

TOSHIBA

Leading Innovation >>>

TOSHIBA CORPORATION SEMICONDUCTOR COMPANY

ENVIRONMENTAL REPORT

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TOSHIBA CORPORATION
Semiconductor Company



Editorial policy

The Environmental Report 2008 of Semiconductor Company of Toshiba Corporation presents the results of Semiconductor Company Group's environmental management activities in fiscal 2007.

The editing of this report reflects "the Guidelines for Environmental Report (fiscal 2007 version) of Ministry of Environment, Japan" and "the Guidelines for Environmental accounting (fiscal 2005 version) of Ministry of Environment, Japan"



[Scope of the report]

Reporting period: Fiscal 2007

Although the report focuses on the results of activities in fiscal 2007 (from April 2007 to March 2008), it also includes those ongoing activities prior to and after fiscal 2007.

Organisations covered: In principle, Semiconductor Company Group*

* "Semiconductor Company" or "Toshiba Semiconductor Company" in this report means Semiconductor Company of Toshiba Corporation which is one of the in-house companies of Toshiba Corporation. On the other hand, "Semiconductor Company Group," "Toshiba Semiconductor Company Group," and "Toshiba Semiconductor Group" in this report means Semiconductor Company and its consolidated subsidiaries in Japan and overseas.

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

[Publication]

Current issue: March 2009

Next issue: February 2010

Semiconductor Company Overview (as of 31st March, 2008)

Company name: Toshiba Corporation Semiconductor Company,

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

Number of employees (Consolidated): 28,581

Number of consolidated subsidiaries (in the Group): 39 (18 in Japan, 21 overseas)

Consolidated sales: 1,391,900 million yen

Major products: NAND flash memory, advanced SoC*, power semiconductor, multimedia SoC, CMOS image sensors

*SoC: System on a chip

TOSHIBA CORPORATION
Semiconductor Company

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Message

Toshiba Semiconductor Company Group is actively engaged in the product planning, development, manufacturing and sales of cutting-edge semiconductor products. Our company offers products that are incorporated in electronics, home electric appliances and information control systems. They are used by our customers all over the world and I believe that we contribute to enriching their lifestyles.

There are many environmental issues and their seriousness has increased over recent years. Toshiba Semiconductor Company will support environmental practice under one of the Toshiba Group's management principles, "being a trusted, socially responsible corporate group that respects people, creates abundant value, and contributes to the global community's life and culture," with the focus on the following points.



Promotion of environmental management

As a member of the global community and a good corporate citizen of planet Earth, Toshiba Semiconductor Group considers environmental stewardship to be one of management's primary responsibilities, and we promote environmental activities across our entire staff in harmony with economic activities.

We believe ISO14001 certification is a powerful tool for supporting the aim of harmonizing our environmental activities and our primary business goals, and, we have therefore been working toward step-by-step integration of ISO14001 certification. In August 2008, we acquired integrated certification for the Toshiba Semiconductor Company Group (Semiconductor Company of Toshiba Corporation and 17 sites in Japan). In the future, we aim to acquire integrated certification as a global company including overseas sites.

Furthermore, we will take care to comply with environmental laws and industry guidelines agreed upon by Semiconductor Company, as well as upholding our own standards while implementing, auditing and reviewing environmental activities so as to ensure continuous improvement of environmental management.

Reduction of environmental impact

We have established two pillars to our environmental management program: one is business process-oriented and the other is products-oriented. Although the semiconductor manufacturing business process innately requires the use of power, water and chemicals, we are committed to the reduction of environmental impact and are taking many measures for the reduction of our contribution to global warming, the efficient use of resources, and the control of chemical substances in our business processes. At Yokkaichi Operations, for example, environmental technologies were applied to the construction of new buildings specifically for semiconductor manufacturing, and a mini-environment system was employed to enable drastic energy conservation over traditional buildings.

Every new product at Semiconductor Company Group goes through an environmental assessment starting right from the design development stage. We are also striving to provide products and services that contribute to the reduction of environmental impact throughout the products' lifecycle. Semiconductor products of our group are widely used in many different areas of society, e.g. in hybrid cars, bullet trains and inverters of home electric appliances. We promote green procurement, which enables us to comply with the EU RoHS Directive and other countries' laws and regulations where applicable. Our group places priority on establishing sound control over material composition in our products.

Environmental communication

We aim to establish good communication with our customers and local communities to present our environmental activities and discover their environmental concerns. We carry out this goal through our website, exhibitions for our customers, hands-on sessions on the environment or environmental workshops, site tours in Semiconductor Company Group's factories, participation in an eco-internship sponsored by Japan's Ministry of the Environment, tree-planting events for people in local communities and similar projects.

The entire staff of Semiconductor Company Group endeavor to become better corporate citizens based on Toshiba Semiconductor Company Group's basic attitude toward the environment, as well as to make an effort to maintain and improve the global environment.

I hope you will understand and support our business activities and environmental practices.

Shozo Saito
Toshiba Semiconductor Company President

Foreword

New vision of the ideal situation in 2050

People leading rich lifestyles in harmony with the Earth – this is the ideal situation envisaged in 2050 as per Toshiba Group Environmental Vision 2050. Under this overarching vision, we consider our mission, as a corporate citizen of planet Earth, is to create new, enriched value while minimizing environmental impact.

Environmental Vision 2050.

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



1. Environmental Management

Toshiba Semiconductor Company Group's Environmental Statement of Philosophy

Vision

Recognizing Toshiba Group's vision that the Earth is an irreplaceable asset and it is humankind's duty to hand it on to future generations in a sound state, Toshiba Semiconductor Company Group contributes to the development of a sustainable society by pursuing creation of new values and symbiosis with the Earth.

Policy

Toshiba Semiconductor Company Group considers environmental stewardship to be one of management's primary responsibilities, and promotes environmental activities proactively to reduce the environmental impact in the manufacturing process for semiconductor devices from the design stage in harmony with economic activities.

Toshiba Semiconductor Company Group strives to take the environment into consideration in its business activities such as distribution, sales, services, and disposal, and aims to contribute to society by supplying products that consider environmental impact, and by saving energy in equipment in which semiconductor devices are installed.

1. Compliance and sustainability

1. Toshiba Semiconductor Company Group complies with all applicable laws and regulations, industry guidelines it has endorsed, and its own standards concerning the environment.
2. Toshiba Semiconductor Company Group strives to continuously improve its environmental management system through internal audits and reviews.

2. Execution

Toshiba Semiconductor Company Group strives to assess the environmental aspects of its business activities, set objectives and targets with respect to the reduction of environmental impact and pollution prevention, and execute proactive environmental measures including the following:

1. Integration and unification of its environmental management system in order to achieve thorough compliance;
2. Striving to reduce environmental impact such as global warming by developing and supplying products and services that are evaluated for such impacts;
3. Promoting reduction of our contribution to global warming by implementing energy saving and emission reduction of greenhouse gases on power systems and manufacturing equipment;
4. Contributing to a recycling-based society through efforts to improve productivity, reduce waste generation and water usage relative to productivity, and utilize natural resources effectively;
5. Promoting risk reduction on environmental issues by the control of chemicals in use and reduction of discharge for specified chemicals;
6. Facilitating mutual understanding with stakeholders through information disclosure regarding products, sharing technology from the environmental viewpoint, and collaborating with local communities and society at large;
7. Striving to enhance the awareness of employees with respect to environmental management, and considering the environment in business activities and processes throughout the Toshiba Semiconductor Group.

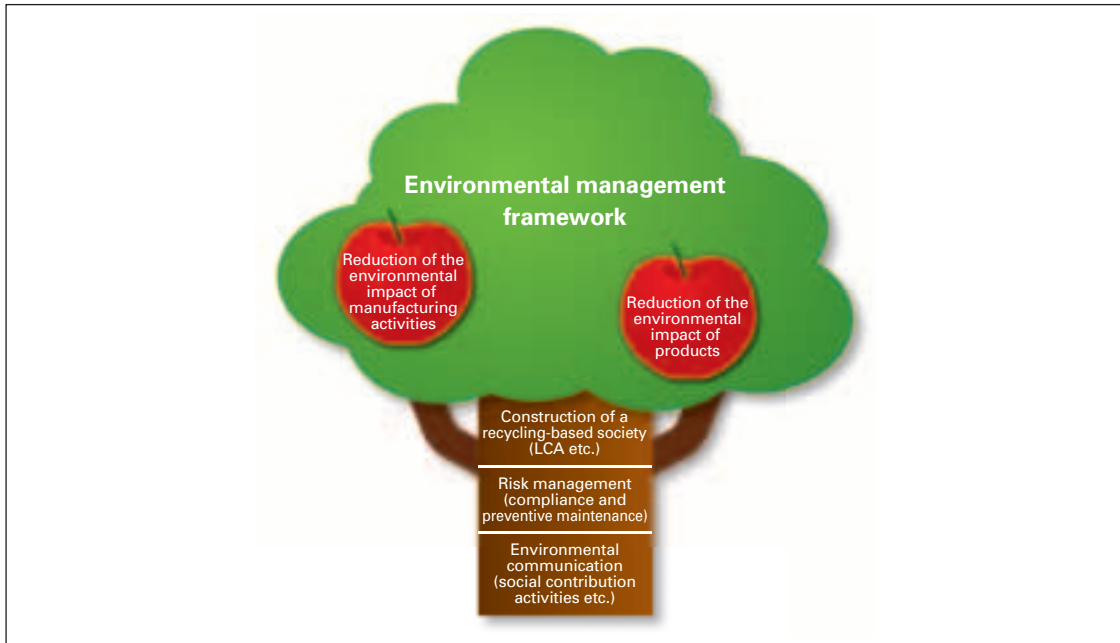
Toshiba Semiconductor Company Group discloses this Environmental Statement of Philosophy to the public, promotes awareness of this Environmental Statement of Philosophy throughout Toshiba Semiconductor Company Group, and promotes its business activities according to this Statement.

Revised on 1st April, 2008

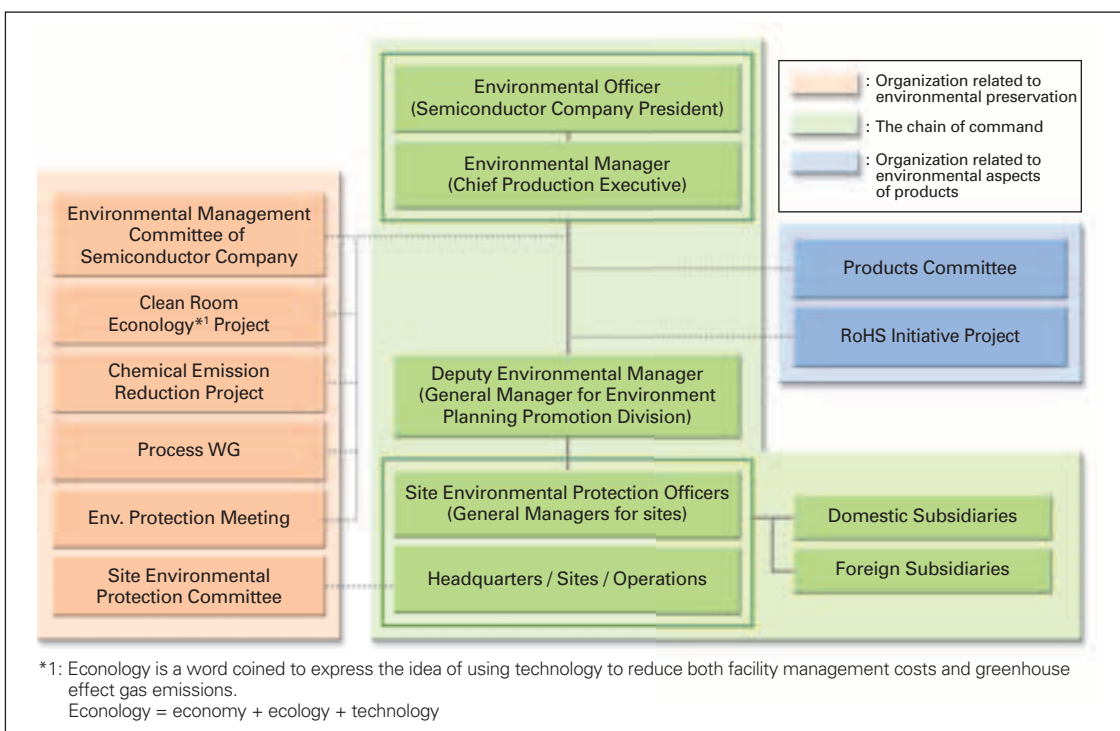
● Environmental Activities of the Toshiba Semiconductor Group

The Toshiba Group has been actively addressing the global environmental issues which are common to the whole human race. With an eye toward the future ideal Earth, we developed the "Environmental Vision 2050" in November 2007. In order to realize it, we extended the period of the previous voluntary plan, added new subjects and upwardly revised the targets of important subjects. Based on the Vision, the Semiconductor Group is going to make efforts to confront environmental issues.

■ Schematic diagram for environmental management of Semiconductor Company Group



■ Environmental Management Promotion Framework by Toshiba Semiconductor Group



■ 4 elements for promotion of environmental management

Like Toshiba Group, the Semiconductor Company Group's environmental management comprises four elements: 1) improvement of the environmental management system, 2) evaluation of certain products for environmental impact, 3) business activities designed to reduce environmental impact and risks, and 4) environmental communication. Under these elements of environmental management, the Semiconductor Company Group has been promoting proactive environmental activities.

■ Environmental Management Committee

The Environmental Management Committee is chaired by the Semiconductor Company's Environmental Officer (the President of Semiconductor Company) and consists of Executives, General Managers for operations, Presidents of domestic manufacturing companies, etc. The committee handles diverse environmental issues, including reporting activities at the business operations, ensuring that employees are aware of the Semiconductor Company's "Environmental Statement of Philosophy" and confirming priority measures.

■ Acquisition of ISO14001 Certification

The Semiconductor Company Head Office and domestic Sales Offices, as well as all domestic and overseas manufacturing sites of the Semiconductor Company Group, obtained ISO14001 certification in 2005 in our continuing effort to coordinate environmental practice and our primary business. The Head Office and the Sales Division promote activities not only to reduce paper consumption, garbage and electricity consumption, but also to connect ISO14001 with the primary business.

Furthermore, we have been preparing to acquire integrated certification for all of the business processes of the Semiconductor Company. In August 2008, we acquired the integrated certification for the Toshiba Semiconductor Company Group (Semiconductor Company of Toshiba Corporation and 17 sites in Japan). In the future, we aim to acquire the integrated certification as a global company including overseas sites.

For details, such as certificate numbers of each site, please see the Data chapter at the end of this document.

■ Compliance with environmental laws and regulations

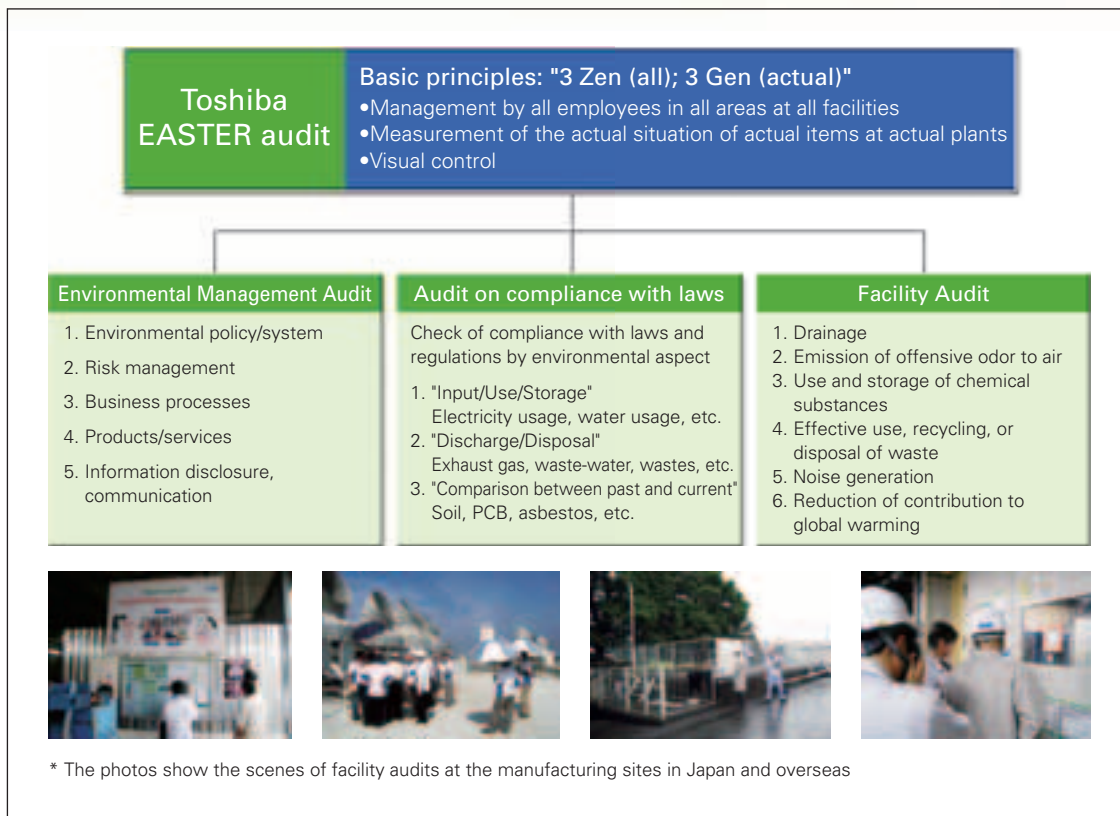
Each site has made efforts to manage environmental protection through the installation of double containment systems for storage tanks and piping for chemical agents, setting appropriate self-control values of gauges, and so forth as applicable for each location. During fiscal 2007, no member of the Semiconductor Company Group was in breach of any law nor subject to any fine or other penalty related to the environment.

■ Implementation of Toshiba Environmental Audit System

Since 1993, the Toshiba Group has been conducting regular environmental audits covering the sites of Toshiba and its Group companies through its proprietary Environmental Audit System (EASTER)*¹ based on the "3 Zen (all) approach," promoting management of all facilities in all areas by all employees, and the "3 Gen (actual) approach," stressing measurement of the actual situation of actual items at actual plants. This audit system has been further revised and refined since its inception, including the addition of "Technology Audit of Products on Environment" to business divisions. In 2006, a number of audit schemes were integrated and the newest Toshiba Environmental Audit System was put in place.

The Semiconductor Company Group also conducts biennial environmental audits at all Japanese manufacturing sites and annual audits at overseas sites to confirm and improve our environmental management systems. Environmental auditing is an important tool to ensure conformance with laws and regulations, and moreover, promotes cooperative activities with local communities and leads to better environmental protection activities.

*1 EASTER: "Environmental Audit System in TOSHIBA on basis of Eco-Responsibility"



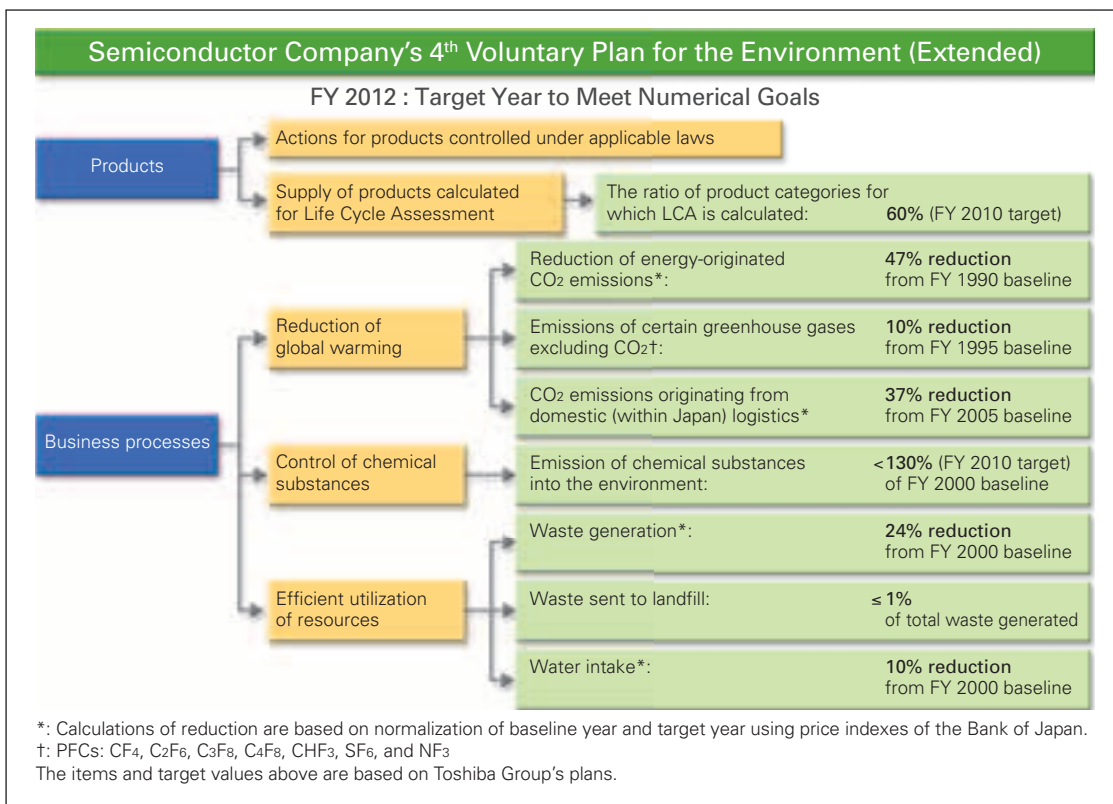
■ Environmental education according to employees' functions and specialties

Semiconductor Company Group uses e-learning software for general environmental education of its employees. For new employees such as engineers, face-to-face education is also provided. At the Operations, environmental education according to employees' positions and functions is provided to raise environmental awareness, deepen job knowledge and improve business performance.

2. Targets and Outcomes

● Fourth Voluntary Plan for the Environment (Extended)

Toshiba Semiconductor Group's Fourth Voluntary Plan for the Environment was established in 2005. The charts below illustrate the Fourth Voluntary Plan's targets for fiscal year 2012, and how we are doing so far.



Results of 4th Voluntary Environmental Plan in 2007

Item	Indicator	Baseline	2007		2012 target
			Result	Evaluation	
Reduction of energy-originated CO ₂ emissions relative to productive output	Emission rate*1	1990	66% reduction	○	47% reduction
Reduction of total emissions of greenhouse effect gases (PFCs excluding CO ₂)	Total emissions	1995	140%	X	10% reduction (CY 2010 target)
Reduction of CO ₂ emissions associated with domestic (within Japan) product logistics relative to productive output	Emission rate*1	2005	34% reduction	○	37% reduction
Emissions of chemical substances into air and water (total amount)	Total emissions	2000	199%	○	130% or less (FY 2010 target)
Reduction in the total amount of waste generated relative to productive output	Rate of the total amount of waste generated*1	2000	44% reduction	○	24% reduction
Waste sent to landfill	Final disposal rate*2	-	0.09%	○	1% or less

○: achieved 2007 target, x: not achieved (Except for CO₂ emissions associated with product logistics and greenhouse effect gas, the results from overseas manufacturing sites are included)

*1: Rates used as indicators are based on net output (i.e., CO₂ emitted or waste generated per unit of production).
 Net output = [Nominal output in Japan] ÷ [Corporate goods price index (for electrical equipment) announced by Bank of Japan:
 Ratio of each year based on the index in 1990 as 1] + [Nominal output at sites outside of Japan]

*2: A "final disposal rate of 1% or less" means that the amount of waste sent to landfill after treatment is equivalent to 1% or less of the total amount of byproducts and other items generated (total amount of waste discharged) as a result of business activities.

● Evaluation of Achievement State of 4th Voluntary Environmental Plan

Toshiba Semiconductor Group substantially exceeded its goals in 2007 for the reduction of energy-originated CO₂ emissions and surpassed its objectives for the reduction of CO₂ emissions associated with product logistics, but just missed its 2007 target for reduction of total emissions of PFC greenhouse gases excluding CO₂. The Semiconductor Group met its 2007 goal for total emissions of chemical substances, with the help of a new project targeting the reduction of these emissions. We will continue our efforts to reduce emissions of greenhouse gases and other chemical substances through a variety of measures.

Toshiba Semiconductor Group improved upon its target for net output reduction in the total amount of waste generated by its facilities. In addition, of the total amount of waste generated by the Group, including foreign manufacturing subsidiaries, only 0.1% was sent to landfill after recycling and treatment in 2007, which surpassed the target of 1% or less. The Semiconductor Group will continue to strive to reduce the generation of waste and the amount of waste sent to landfills.

3. Environmental Accounting

Toshiba Semiconductor Group has introduced an environmental accounting tool to support its environmental management efforts.

Environmental accounting calculates the costs to the Toshiba Semiconductor Group attributable to environmental management. Environmental accounting also estimates the actual and assumed economic benefits brought about by reduction in the amounts of waste disposal, energy consumption, air pollutants, and similar matters.

Classification of environmental protection costs and the calculation criteria are in accordance with the "Environmental Accounting Guidelines 2005" issued by Japan's Ministry of Environment. The benefits are calculated based upon quantitative data of environmental impact reduction benefits to deduce monetary value.

The environmental accounting costs and benefits shown below cover the Semiconductor Company Group for fiscal 2007.

1. Environmental protection costs

The environmental protection costs in 2007 were 22.1 billion yen. Most of the costs were associated with the Group's efforts toward prevention of air, water and soil pollution, reduction of contribution to global warming, recovery and recycling, and research and development.

(Unit: million yen)

Classification	Content	FY 2007			FY 2008	
		Investment	Costs	Change* in costs from previous year	Budget for Investment	Budget for costs
Costs for manufacturing process						
Break down	Pollution prevention cost	8,873	13,794	2,626	6,230	13,014
	Global environmental protection cost	1,777	2,027	137	761	1,509
	Recovery and recycling costs	358	1,911	203	271	2,207
Subtotal		11,008	17,732	2,966	7,262	16,730
Costs for business for upstream/downstream	Green procurement, recycling, etc.	8	396	△12	0	496
Management activity costs	Environmental education, maintenance of EMS, planning of greenery at factories, etc.	153	1,480	102	2	1,506
Research & development costs	Development of products that considers environmental impact, etc.	65	2,315	△1,323	66	2,081
Social activity costs	Support of local environmental activities, contributions, etc.	0	14	1	0	9
Environmental remediation costs	Recovery from pollution, etc.	6	125	19	0	180
Total		11,241	22,061	1,752	7,331	21,001

*: △ reduced compared to fiscal 2006, no mark: increased

2. Environmental protection effects

The environmental protection effect was calculated at 2,700 million yen, which showed a 200 million yen increase compared with the previous year, as a result of some measures like the reduction in sulfur oxides (SOx) because of the change of boiler fuel from heavy oil to liquefied natural gas (LNG).

(Unit: million yen)

Classification	Content	Benefits
Actual benefits*1	Benefits that can be directly converted into monetary value, such as reduced charges for electricity, water, etc.	1,798
Assumed benefits*2	Benefits concerning reduction in environmental impacts expressed in monetary value	929
Risk prevention benefits*3	The extent to which risks are reduced after the investment compared with before the investment is calculated	22
Total		2,749

Basis for calculation

*1: Total of the monetary value of the reductions in electricity charges, costs of waste disposal, etc. compared with the previous year and the proceeds from sale of items with value

*2: Monetary values were calculated by giving each substance, calculated in terms of cadmium, a weighting based on environmental standards and ACGIH-TLV (allowable concentration of each substance (Threshold Limit Values) as determined by the American Conference of Governmental Industrial Hygienists) and multiplying the result by the amount of compensation in the case of cadmium pollution. Reduction in environmental impact on atmosphere, water and soil is indicated quantitatively and the environmental impact reduction volumes are compared with the previous year's results, and also reduction of environmental impact is calculated in terms of monetary value to enable comparison of various calculations of environmental impact on the same basis.

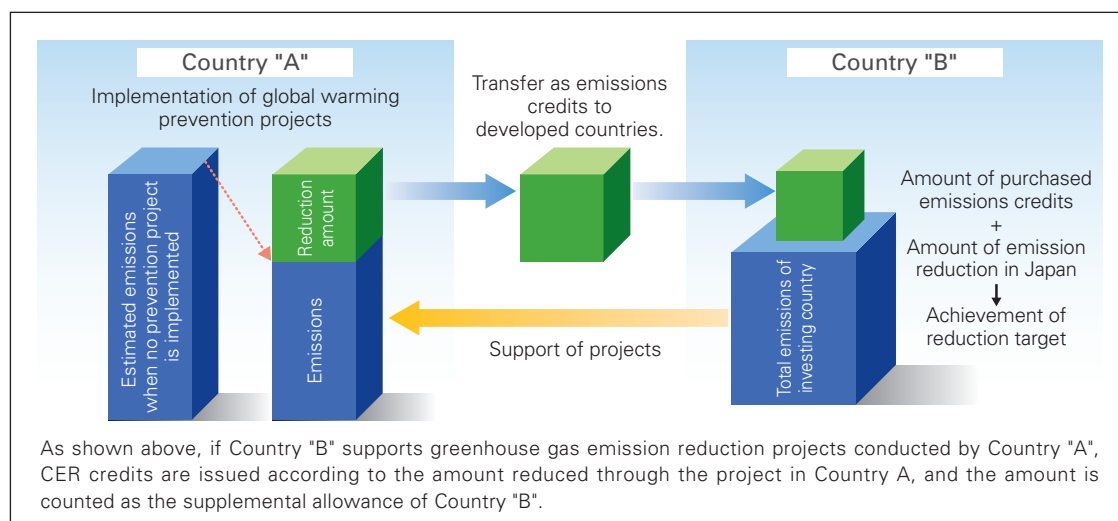
*3: Benefits of investment in environmental structures or double containment such as dikes and double piping, for the purpose of preventing pollution of soil and groundwater, are evaluated as benefits to prevent risks that might otherwise occur in the future. Risk prevention benefits for each capital investment item are calculated according to the following formula:

Risk prevention benefits = Quantity of chemical substances stored x Standard amount (monetary value) required for remediation and restoration x Impact coefficient x Occurrence coefficient, where the standard amount required for remediation and restoration and the occurrence coefficient are values unique to Toshiba. Risk of occurrence of leakage of chemical substances etc. is evaluated.

Based on the above results, we are going to make efforts to improve the environmental management hereafter.

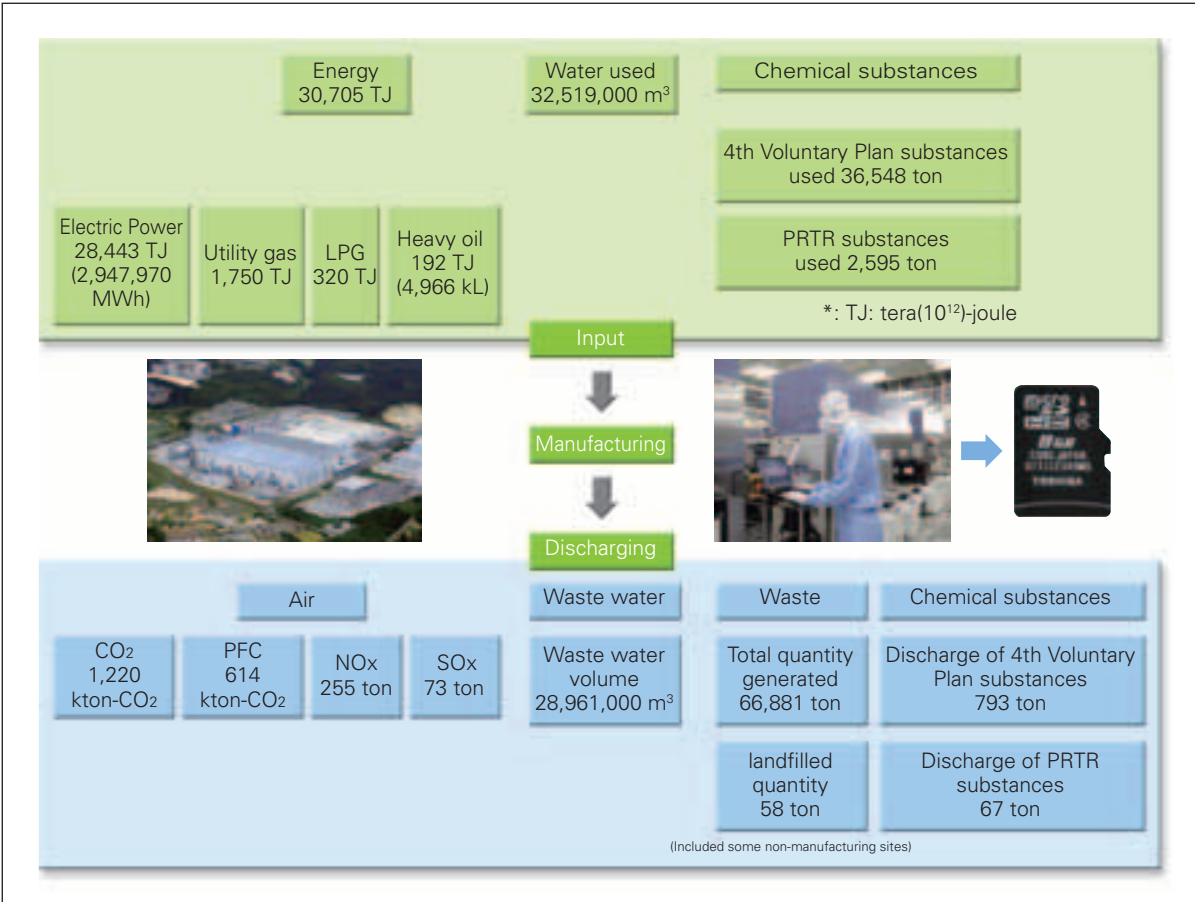
3. Participation in greenhouse gas reduction investment projects and emission credit program

Since 2005, Semiconductor Company of Toshiba Corporation has participated in the Clean Development Mechanism (CDM), which was set up under the Kyoto Protocol to allow investments to be made for projects that reduce emissions in developing countries, in return for certified emission reduction (CER) credits. This mechanism complements activities to reduce greenhouse gas emissions in one's own country. The (promissory) amount of investment which Semiconductor Company puts in the Japan Greenhouse Gas Reduction Fund which manages projects is expected to be a cumulative total of about US\$ 3 million. Semiconductor Company expects to receive a total of about 300 thousands tons of CO₂ emission equivalents in credits by 2013.



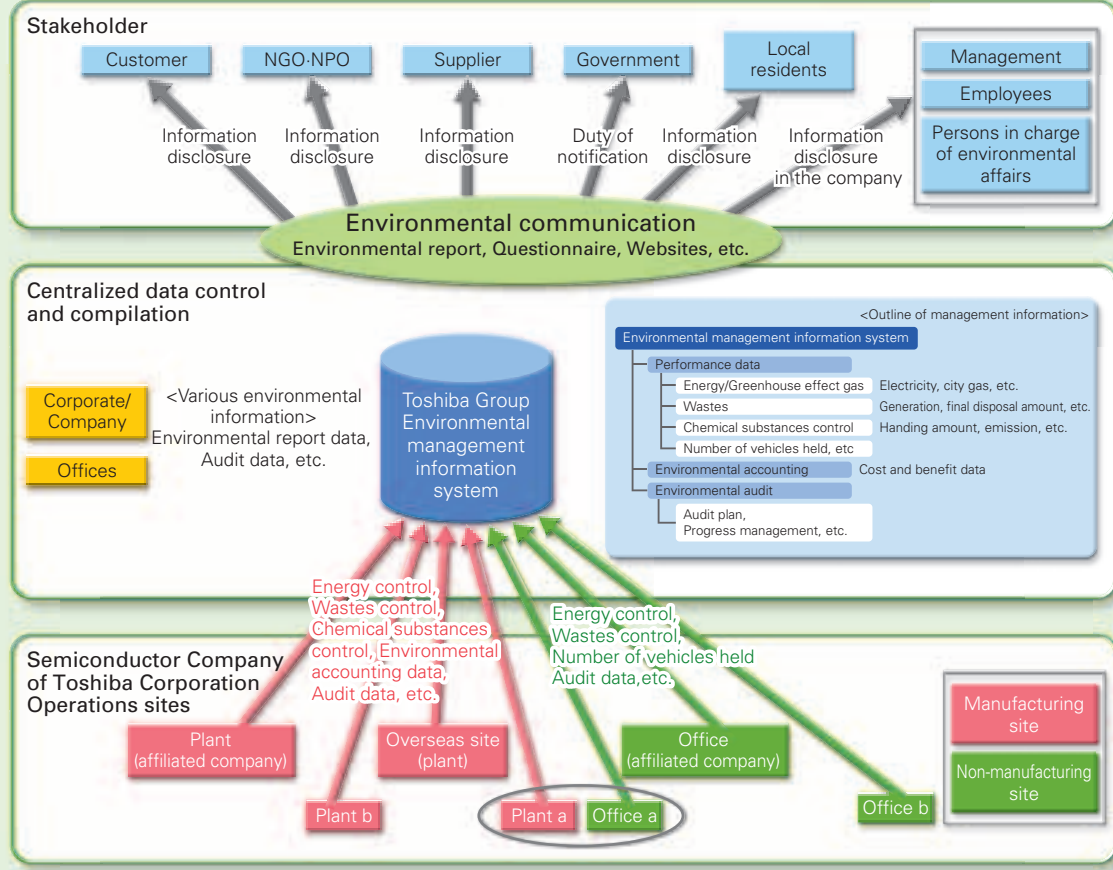
4. Current Status of Environmental Impact

Semiconductor Company Group strives to improve our environmental efficiency by analyzing our impact on the environment utilizing the environmental management information system. The status of Semiconductor Company Group's environmental impact in 2007 is described below. Please see chapter 6 "Reduction of Environmental Impact of Business Activities" regarding some of our specific initiatives currently ongoing in our efforts to reduce the impact of our business activities on the environment.



Data Collection and Utilization

The environmental management information system is the system that centralizes various environmental performance data in the whole Toshiba Group. As shown below, data of energy, wastes, chemical substances, etc. are collected from the sites, managed and provided to stakeholders and interested divisions in the company through the websites and the environmental report.



5. Reduction of Environmental Impact of Products

Semiconductor products are high-performance small devices that are used in a wide range of applications, including electronics, consumer electric appliances, cars, and industrial equipment, all contributing both to people's livelihood and industries.

From the perspective of environmental consideration, smaller and lighter semiconductor products with lower power consumption, made from substances with lower environmental impact, are desirable.

Here, we would like to show you typical activities we do to reduce the environmental impact of our semiconductor products.

■ Environmental consideration at design and development stage

It is important to take environmental impact into consideration at the product design and development stages. The Semiconductor Company Group conducts the product environment assessment as described in the box below. We check data of chemical substances contained in new raw materials and products as well as product basic specifications to comply with various countries' regulations on restriction of the use of certain hazardous substances in electrical and electronic equipment such as the EU RoHS Directive.

Environmental consideration at the design and development stage

1. The environmental impact of new materials, processes, and equipment, as well as the impact of new technological development, is taken into account at the time of introduction.
2. The environmental impact of products is assessed at the design/development phase of each new class of products that includes assessment of chemical substances contained in products.



In performing its impact assessments, Semiconductor Group aims to promote;

- The selection of materials that do not contain prohibited substances,
- Process technology development, design, and development of semiconductor products with less environmental impact than existing Toshiba semiconductor products

■ Controlled Substances

In consideration of the regulations, directives, and Toshiba policies cited below, Semiconductor Company controls the procurement of forty-nine (49) prohibited substances and twenty-four (24) restricted substances (together, "Controlled Substances") in its manufacturing processes and in the material content of its products.

Toshiba Semiconductor Group's approach regarding the Controlled Substances

1. Laws, regulations, company rules etc. were considered. Some of them are;

- Japanese laws and regulations:
 - Law concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures,
 - Law concerning the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
 - Industrial Safety and Health Law,
 - Law on Prohibition of Chemical Weapons and Regulation, etc., of Special Chemicals,
 - The law concerning reporting, etc. of the release to the environment of specific chemical substances and promoting improvement in their management
- Laws and regulations outside Japan: "RoHS"-type regulations enacted in several countries/regions, WEEE Directive of EU, ELV Directive of EU, REACH, etc.
- Customers' requests and JGPSSI specified substances
- Toshiba's regulated substances: substances related to Toshiba green procurement for semiconductor products, Toshiba Semiconductor Company's controlled substances

RoHS:

DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

WEEE:

DIRECTIVE 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on waste electrical and electronic equipment

ELV:

DIRECTIVE 2000/53/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 September 2000 on end-of life vehicles

JGPSSI:

Japan Green Procurement Survey Standardization Initiative

REACH:

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

2. Concerned regulations in future

- EuP Directive.
- Other regulations will be taken into account as applicable.

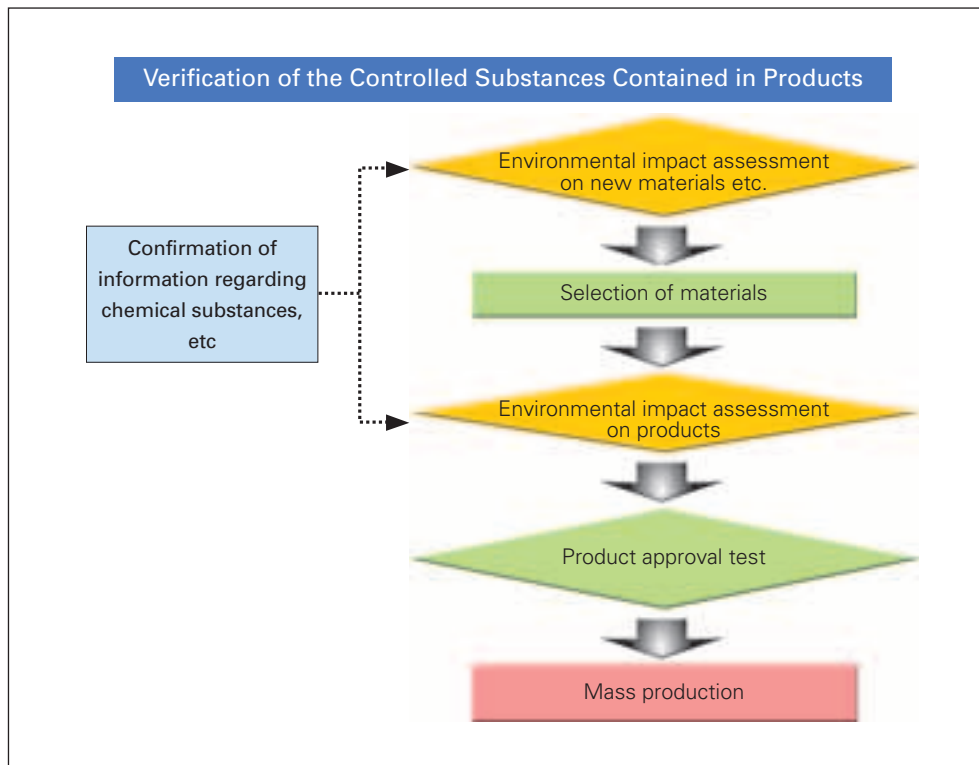
EuP:

DIRECTIVE 2005/32/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 July 2005 establishing a framework for the setting of ecodesign requirements for energy-using products and amending Council Directive 92/42/EEC and Directives 96/57/EC and 2000/55/EC of the European Parliament and of the Council

■ Control of chemical substances in products

Regulations controlling chemical substances in products will soon be promulgated in many countries, to the extent they are not already in place. In addition to the EU RoHS Directive, ELV Directive and Packaging and Packaging Waste Directive, the so-called "China RoHS" regulation went into effect in China in March 2007, which requires the labeling of several substances, and which, in future phases will restrict or prohibit certain substances. In Korea, regulations somewhat resembling the EU RoHS and ELV Directives went into effect in July 2008. Similar regulations concerning the control of chemical substances continue to be promulgated and enforced in many countries. Furthermore, the EU is now enforcing the regulation called REACH, which is a new framework for chemical substances control.

Semiconductor products are used in an extremely wide range of applications, such as in electrical/electronic equipment, control systems and cars. Hence, the control of chemical substances is an important factor for product quality assurance. Toshiba Semiconductor Company Group has designated its Controlled Substances in order to control their content in products. We are also endeavoring to replace restricted substances with lower environmental impact alternatives.

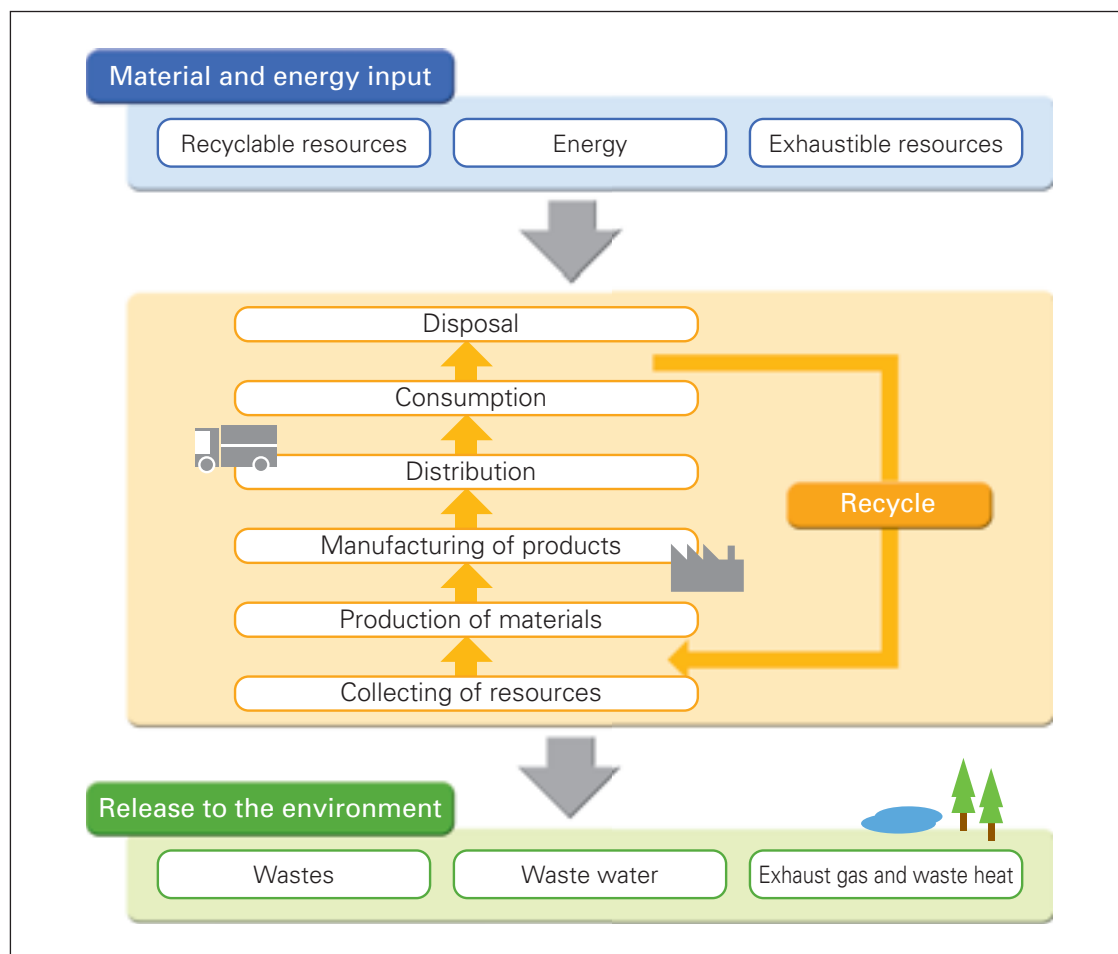


■ Understanding the environmental impact of products (LCA calculation and analysis)

Life Cycle Assessment (LCA) is a method of evaluating the material and energy input in a series of processes such as collecting of resources for product materials, production of materials, manufacturing of products, transportation, distribution and disposal and the release of substances that impact the environment. (See the chart below.)

Using various kinds of analysis tools, Semiconductor Company of Toshiba Corporation calculated the LCA for 65 product categories by FY 2007. The assessment results have been used for various surveys and analyses on the environmental impact of our semiconductor products.

We are endeavouring to expand sales ratio of semiconductor products categories which have been completed calculation of Life Cycle Assessment (LCA).



As shown above, LCA is a tool to evaluate the amount of materials and energy input and emissions of the environmental loading substances in the product lifecycle.

■ Green Procurement Initiatives

As explained before, in line with the establishment and enforcement of environmental laws and regulations such as the EU RoHS Directive, more and more semiconductor customers, such as electrical and electronic equipment manufacturers and car manufacturers, request the non-use of restricted substances or the strict control of such substances. Taking into consideration customers' requests, Toshiba Semiconductor Company has developed its green procurement guidelines to cooperate with its suppliers in selecting procured items that have lower environmental impact.

Considering many kinds of materials, chemicals and components are used during the manufacturing process of semiconductor products, the Controlled Substances must be carefully managed. Toshiba Semiconductor Company Group seeks its suppliers' cooperation in complying with its procurement guidelines.

■ Green Procurement Guidelines by Toshiba Semiconductor Group

Toshiba Semiconductor Company established the green procurement guidelines in September 2004 (revised in February 2008) to support our green procurement initiatives.

Toshiba's suppliers are required to supply materials according to the guidelines, which set forth Toshiba's chemical and substance restrictions and prohibitions for procured goods, as well as information and materials about management system.

The guidelines also require detailed reporting of each restricted substance for matrix materials or components, appended with the format of the Certificate regarding the Controlled Substances, or RoHS Controlled Substances.

■ Reduction of Semiconductor Products' Contribution to Global Warming

Two ways that companies can reduce the contribution that semiconductor products make to global warming are to (1) reduce the power consumption of semiconductor products; and (2) improve the energy efficiency (thus reducing carbon dioxide emissions) of equipment and systems containing semiconductor products.

(1) Lower power consumption of semiconductor products

The development of the low-voltage operation and processing of system LSI and a variety of EDA (electronic design automation) tools create power savings over previous designs.

For example, multi-core processors are used to perform data processing with lower power consumption through distributed processing.

(2) Energy saving equipment and systems.

- Semiconductors are used in a wide variety of energy-saving applications, including insulated gate bipolar transistors (IGBT), used for inverters of motors for bullet trains and standard trains, driving and control invertors for hybrid cars, high-efficiency power semiconductor devices, inverters of home electrical appliances.

- Light-emitting diodes (LEDs) are used to create longer-lived, smaller-scale devices compared with existing systems. LEDs are used in more and more applications such as traffic signals, brake lights for cars, and various kinds of light sources which contribute to power saving of the light source.

■ Environmental efforts related to physical distribution and packaging materials

In order to promote environmental management from the viewpoint of a business enterprise providing products, the Semiconductor Company Group takes various measures to reduce the environmental impact not only in the manufacturing stage but also in the packaging and physical distribution phases.

(1) Environmental efforts related to physical distribution

Pursuant to Japan's Law Concerning the Rational Use of Energy, revised in April 2006, Semiconductor Company has been taking various reduction measures in the physical distribution of both products and waste. The table below shows the actual achievements in the Semiconductor Company Group (in Japan). As compared to 2006, our total transportation volume in 2007 increased because of the increase in production, but CO₂ emissions per production unit was significantly reduced.

	FY 2006	FY 2007
Total logistical volume in the Semiconductor Company Group (Unit: ton-kilometer*)	22 million	25 million
CO ₂ emissions associated with logistics (Unit: ton)	7,400	7,500
Improvement rate of CO ₂ emission reduction with reference to FY 2005 (per production unit)	91%	72%

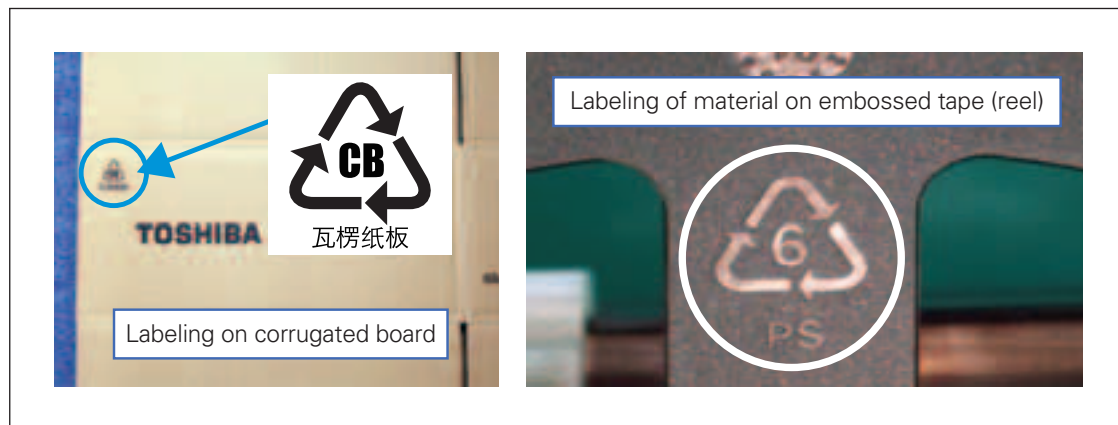
* The above values indicate the achievements in inter-production physical distribution (transportation of semi-finished products between production sites), physical distribution of products (product shipment and transportation) and physical distribution of wastes (transportation of wastes to disposers) in Japan.

"Improvement rate of CO₂ emissions with reference to FY 2005" indicates the ratio of CO₂ emissions associated with transportation per unit of output normalized by deflator each year compared with FY2005, expressed as a percentage. (Baseline FY 2005: 100%)

(2) Environmental efforts related to packaging materials

Semiconductor Company has promoted use of substitutes for PVC (polyvinyl chloride) according to customer requests, and use of substitutes for cobalt chloride to comply with the 67/548/EEC (2004/73/EC Amendment) To comply with the EU waste regulation and the REACH regulation, we have created an internal database of chemical substances contained in packaging materials.

Furthermore, to comply with the first phase of the so-called "China RoHS" regulations, appropriate labeling on outer packaging boxes is provided as shown below.



In addition, we have been actively promoting the reduction-reuse-recycling (3R) of packaging material according to the 3R promotion measures as mentioned below.

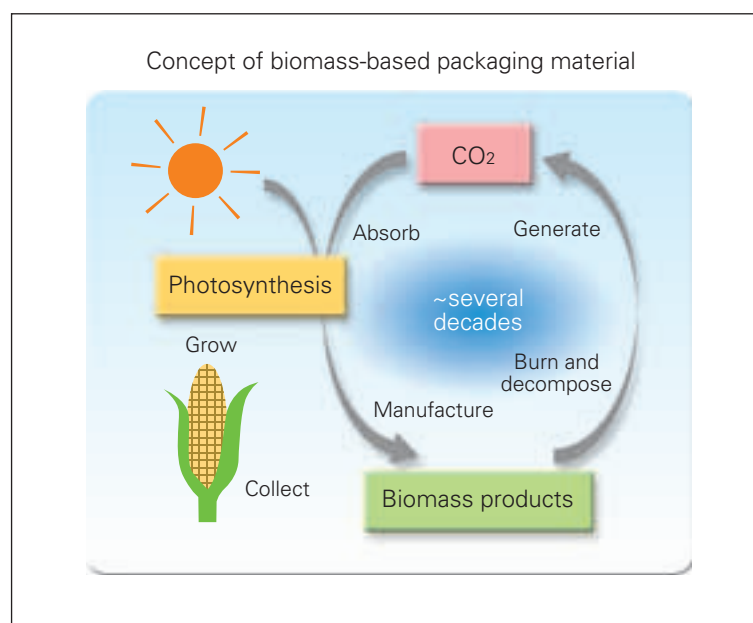
We have also developed packaging materials made of plant-based plastic, and now we are studying use of extracts of corn and seaweed.

3R promotion measures

Reuse: Reuse (→ Hard tray)

Reduce: Reduction of corrugated board by using returnable boxes (→Interior and exterior packaging boxes)

Recycle: Development of packaging materials using used polystyrene (PS) materials (from cups, etc) (→Reel)



6. Reduction of Environmental Impact of Business Activities

Semiconductor manufacturing inherently requires large amounts of chemicals, energy, and resources such as water. Toshiba Semiconductor Group's activities to reduce the environmental impact of business activities are presented below from the three aspects of reduction of our contribution to global warming, control of chemical substances and effective use of resources.

■ Global warming

1. Reduction of CO₂ emission (energy-saving)

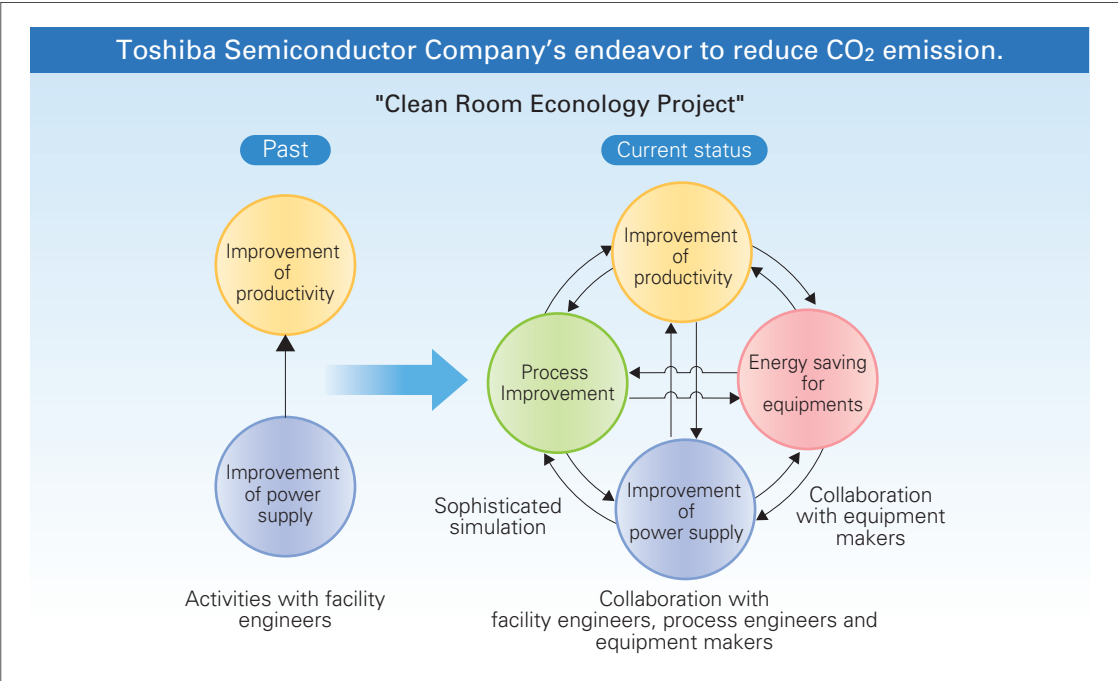
Our goal is to reduce CO₂ emissions by 47% (per production output normalized by deflator*¹) in 2012, compared to the baseline 1990 emissions. We hope to both achieve this target and work toward further reduction.

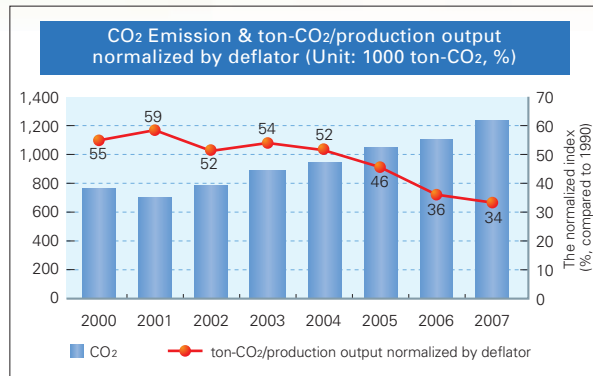
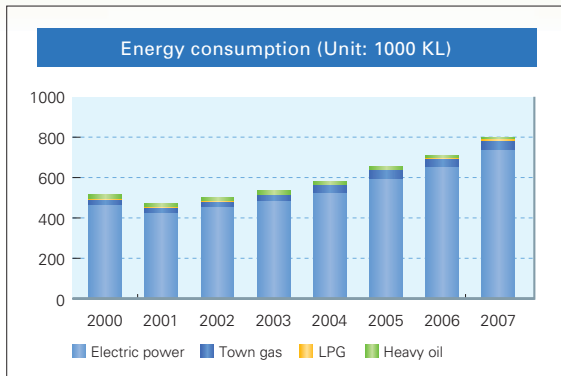
The Clean Room Econology Project*² was set up in 2004 to reduce CO₂ emissions. The project promotes not only conventional energy saving in power systems or plants, but also, with the cooperation of production engineers, energy saving in our manufacturing processes and equipment.

*1: "Deflator" means the ratio of price indexes of the Bank of Japan for baseline year of fiscal 1990 and target year.

*2: Econology is a word coined to express the idea of using technology to reduce both facility management costs and greenhouse effect gas emissions.

Econology = economy + ecology + technology



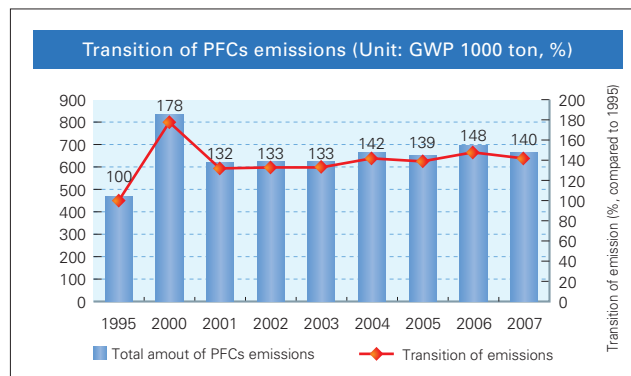


(The above data includes manufacturing sites both in Japan and worldwide, as well as certain non-manufacturing sites in Japan and world wide.)

2. Reduction of emission of gases thought to contribute to the greenhouse effect (PFCs)

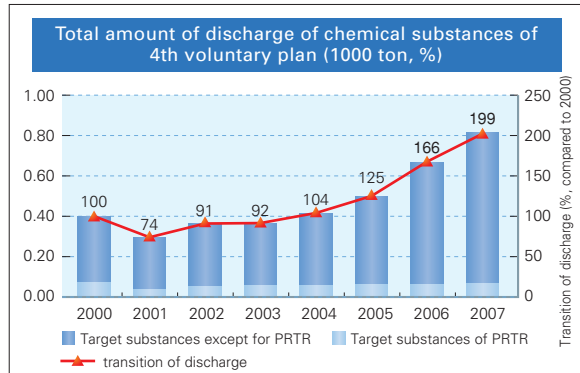
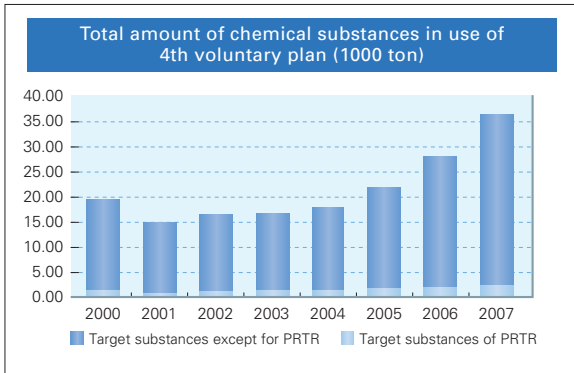
PFCs (Perfluoro compounds) include tetrafluoromethane (CF₄), hexafluoroethane (C₂F₆), octafluoropropane (C₃F₈), octafluorocyclobutane (C₄F₈), trifluoromethane (CHF₃), and sulfur hexafluoride (SF₆). In addition to these six kinds of gases, the World Semiconductor Council specifies nitrogen trifluoride (NF₃) as another target substance to be reduced. In line with the World Semiconductor Council's recommendations, Toshiba Semiconductor Company aims to reduce the total emission, not one normalized by production output, of those seven substances by 2010 to 90% of the total in baseline 1995 (10% reduction).

In support of this goal, we have been implementing measures such as the adoption of substitute gases and installation of abatement systems.



■ Control of chemical substances

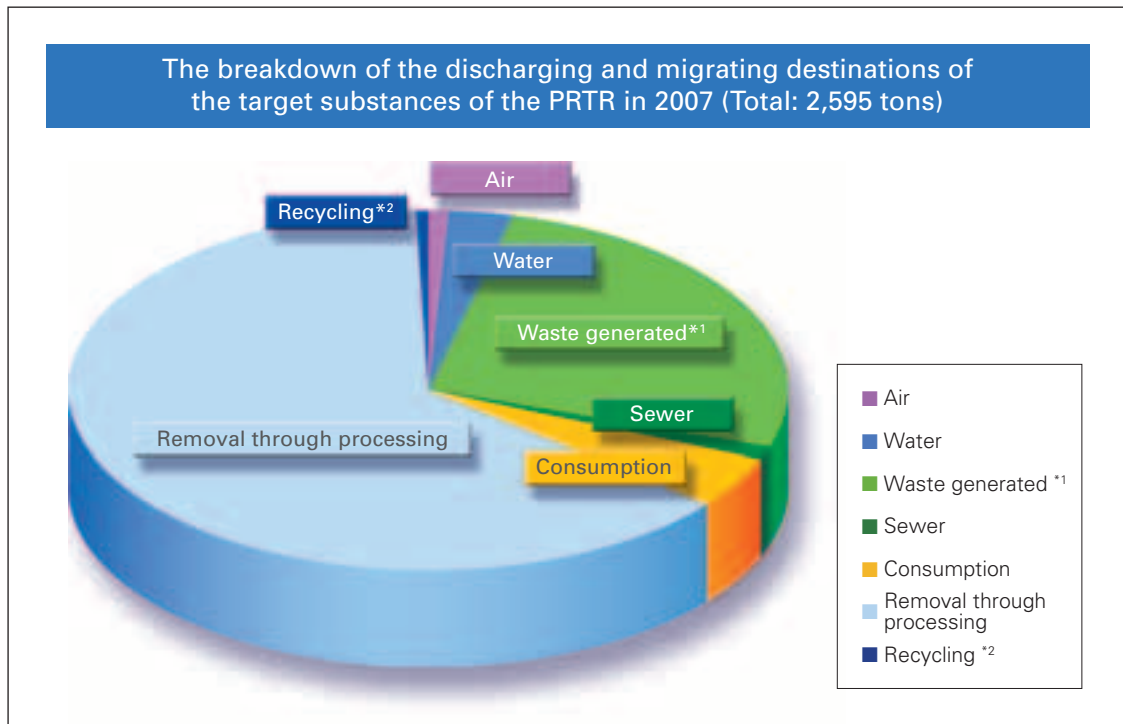
Another Semiconductor Company goal is to reduce the total emission or discharge into air and water of 60 targeted chemical substance groups in 2010 to 130% or less of the baseline year 2000. As production increases, so does the amounts of chemical substances used. It is not easy to reduce emissions, but in 2006, we set up a chemical substance emission reduction project to promote the activities further. We have been targeting both removal of emissions from air and water and prevention of emissions at the sources through reduction, substitution of chemicals, process changes, and so forth.



(The above data cover manufacturing sites both in Japan and worldwide.)
 PRTR: Pollutant Release and Transfer Register / JAPAN

The breakdown of the discharging and migrating destinations of the target substances of the PRTR in 2007 is as shown below.

Most substances are treated and removed through processing and most wastes are recycled. We will continue to strive to reduce emissions and discharge to air and water.



(The above data cover manufacturing sites both in Japan and worldwide.)

*1: 99% of the amounts listed as "Waste generated" in this chart are recycled, with Semiconductor Group paying charges to recycling providers for this service.

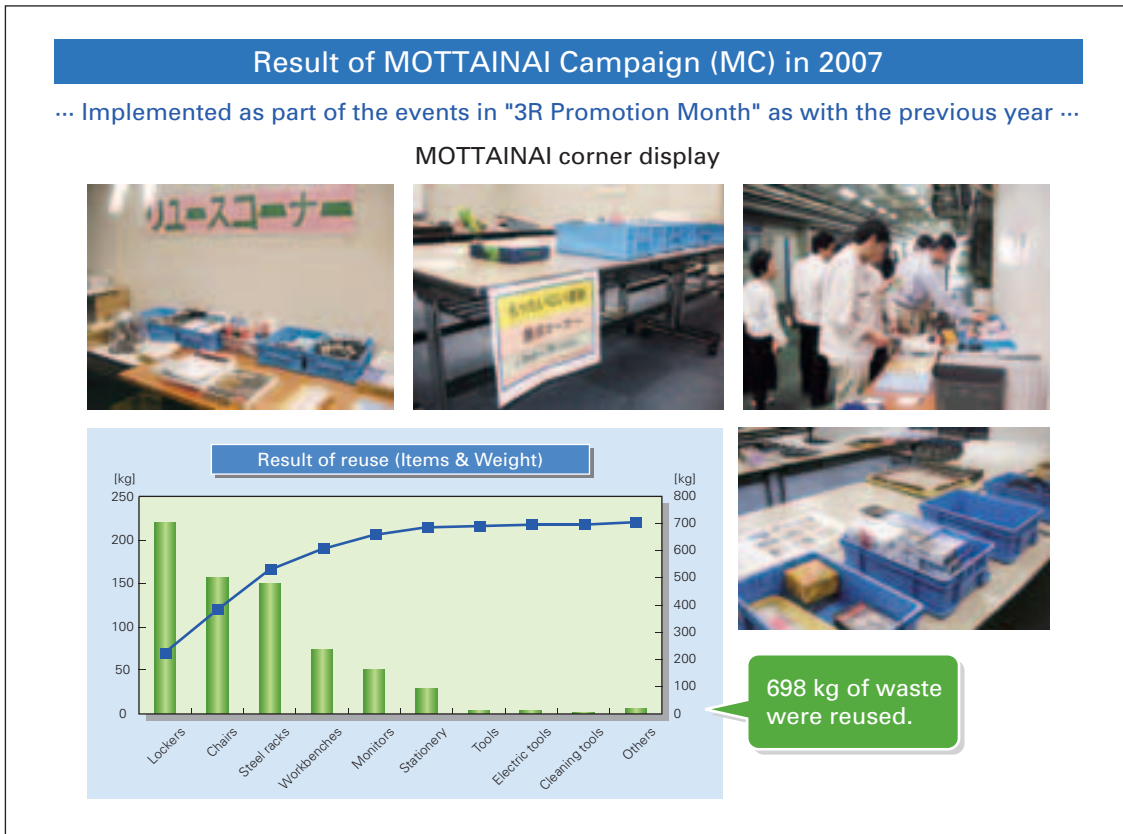
*2: "Recycling" indicates that Semiconductor Group was able to recycle and sell this percentage of waste solvents, which is thus differentiated from "Waste generated".

■ Efficient use of resources

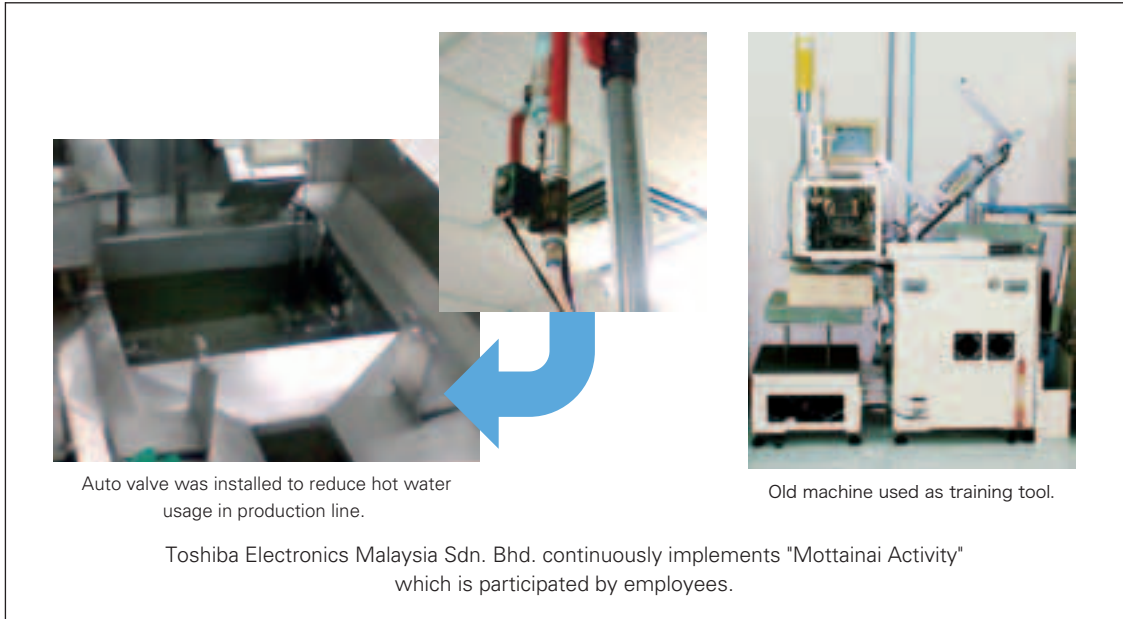
<MOTTAINAI Campaign>

"MOTTAINAI" is a Japanese phrase that can be roughly translated as "What a waste!" At some business operations sites of the Semiconductor Company, the "MOTTAINAI Campaign" is conducted to reuse rather than discard stationary supplies/resources.

Examples at Microelectronics Center (MC for short) and Toshiba Electronics Malaysia Sdn. Bhd. are introduced below.



Microelectronics Center (Japan)



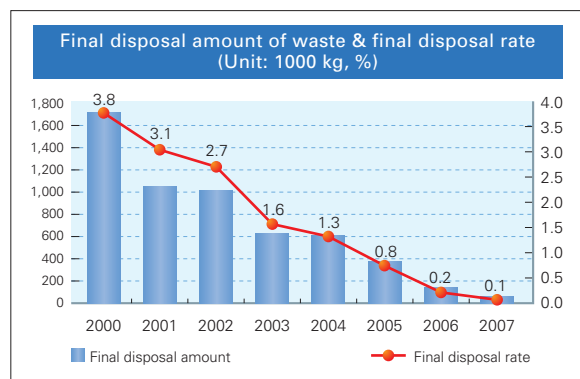
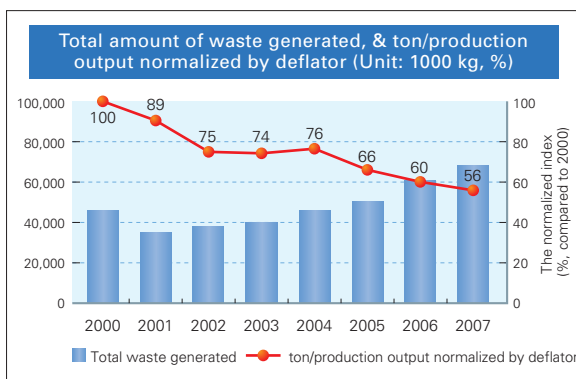
Toshiba Electronics Malaysia Sdn. Bhd.

1. Achievement of reduction of the total amount of waste generated in normalized rate

Our target was to reduce the total amount of waste generated in 2012 by 24% (per unit of production output normalized by deflator) compared to the baseline 2000. In 2007, we reached this goal five years ahead of schedule by improving manufacturing methods, including measures such as reduction of the frequency of change of chemical agents, and now plan to maintain or improve this reduction through 2012.

2. Achievement of "waste sent to landfill of 1% by weight or less"*1

At the domestic manufacturing sites, calculated collectively, the goal of "waste sent to landfill of 1% by weight or less" has been achieved since fiscal 2001. At the domestic and the overseas manufacturing sites, calculated collectively, the goal of "waste sent to landfill of 1% by weight or less" has also been achieved since 2005. In fiscal 2007, each and every manufacturing site, calculated collectively and individually, achieved "waste sent to landfill of 1% by weight or less".

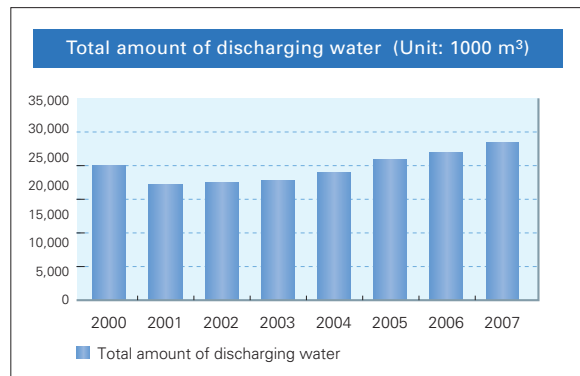
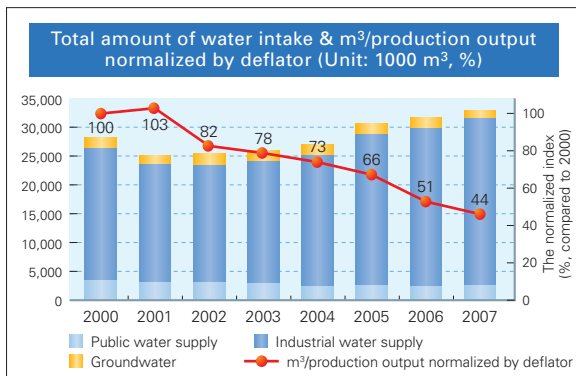


*1: The Toshiba Group's definition of "Waste sent to landfill of 1% by weight or less" is as follows; Quantity of waste for landfill after treatment is equivalent to 1% by weight or less of the total quantity of by-products and other waste items generated (total amount of waste generated as a result of manufacturing activities.)

3. Usage of water

A large amount of water is used in manufacturing semiconductors. We regard water as an important resource and try to reduce the usage of water in consideration of regional conditions.

Semiconductor Company Group also promotes water recycling, and the total amount of recycled water in FY 2007 totalled more than 9,200 thousand cubic meters (m³).

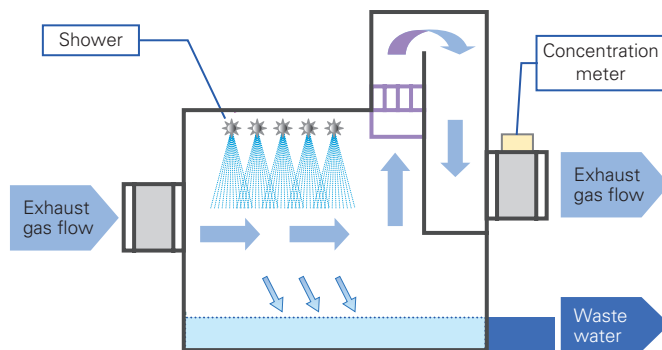


Upcoming environmental technologies

Examples of environmental impact reduction measures:

Semiconductor Company has been taking various measures to reduce environmental impact. The high efficiency IPA*¹ (isopropyl alcohol) abatement system and the PFCs*² abatement system that drastically reduces effluent discharge, which we plan to introduce, are explained below.

IPA abatement system



High efficiency IPA (isopropyl alcohol) abatement system

Semiconductor Company of Toshiba Corporation and Dainippon Screen Mfg. Co., Ltd. jointly developed the equipment to abate approximately 75% of IPA (isopropyl alcohol) released from the wafer cleaning device into the air through volatilization in the cleaning process of the semiconductor manufacturing line. Currently, IPA is abated through outdoor abatement systems installed outside the manufacturing line. This new jointly

developed equipment can significantly reduce the concentration of IPA contained in the exhaust gas by efficiently collecting only IPA vapors from the exhaust gas and dissolving them in the waste water in the exhaust gas and waste water separation box which can be installed in the wafer cleaning device. IPA dissolved in the waste water can be detoxified through biological degradation treatment at waste water treatment plants. We plan to introduce this equipment at Yokkaichi Operations and Oita Operations of Toshiba Corporation.

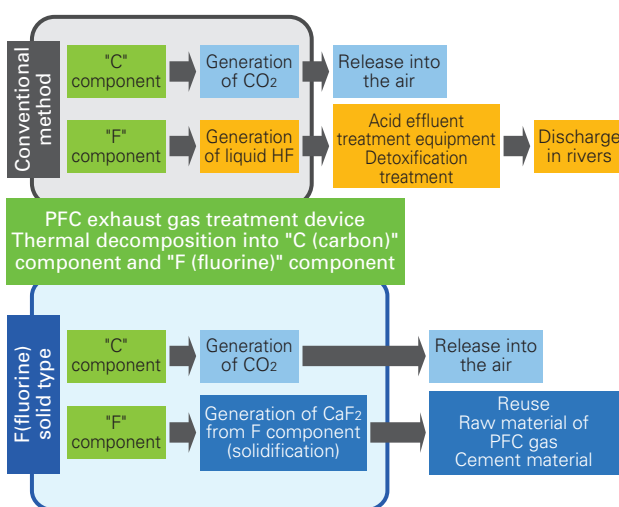
PFC gas abatement system that reduces effluent discharge

In the semiconductor manufacturing process, PFCs are exhausted in micro-patterning by dry etching. PFCs have a greenhouse effect which is several thousand times larger than CO₂. Therefore, Semiconductor Company has been making active efforts to reduce the PFCs emissions.

The conventional exhaust gas abatement system removes PFCs by dissolving the fluorides decomposed from PFCs in water. There was still a need to reduce acid effluent containing fluorides in order to reduce the

environmental impact. The dry-type exhaust gas abatement system we have decided to introduce not only has the PFCs decomposition performance equivalent to or better than that of the conventional equipment, but also it can remove the fluorides by solidifying it as calcium fluoride (CaF₂) through chemical reaction. As a result, water is not used in the abatement of PFCs, and the amount of acid effluent can be significantly reduced.

We plan to introduce the equipment at the fourth building in Yokkaichi Operations in FY 2008. It can be expected that approximately 900m³/day, which is about 80% of the total acid effluent discharged when the fourth building is in full operation, can be reduced.



*1: IPA is one of volatile organic compounds and an agent for cleaning or drying of Si wafers in the manufacturing process. It is required to reduce the emission amount.

*2: Here, PFCs (Perfluoro compounds) mean gases such as CF₄, C₂F₆ which are used in etching or CVD (chemical vapour deposition) processes for manufacturing semiconductor devices. PFCs have green house effect, which are required to reduce emission amount under Kyoto Protocol.

7. Contribution to the Society, Collaboration Activities and Dialogues with Local Community

The manufacturing sites of the Semiconductor Company Group have been expanding activities for collaboration with local communities and social contributions while working for environment preservation.

Activities at Japanese sites (Oita Operations, Yokkaichi Operations, and some other sites) and overseas manufacturing sites (Toshiba Semiconductor (Thailand) Co., Ltd., Toshiba Electronics Malaysia Sdn. Bhd., and Toshiba Semiconductor (Wuxi) Co., Ltd.) are presented below.

The Oita Operations has promoted creative activities, which include offering lessons at elementary and middle schools to provide an experience-based environment course for children in the community. The local subsidiary in Thailand has conducted activities such as collecting of pull-tops of aluminum cans to donate to the artificial limb association, tree-planting, and environmental education to elementary school pupils. The local subsidiary in Malaysia has arranged tree-planting ceremonies, provided enlightening education for elementary and middle school students, and social collaboration activities called Gotong-Royong*. The local subsidiary in Wuxi, China, has also arranged tree-planting ceremonies, provided enlightening education for students, conducted cleaning activities and participated in various events at industrial sites. As mentioned above, various activities have been conducted proactively at each site.

*: Gotong-Royong: Social activities by local residents such as cleaning and tree-planting at the neighborhood, aid for construction of houses for underprivileged people and relief of earthquake victims.

1. Oita Operations

By implementing CSR activities, we communicate with people in local communities as well as children who are our future leaders.

1) Lessons at elementary schools (October, November and January in fiscal 2007)

In order to have elementary and middle school children who will lead the future in their understanding of the importance of environmental preservation, we visited the local elementary and middle schools to provide experience-based environment classes. The children enjoyed the experience-based lessons, including hands-on experiments and reproduction of phenomena that cannot be seen in ordinary life.



2) Collection of disposable chopsticks and aluminum cans (full year)

We collect disposable chopsticks used by employees at offices and wash and dry them at the operations. The collected chopsticks are provided to paper manufacturing companies at no charge, where they are used to make paper. 1000 yen per ton of the collected chopsticks is donated to certain environmental preservation support organizations recommended by the United Nations.

Aluminum cans are collected from not only offices but also households on a regular basis. The collected aluminum cans are sold to dealers, and the proceeds are donated to the local Satoyama^(*) development organization, where the donated money is used for tree-planting and the Satoyama (land management and conservation) development fund.



(*) Satoyama: border area among mountains and villages mostly used for agriculture and forestry.

3) Summer festival (August)

Twenty thousand local residents joined the summer festival held at the Oita Operations. The environmental preservation activities of the Oita Operations were introduced in a quiz style, and to persons who gave the right answer, environmental goods were given.

In order to prevent generation of garbage at the festival, we promoted participation in eco-events on the main stage and conducted the "No need for a bag" campaign to stop over-packaging at snack stands.



2. Yokkaichi Operations



Environment liaison meeting with the local community association.



Environmental report and opinion exchange meeting with the students of Mie University.



(*) Practical training in the Eco-Internship program by the Ministry of the Environment.



Clean-up activity of roads around the plant.

(*) The Eco-Internship program sponsored by Japan's Ministry of the Environment aims to "develop human resources who can work with consideration given to the environment", and in the program, students can gain experience with corporate environmental management. In 2007, we accepted two students, who experienced various practical training sessions on environment conservation activities conducted at the Headquarters and Yokkaichi Operations.

3. Various environmental activities at the sites in Japan



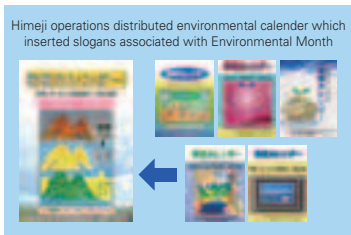
Hands-on experience with handheld generator at the "Children Eco-club Festival in Kitakyushu".



Meeting of Kitakami Eco-Network which Iwate Toshiba Electronics Co., Ltd. joins.



Tree planting by the "Ishikawa Morizukuri (forestation)" association, in which Kaga Toshiba Electronics Corporation joins.



Himeji operations distributed environmental calendar which inserted slogans associated with Environmental Month

Environmental calendar issued by Himeji Operations.



Environmental education for elementary school children at Toshiba LSI Package Solutions Corporation.



Environmental education for elementary school children at Toshiba Components Co., Ltd.

4. Toshiba Semiconductor (Thailand) Co., Ltd.



EASTER implementation was introduced in the Thai environmental engineering magazine EAT.



Donate used clothes to foundation for rural youth.



Stop global warming campaign.



Reusable cloth bag made by Toshiba Semiconductor (Thailand).



Tree planting, 2000 trees planted in 8000 m²



Mr. & Ms Environment contest held in Toshiba Semiconductor (Thailand).



Environmental awareness education for pupils.

5. Toshiba Electronics Malaysia Sdn. Bhd.



Toshiba Electronics Malaysia and Nippon Express (Malaysia) launched CSR program to provide some facilities for primary school.



The primary school students welcome the visitor with their cultural performance.



Discussion with the management of waste contractor.



Site audit at the waste treatment facility.



One scene of the Gotong-Royong activity.



Surrounding area was cleaned up during the Gotong-Royong activity.

Gotong-Royong: social activities by local residents such as cleaning and tree planting at the neighborhood, aid for construction of houses and relief of earthquake victims.



Toshiba Electronics Malaysia visited rehabilitation center for disabled children. At this event, 2 units of wheel chairs were contributed to center.



6. Toshiba Semiconductor (Wuxi) Co., Ltd.



Exchange meeting with the government sector.



China Environment Conference.



Regular cleaning activity around the company.



Inspection visit in the Environmental Month.



Field check at the waste disposal site.



Environmental facility inspection tour by students.



Mountain climbing environment conservation activity.

■ Communication with customers

Through participation in various seminars and in exhibitions such as CEATEC (Combined Exhibition of Advanced Technologies-Providing Image, Information and Communications), Eco-Products Exhibition, we promote active communication with customers.



Environmental exhibition at the CEATEC, Eco-Products Exhibition

■ Environmental public relations and advertisement

As with the previous year, we introduced the environmental activities of Semiconductor Company in 2007 through placing advertisements and granting interviews to newspapers and professional journals.



Source: Semiconductor Industry Paper, September 12, 2007



Source: Dempa Shimbun (News Paper) March 5, 2008



Source: Nikkei Monozukuri July 2008



Advertisement relating water recycling

8. Data

In August 2008, we acquired the integrated ISO 14001 certification for the Toshiba Semiconductor Company Group (Semiconductor Company of Toshiba Corporation and 17 sites in Japan). In the future, we plan to acquire integrated ISO 14001 certification as a global company including overseas sites.

Name of the organization	Certified body	Registration date	Approval certificate No.
Toshiba Corporation Semiconductor Company	JACO	1996.02.02	EC98J2014
Toshiba Corporation Semiconductor Company Head Office and Sales Divisions			
Toshiba Corporation Yokkaichi Operations			
Toshiba Corporation Kitakyushu Operations			
Toshiba Corporation Oita Operations			
Toshiba Corporation Microelectronics Center			
Toshiba Corporation Himeji Operations-Semiconductor			
Iwate Toshiba Electronics Co., Ltd.			
Buzen Toshiba Electronics Corporation			
Toshiba LSI Package Solutions Corporation (Headquarters, Fukuoka Operation, Oita Operation)			
Hamaoka Toshiba Electronics Corporation			
Himeji Toshiba E.P. Corporation			
Toshiba Components Co., Ltd.			
Kaga Toshiba Electronics Company			
Toshiba Device Corporation			
MT Device Corporation			
Device Link, Inc.			
Toshiba Discrete Semiconductor Technology Corporation			
Toshiba Electronics Malaysia Sdn. Bhd.	SIRIM	1997.09.26	T0066301097
Toshiba Semiconductor (Thailand) Co., Ltd.	TISI	1998.09.25	98011/0015
Toshiba Semiconductor (Wuxi) Co., Ltd.	China Certification Center, Inc	1999.03.31	02103E10061R1

■ If you have any inquiries, please contact us at the following web-site.

<http://www.semicon.toshiba.co.jp/eng/index.html>

ENVIRONMENTAL REPORT

2008

- The original texts of laws and regulations, including but not limited to the EU RoHS Directive (Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment), should be consulted for a full understanding of legal requirements. Environmental laws and regulations may be revised at any time, so users should take care to remain informed. The information contained herein is intended to be informative but carries no legal authority and does not constitute legal advice.
- Toshiba Semiconductor Group reserves the right to revise the content of this Environmental Report without notice.
- The information contained herein is subject to change without notice.

TOSHIBA CORPORATION
Semiconductor Company
Website: <http://www.semicon.toshiba.co.jp/eng>