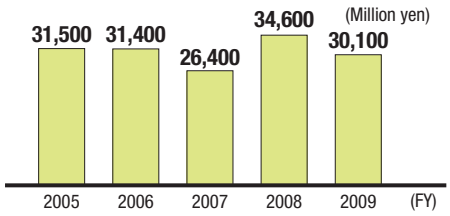


●Calculation of the benefits of energy supply equipment

Toshiba Group has been calculating actual benefits, assumed benefits and risk prevention benefits as environmental benefits of business activities (Greening of Process) and customer benefits as environmental benefits of eco products (Greening of Products). This year, we estimated the value of the environmental benefits of our energy supply equipment (Greening of Technology) as shown in the figure on the right.

The value of customer benefits of an eco product is calculated by multiplying the difference in power consumption between the benchmark product and the target product by sales volume. Meanwhile, in order to measure the economic benefits of energy supply equipment, we calculated the monetary values of improvements in fuel costs made possible by nuclear power plants built and operated by Toshiba Group and improvements in power generation efficiency made possible by increasing the power output through the remodeling of existing nuclear power plant facilities. Our calculation showed that the economic benefits of our energy supply equipment amounted to 30.1 billion yen in FY2009. Annual increases and decreases in economic benefits are due to factors such as increases in the number of power plants and changes in the operation rate of individual power plants. Economic benefits show decreases in years when the operation is suspended for a long period of time due to periodic inspections or earthquakes. Based on these results, we will continue our efforts to develop methods for accurately measuring environmental benefits.

■ Changes in the environmental benefits of power plants



■ Environmental costs(FY2009)

Unit: million yen

Category	Description	Investments		Costs	
Business area costs	Reduction in environmental impact	6,374	(−5,433)	24,771	(−6,489)
Upstream/downstreamcosts	Green procurement, recycling, etc.	633	(−189)	2,505	(179)
Administration costs	Environmental education, EMS maintenance, tree planting on factory grounds, etc.	301	(−1)	7,484	(−1,972)
R&D costs	Development of environmentally conscious products, etc.	655	(214)	18,635	(2,985)
Public relations costs	Support for local environmental activities, donations, etc.	19	(2)	189	(72)
Environmental damage restoration costs	Restoration of polluted soil, etc.	0	(−1)	734	(−1,178)
Total		**7,983**	**(−5,406)**	**54,318**	**(−6,403)**
		Total investments during the period: 210.2 billion yen		Total R&D costs during the period: 323.2 billion yen	

Figures in parentheses represent increases or decreases from the previous year.

■ Environmental benefits(FY2009)

Unit: million yen

Category	Description	Amounts		Calculation method
Ⓐ Actual benefits	Benefits that are represented as monetary values, such as reductions in electricity and water charges	15,448	(8,320)	The amount of money, such as electricity charges and waste disposal costs, that was saved compared with the previous year, plus earnings from the sale of objects with value.
Ⓑ Assumed benefits	Reductions in environmental impact that are converted into monetary values	34,450	(24,710)	The amount of money was calculated by multiplying the cadmium equivalent value of each substance obtained from environmental standards and the American Conference of Governmental Industrial Hygienists Threshold Limit Value (ACGIH-TLV) by damage compensation for cadmium pollution. This method of calculation provides a means of showing year-on-year reductions in the environmental impact on the atmosphere, water and soil and makes it possible to compare the environmental impact of different substances using the same standard by converting the impact into monetary values.
Ⓒ Customer benefits	Reductions in environmental impact during the use of products that are calculated in terms of monetary values	39,887	(15,440)	Environmental impact reduction benefits through the life cycle of products are evaluated in physical quantity units and monetary units (amounts of money). The life cycle of a product includes (1) procurement of materials, (2) manufacturing, (3) transportation, (4) use, (5) shipment, (6) recycling, and (7) proper disposal. Toshiba's environmental accounting focuses on environmental impact reduction benefits during the use of products. Energy-saving benefits are calculated by using the following equation: Benefits (yen) = ∑[(Annual power consumption of the previous product model − Annual power consumption of the current product model) × Number of products sold annually × Benchmark unit price of electricity]
Ⓓ Risk prevention benefits	Reductions in environmental risks compared with conditions prior to investments that are calculated in terms of monetary values	2,025	(803)	Benefits accruing from investments in environmental structures, such as dikes, designed to prevent the pollution of soil and groundwater are evaluated as benefits of preventing potential risks. Risk prevention benefits are calculated for each capital investment item using the following equation: Risk prevention benefits = Quantity of chemical substances safely stored × Standard amount of money required for purification and restoration × Number of potential accidents. Values calculated using our own standards were used for the calculation of the standard amount of money required for purification and restoration and potential accidents in order to assess risks resulting from chemical leaks.
Total		**91,810**	**(49,273)**	

Note: Figures in parentheses represent increases or decreases from the previous year.

(1) Actual benefits(FY2009)

Item	Reductions in environmental impact	Benefits measured in monetary values (in millions of yen)
Energy	2,091,371 (GJ)	9,355
Waste	32,849 (t)	5,631
Water	3,708 (thousand m^3)	462
Total		**15,448**

Note: Reductions in environmental impact represent differences between FY2009 and FY2008.
Due to rounding errors, sums of individual figures may not equal the totals.

(2) Assumed benefits(FY2009)

Item	Reductions in environmental impact	Benefits measured in monetary values (in millions of yen)
Benefits from reductions in the amount of chemicals discharged	673 (t)	34,450

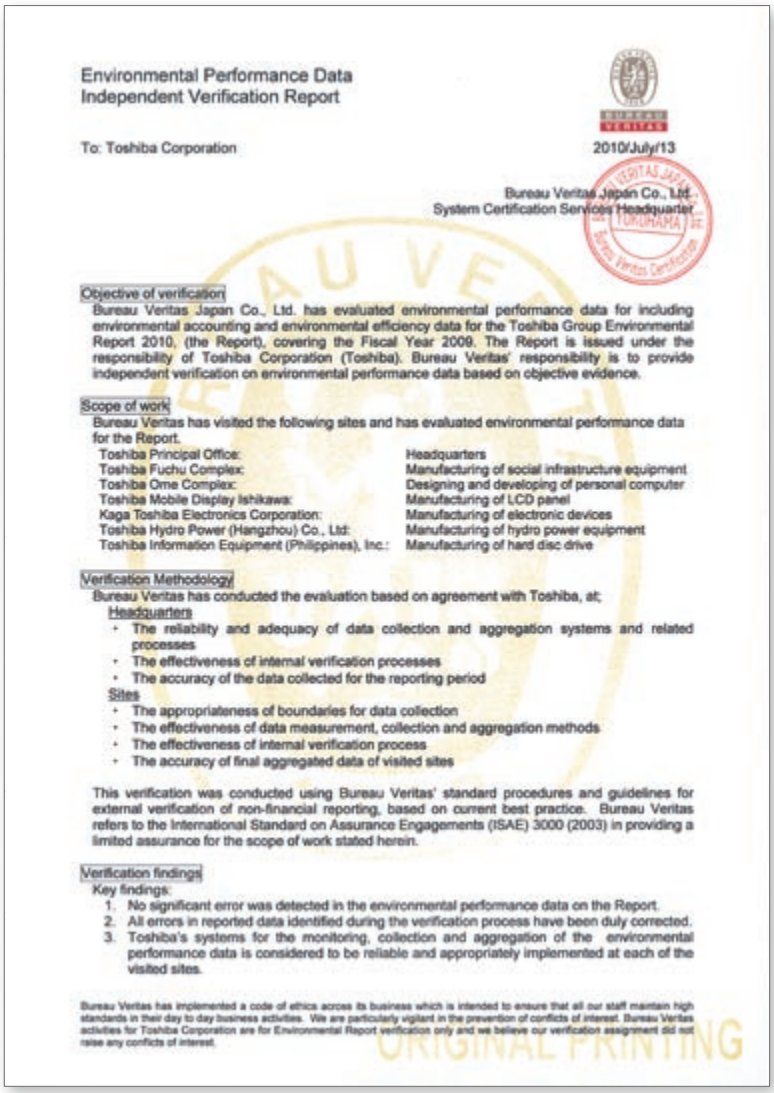
(3) Customer benefits(FY2009)

Item	Reductions in environmental impact	Benefits measured in monetary values (in millions of yen)
Environmental impact reduction benefits during the use of products	613,946 (t-CO_2)	39,887

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.* to conduct a third-party verification of the data. Global data regarding the results for FY2009 was reviewed to check the processes of the collection, aggregation and internal verification of data and the accuracy of aggregated data.

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



Environmental Performance Data
Independent Verification Report

To: Toshiba Corporation

2010/July/13

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

Objective of verification

Bureau Veritas Japan Co., Ltd. has evaluated environmental performance data for including environmental accounting and environmental efficiency data for the Toshiba Group Environmental Report 2010, (the Report), covering the Fiscal Year 2009. The Report is issued under the responsibility of Toshiba Corporation (Toshiba). Bureau Veritas' responsibility is to provide independent verification on environmental performance data based on objective evidence.

Scope of work

Bureau Veritas has visited the following sites and has evaluated environmental performance data for the Report.

Toshiba Principal Office:	Headquarters
Toshiba Fuchu Complex:	Manufacturing of social infrastructure equipment
Toshiba Ome Complex:	Designing and developing of personal computer
Toshiba Mobile Display Ishikawa:	Manufacturing of LCD panel
Kaga Toshiba Electronics Corporation:	Manufacturing of electronic devices
Toshiba Hydro Power (Hangzhou) Co., Ltd:	Manufacturing of hydro power equipment
Toshiba Information Equipment (Philippines), Inc.:	Manufacturing of hard disc drive

Verification Methodology

Bureau Veritas has conducted the evaluation 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 for the reporting period

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

This 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 (ISAE) 3000 (2003) in providing a limited assurance for the scope of work stated herein.

Verification findings

Key findings:
1. No significant error was detected in the environmental performance data on the Report.
2. All errors in reported data identified during the verification process have been duly corrected.
3. Toshiba's systems for the monitoring, collection and aggregation of the environmental performance data is considered to be reliable and appropriately implemented at each of the visited sites.

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.

ORIGINAL PRINTING

Reference View

Bureau Veritas has conducted environmental performance data verification for the "Toshiba Group Environmental Report 2010". The following conclusions are made as a result of the work.

1. Positive Findings

- In all sites visited as part of the verification, the roles and responsibilities for data management were clearly defined, and the competence of representatives was considered to be adequate. In many cases, the data management system was developed based on the principles procedures of ISO14001.
- EXCEL sheets are used for data calculation and aggregation at Toshiba's Head Office, resulting in a low probability of error.
- Data reported from selected sites are reviewed at Head Office to check for reliability and the presence of any abnormal values, reducing the risk of data reporting errors.
- Eco-efficiency indicators of some products are checked in detail through internal audit by Toshiba's Head Office. This approach was seen to be effective at detecting errors.

2. Follow-up of Issues from Reference View report for the "Toshiba Group Environmental Report 2009"

- The result of data verification at Toshiba's Head Office shows a decreasing trend in mistakes of data collection and aggregation over previous reporting periods.
- On-site data verification was carried out at some overseas sites for environmental report 2010 in order to improve the reliability of data.
- Recycling data of end-of-use products of Asian and Australian sites has been aggregated. As those data is limited to Japan, Europe and the United States before, the completeness of data has been improved.

3. Opportunities For Improvement

- EXCEL sheets are used for data calculation in most cases, but data were also to be seen to be calculated manually in certain instances at some of the sites.
- At certain sites, the responsibility for data management is not being effectively transferred to new staff members due to insufficient documentation. As the data aggregation and calculation processes of environmental accounting data are especially complex, it is recommended that the data flow resulting from the calculation and aggregation processes are documented as soon as such tasks are finalized.
- It is recommended that an internal checking mechanism be implemented for the Head Office to detect logistics data omissions, because data omissions are only checked at the companies that collect and aggregate those data of the target sites.

History of Toshiba's Activities

Promoting Organization	FY	Initiatives, activities, and topics
	2010	Announcement of the new concept for environmental management at a business policy briefing
Toshiba Group's Environmental Management Promotion Organization restructured into eight divisions by adding the Corporate Strategic Planning Division, Logistics Planning Office and Advertising Division	2009	Establishment of biodiversity guidelines Environmental Report 2009 received the Environmental Communication Award, etc.
Division restructured into four groups by adding a group in charge of overseas operations	2008	Publication of the Environmental Report 2008 Establishment of new standards for Excellent ECPs and the creation of a new ECP logo Declaration of the turning point in greenhouse gas emissions
Division restructured into three groups: one group in charge of planning, one group in charge of ECPs, and one group in charge of business processes	2007	Formulation of the Environmental Vision 2050
The Asia and Oceania Environment Division newly established	2006	Integration of the conventional Toshiba environmental audit systems to start a new environmental management audit system
The United States Environment Management Division newly established Toshiba Group's Environmental Management Promotion Organization newly established	2005	Publication of the "Factor T" brochure Acquisition of ISO 14001 certification for the Environmental Management Promotion Organization of Toshiba Corporation
Division name changed to the Corporate Environment Management Division The China Environment Management Division newly established	2004	Formulation of the 4th Voluntary Environmental Plan Formulation of Environmental Vision 2010 Publication of CSR Report 2004 Publication of the "Factor T: Introduction" brochure
The EC Environment Management Division newly established	2003	A third-party audit system introduced in environmental accounting
	2002	Achievement of zero waste Introduction of material flow cost accounting
Organization name changed to the Environmental Conservation Promotion Division	2001	Received the Green Award, Global Environment Award, etc.
	2000	Formulation of the 3rd Voluntary Environmental Plan Disclosure of environmental accounting
Organization name changed to the Recycling Promotion Center	1999	Decommissioning of all incinerators
	1998	Publication of the Environmental Report 1998
	1997	Revision of the Basic Rules for Environmental Protection Acquisition of ISO 14001 certification for all factories of Toshiba Corporation
	1996	Formulation of the 2nd Voluntary Environmental Plan
Organization name changed to the Environmental Conservation Center	1995	Establishment of the New Basic Rules for Environmental Protection, began taking steps to acquire an ISO 14001 certificate
	1994	Complete elimination of 1.1.1-trichloroethane
	1993	Formulation of the 1st Voluntary Environmental Plan Complete elimination of specified CFCs used for cleaning Implementation of the Environmental Audit System in Toshiba on the basis of Eco-Responsibility (EASTER)
The Environment Management Committee newly established	1992	
	1991	Establishment of the environmental policy and slogans, product assessment approach and goals for energy saving
	1990	Structural Design Guidelines, limit set on the amount of industrial waste that can be disposed of
An environmental management system implemented in all Toshiba Group companies	1989	Establishment of the Basic Rules for Environmental Management, formulation of the ODS reduction plan, environmental audits
The Environmental Management Center newly established	1988	

Editor's Postscript

In order to become a leading eco company, we at Toshiba Group newly declared that it would promote environmental management in accordance with three Green concepts (Greening of Process, Greening of Products, and Greening by Technology) under its unified global brand "Toshiba eco style." We believe that we have to communicate these initiatives to a wider range of stakeholders in more detail and in an easier-to-understand way. This Environmental Report 2010 includes more substantial descriptions of the Group's efforts to conserve biodiversity and mitigate climate change. In addition, it acquired color universal design certification from the Color Universal Design Organization (CUDO), an NPO in Japan, and its environmental performance data underwent a third-party review by Bureau Veritas Japan Co., Ltd. in order to ensure its reliability and transparency. In the future, we will continue to make every possible effort to help solve global environmental issues. Please let us know what you think about this report.

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

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

The production and printing of this report reflect the following considerations:

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3.9 GREENSTYLE
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Use of Paper Made from Domestic Wood

Under the Kyoto Protocol, Japan set a target of reducing greenhouse gas emissions by 6%, 3.9% (2/3 of the total) of which will be achieved by CO_2 absorption by forests. Active consumption of domestic wood leads to the growth of healthy forests, which will absorb considerable amounts of CO_2. While expressing its gratitude toward forests, Toshiba Group printed this report using paper made from domestic wood to contribute to the future absorption of CO_2 by domestic forests.

Printing

Waterless Printing

This report was printed using waterless printing, a printing process that eliminates the use of water by taking advantage of the characteristics of printing plates made of ink-shedding material.

VOC Free

Non-VOC Ink

100% vegetable ink containing no volatile organic compounds (VOCs) is used.

Color Universal Design

CUD COLOR UNIVERSAL DESIGN

Color Universal Design-certified

We sought to design the Environmental Report using colors and patterns that are easy to distinguish regardless of the differences in color vision among people. Following a monitoring check, the Environmental Report acquired color universal design certification from the Color Universal Design Organization (CUDO), an NPO in Japan.

1st Edition, published in October 2010
Printed in Japan