

TOSHIBA CORPORATION SEMICONDUCTOR COMPANY
ENVIRONMENTAL REPORT

2 0 1 0



Editorial policy

The Environmental Report 2010 of the Semiconductor Company of Toshiba Corporation presents the results of the Semiconductor Company Group's environmental management activities in fiscal 2009.

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

[Scope of the report]

Reporting period: Fiscal 2009

Although the report focuses on the results of activities in fiscal 2009, it also includes those ongoing activities prior to and after fiscal 2009.

Organizations covered:

* "Semiconductor Company" or "Toshiba Semiconductor Company" in this report means the Semiconductor Company of Toshiba Corporation which is one of the in-house companies of Toshiba Corporation. Meanwhile, "Semiconductor Company Group," "Toshiba Semiconductor Company Group," and "Toshiba Semiconductor Group" in this report mean 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.

New Flare Technology, Inc. and Nagasaki Semiconductor Manufacturing Co. Ltd. have been added to the organizations covered in the environmental report as members of the Toshiba Semiconductor Group from this fiscal year.

[Publication]

Current issue: December 2010

Next issue: December 2011

Semiconductor Company Overview

(as of 31st March, 2010)

Company name:

Toshiba Corporation Semiconductor Company,

Address:

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

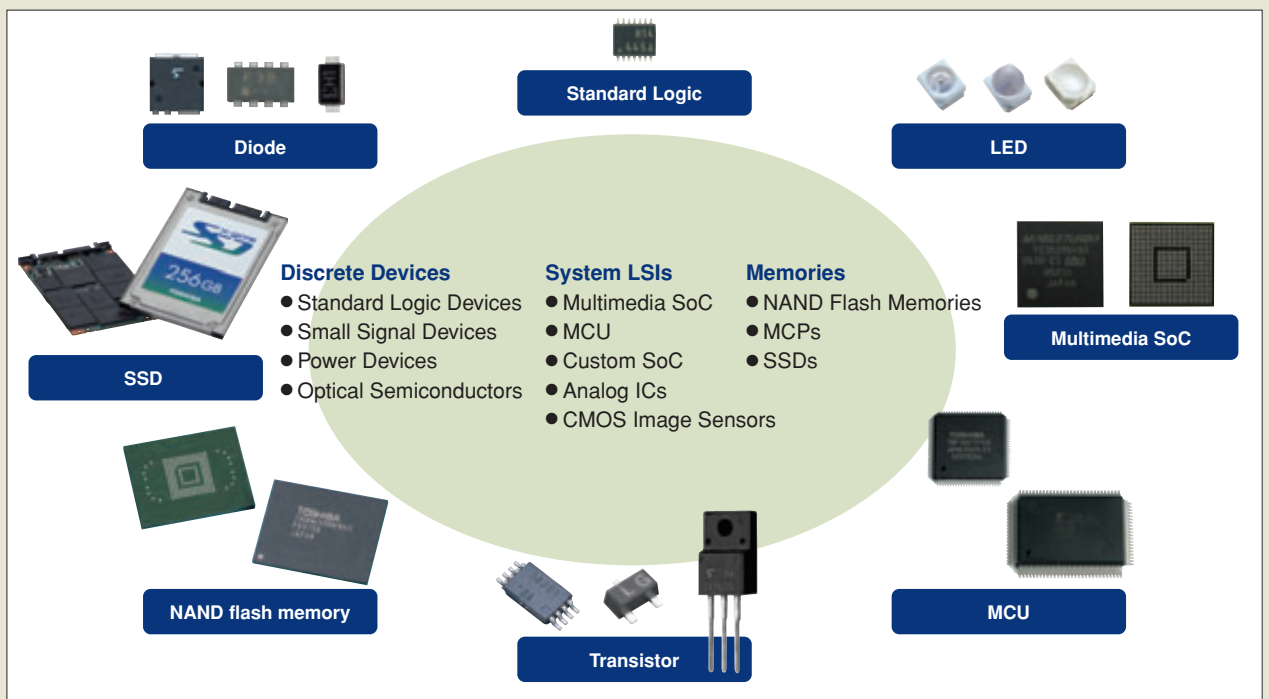
Number of employees (Consolidated): 26,000

Number of consolidated subsidiaries (in the Group):

37 (17 in Japan, 20 overseas)

Consolidated sales: 1,070,000 million yen

Semiconductor Company's major products categories



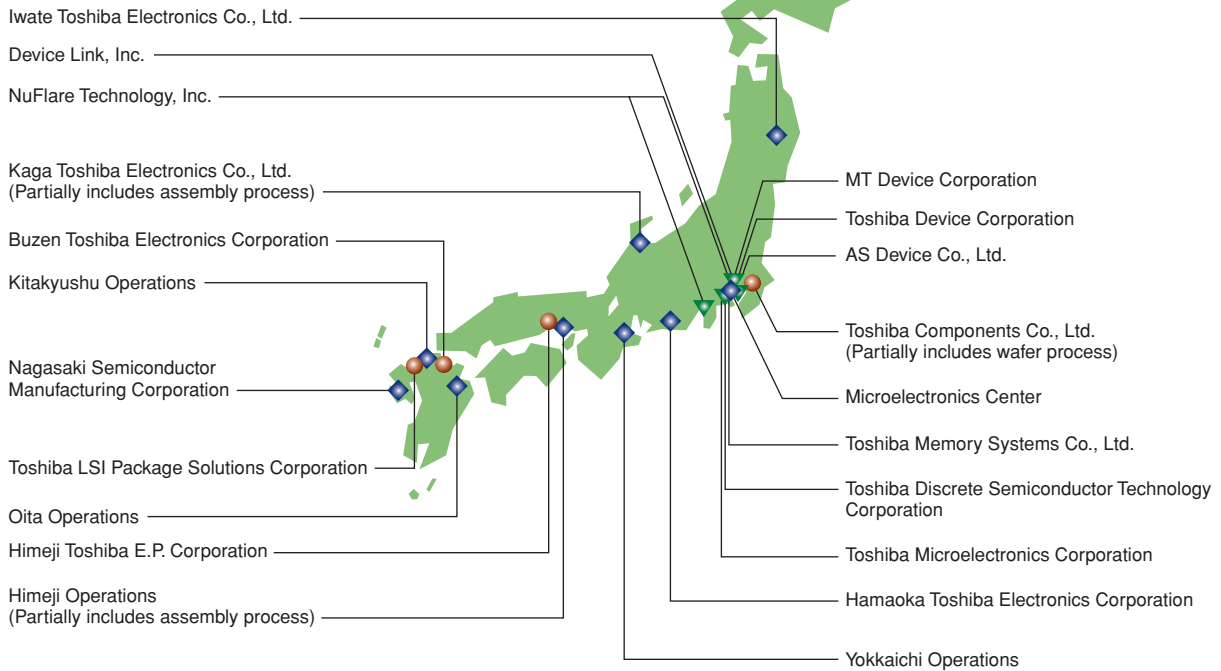
Major manufacturing sites, and affiliated companies

◆ Wafer Process Plants /Institutes

● Assembly and Testing Process Plants

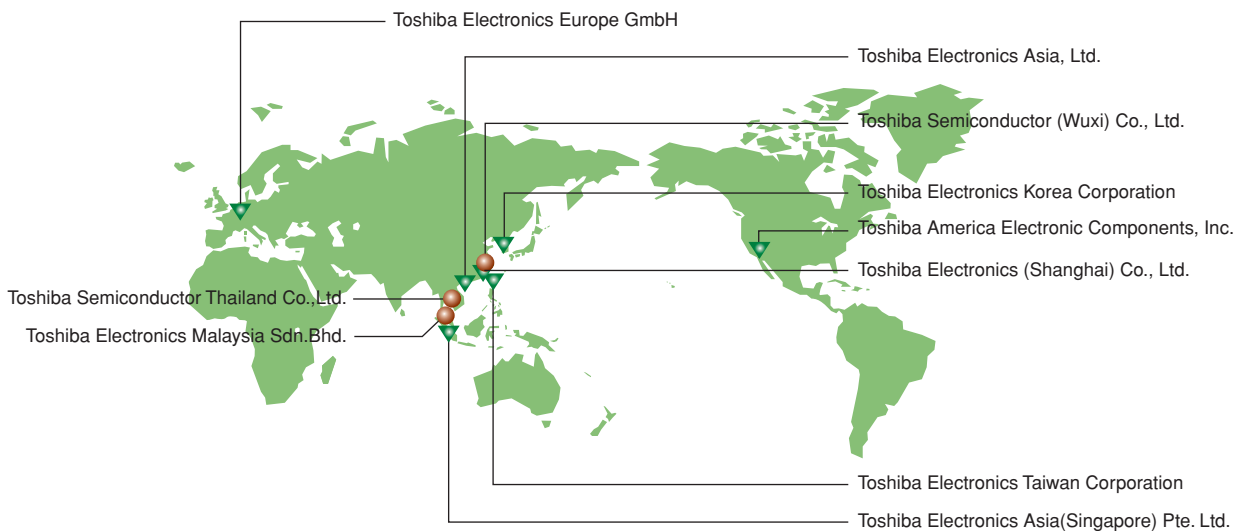
▼ Other Divisions /Design Center, Sales, etc

Wafer Process: Fabricates integrated circuits on silicon wafers.
 Assembly and Testing Process: Seals IC chips into various packages and ships following inspection.



● Assembly and Testing Process Plants

▼ Major Overseas Sales Offices



CONTENTS	3
Message	4
Foreword	5
1. Environmental Management	6
• Statement of Environmental Philosophy of Toshiba Semiconductor Company Group	
• Environmental Management System	
• Environmental Management Committee	
• Acquisition of ISO 14001 Certification	
• Compliance with Laws and Risk Management	
• Implementation of Environmental Audit at Toshiba Group	
• Environmental training According to Employees' Job Functions and Specialties	
2. Current Status of Environmental Impact	11
3. Targets and Outcomes	13
4. Environmental Accounting	15
• Environmental Protection Costs	
• Environmental Protection Benefits	
5. Reduction of Environmental Impact of Products	16
• Understanding the Environmental Impact of Products (LCA calculation)	
• Environmental Focus on Products Design and Engineering Stages	
• Promoting Green Procurement Initiatives	
• Further Environmental Consideration in Physical Distribution	
6. Reduction of Environmental Impact of Business Activities	25
• Energy Conservation Measures for CO ₂ Reduction	
• Various Activities to Reduce Greenhouse Gases including PFCs	
• Activities Aiming to Reduce Chemical Substance Discharges	
• Waste sent to landfill less than 0.5% has been achieved at all manufacturing sites including overseas sites	
• Efficient Use of Finite Water Resources	
7. Environmental Communication	35
• Environmental Communication Activities Developed and Carried Out at Factories in Japan	
• Initiatives for Protecting Natural Environment and Biodiversity	
• Participation in Environmental Exhibition	
• Environmental Public Relations and Advertisement	
8. Data and Third Party's Opinion	40

We will contribute to the future of a sustainable Earth through innovation.

Semiconductor products of the Toshiba Semiconductor Company Group are employed across a broad range of applications from TVs, cell phones, PCs and other familiar products to Shinkansen (super express trains), power reception/substation facilities and other social infrastructure fields. These products combined with various applications, improved social infrastructure and the birth of new services have made our lives convenient and bountiful.

While we enjoy convenient and bountiful lives, we also need to pay attention to the changes in mother Earth. As globalization of the economy rapidly advances, the environmental impact stemming from human activities has exceeded the sustainable limit of the environment on Earth and caused worldwide climate changes evident in phenomena such as global warming, exhaustion of resources and other serious issues today.



Our semiconductor products are widely used in society and there can be no business activities without awareness of those environmental issues.

Aiming to be a “corporate citizen of planet Earth”, the Toshiba Group has identified the concept of “rich lives of the human race in harmony with the Earth” as the “ideal” to be realized by 2050 and to this end has adopted the “Toshiba Group Environmental Vision 2050”.

The Toshiba Semiconductor Company Group plans to reduce the impact of its business activities on the environment, create new, plentiful values and contribute to the sustainable future of the Earth by pursuing innovation.

We will endeavor to work toward preserving the environment in the two areas of products and manufacturing

Efforts for preservation of the environment are essential in realizing a sustainable society. The Semiconductor Company Group aims to reduce our impact on the environment throughout the lifecycle of our products, including designing products that require less power to operate than earlier generations and conserving energy at our manufacturing sites .

For example, information devices have become widely adopted throughout society in recent years. The volume of information has increased drastically, and opportunities to use memory media are also increasing. Our memory products represented by SSD (solid state drive) will contribute to improving the efficiency of the information infrastructure by producing smaller equipment and pursuing energy conservation.

Furthermore, we expect the rapid onset on a global scale of a smart grid (next generation power transmission network) with communication functions, automobiles with significantly improved fuel efficiency and home appliances controlled by an inverter in order to bring about a low carbon society in the near future. We believe our power semiconductors, system LSI (large scale integration) products, and other semiconductor products will substantially contribute to advancement of the latest environmental technologies mentioned above.

On the other hand, it is necessary to consume a large volume of electric power, chemical substances, water and other resources throughout semiconductor manufacturing processes. Our entire group is endeavoring to make our processes more efficient and to develop and implement technology to reduce or recapture these resources. For example, we have implemented the Clean Room

Econology Project (note), which aggregates knowledge obtained throughout the company in order to reduce the environmental impact from manufacturing processes and which also reduces emission of greenhouse gases during manufacturing by drastic energy conservation through mini-environment technology.

We also strictly observe consideration for the environment through “green procurement”, control and restriction of chemical substances, implementation of product environmental assessment, and by complying with all applicable laws and regulations.

(Note) “*Econology*” is a coined word with the following three meanings. *Econology* = economy + ecology + technology. We aim to reduce both facility management costs and greenhouse gas emissions through our technologies.

We seek to make a better contribution to society through closer communication with our stakeholders.

We believe it is the responsibility of a “corporate citizen of planet Earth” to engage in business activities that are in harmony with both society and the natural environment.

The group is making efforts toward interactive communications with stakeholders through various activities, including meetings for closer communication with residents in local communities, site tours, participation in environmental exhibitions, and interactive environmental lessons provided at elementary schools. Through these activities, we endeavor to introduce our environmental approaches to the local communities and discover their concerns in order to improve our environmental initiatives.

We aim to be a sincere and reliable corporate citizen through the implementation of 3R (reduce, reuse and recycle) and environmental protection activities, by evaluating the impact of business activities on the environment from a comprehensive viewpoint including biodiversity and also by making various efforts to mitigate our environmental impact.

I sincerely appreciate your continued understanding and support for the business activities and environmental initiatives of the Toshiba Semiconductor Company Group.

Kiyoshi Kobayashi

President, Toshiba Semiconductor Company

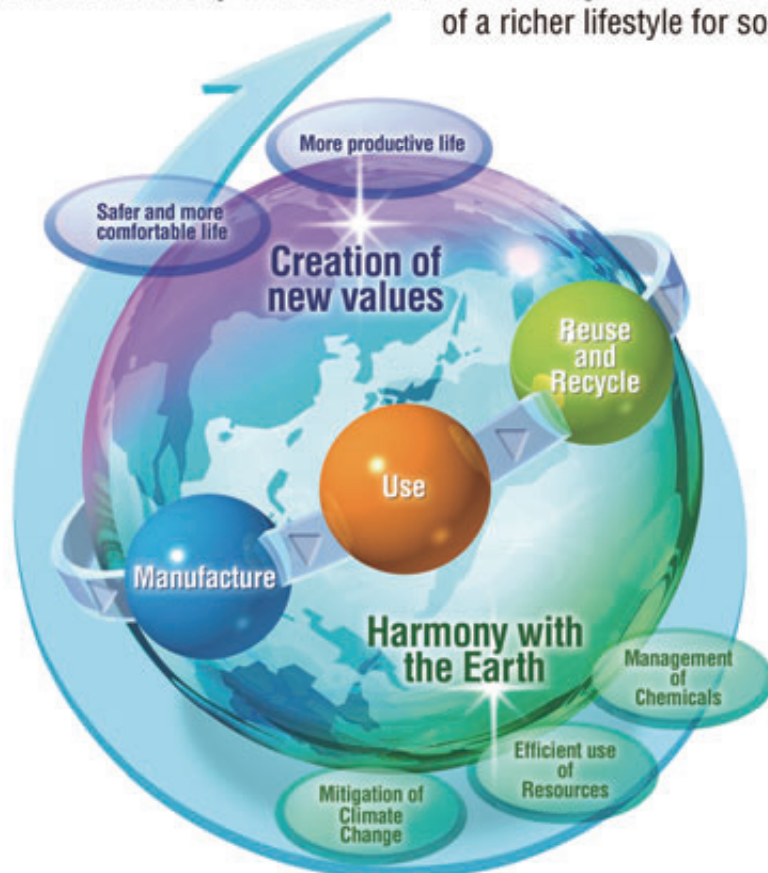
New vision of the ideal situation in 2050

People leading rich lifestyles in harmony with the Earth — this is the ideal situation envisaged for 2050 as per Toshiba Group Environmental Vision 2050. Under this vision, we attempt to forecast the situation of the world in 2050 with respect to population expansion, economic development in developing countries and the amount of associated CO₂ emissions, and estimate what target values for products and business processes we need to achieve in the medium to long term in order to preserve the quality of life for all (Note 1).

Throughout the entire Toshiba Group, we have decided to conduct our efforts with the aim of achieving an environmental efficiency improvement factor (Note 2) of 2.3 by 2012, the final year of the Toshiba Group's 4th Voluntary Plan for the Environment. We envisage this factor to be 5 in 2025, the midterm year, and to be 10 by 2050. The Semiconductor Company Group believes that it is incumbent on a "corporate citizen of planet Earth" to endeavor for further mitigation of environmental impact and to create new, rich values. We are striving to realize this vision.

Environmental Vision 2050.

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



(Note 1): For more details on the Toshiba Environmental Vision 2050, please refer to our website at <http://www.toshiba.co.jp/env/en/management/vision2050.htm>

(Note 2): This factor is the index which evaluates both increases in product value and reductions in environmental impact of new and old products/services at the same time, compared to the baseline year 2000.

We calculate this factor by comparison of environmental efficiencies (product performance divided by environmental impact) between new and old products/services. For more details, please refer to Chapter 5: "Reduction of Environmental Impact of Products."

1. Environmental Management

Toshiba Semiconductor Company is developing and expanding its global environmental management practice.

Toshiba Semiconductor Company Group is actively making efforts toward resolving global environmental problems, which are currently a common issue faced by the entire human race. In order to achieve the goal of the "Environmental Vision 2050" established by Toshiba Group envisioning the ideal state of the Earth in the future, the following Statement of Environmental Philosophy was developed toward attaining more active global environmental management. We also implement various initiatives, including the environmental management committee in which measures against environmental problems and solutions for business management, engineering, production, and sales issues are proposed.

Statement of Environmental Philosophy of Toshiba Semiconductor Company Group

The Statement of Environmental Philosophy of Toshiba Semiconductor Company Group was revised on 26th July, 2010. We revised it by adding the description that the Semiconductor Group will contribute to the realization of a world that is low-carbon, recycling-based and nature-harmonious, and that biodiversity will be involved in environmental impact assessment. We will continue to promote our initiatives placing the highest priority on management of our environmental efforts under this Statement.

Statement of Environmental Philosophy of Toshiba Semiconductor Company Group

–Vision–

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

–Policy–

Toshiba 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 realizing energy saving and reduction of resource usage 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 and environmental activities through internal audits and reviews.

2.Execution

Toshiba Semiconductor Company Group strives to assess the environmental impact of its business activities including with regard to biodiversity which comprehend development, procurement, manufacturing, sales and recycling, set objectives and targets with respect to the reduction of environmental impact and pollution prevention, and execute proactive environmental measures including the following:

- 1) Integrating and unifying of its environmental management system in order to achieve thorough compliance;
- 2) Striving to create and supply products and services that consider environmental impact through the development of energy-saving and resource-saving designs, and by the restriction of the amounts and types of chemical substances contained in products;
- 3) Promoting reduction of our contribution to global warming by implementing productivity improvements, reducing our emission of greenhouse gases, developing and implementing energy-saving technologies for power systems, manufacturing equipment, and others, and increasing physical distribution efficiency, along with establishing guidelines to track our progress in these issues;
- 4) Contributing to a recycling-based society through efforts to promote 3R (reduce, reuse, recycle) measures proactively along with improving productivity, developing technologies to reduce, reuse or recycle resources used during our manufacturing processes, and establishing guidelines related to our waste and recycling, while also promoting efficient utilization of natural resources by implementing measures aiming to reduce waste generation and water intake;
- 5) Promoting risk reduction on environmental issues by appropriately restricting and using chemical substances, developing technologies to effectively reduce the use of certain chemical substances, and establishing guidelines for our chemical usage, along with making efforts to reduce the total amount of chemical substances released into the environment;
- 6) Facilitating mutual understanding with stakeholders by disclosing information through public relations, exhibitions, and mass-media regarding products and technologies 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 Company Group.

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

Revised on 26th July, 2010
Kiyoshi Kobayashi
President, Toshiba Semiconductor Company



1. Environmental Management

Four Elements for Promotion of Environmental Management

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

Environmental Management Committee

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

Acquisition of ISO 14001 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 ISO 14001 certification in 2005 as part of our continuing efforts to coordinate

environmental practice in our primary business.

Furthermore, we have been preparing to acquire integrated certification for all of the business processes of the Semiconductor Company. In August 2010, we acquired integrated certification for the Toshiba Semiconductor Company Group (Semiconductor Company of Toshiba Corporation, 21 sites in Japan, and 7 sites overseas).

For details, such as the certificate numbers of each site, please refer to chapter 8, "Data and Third Party's Opinion".

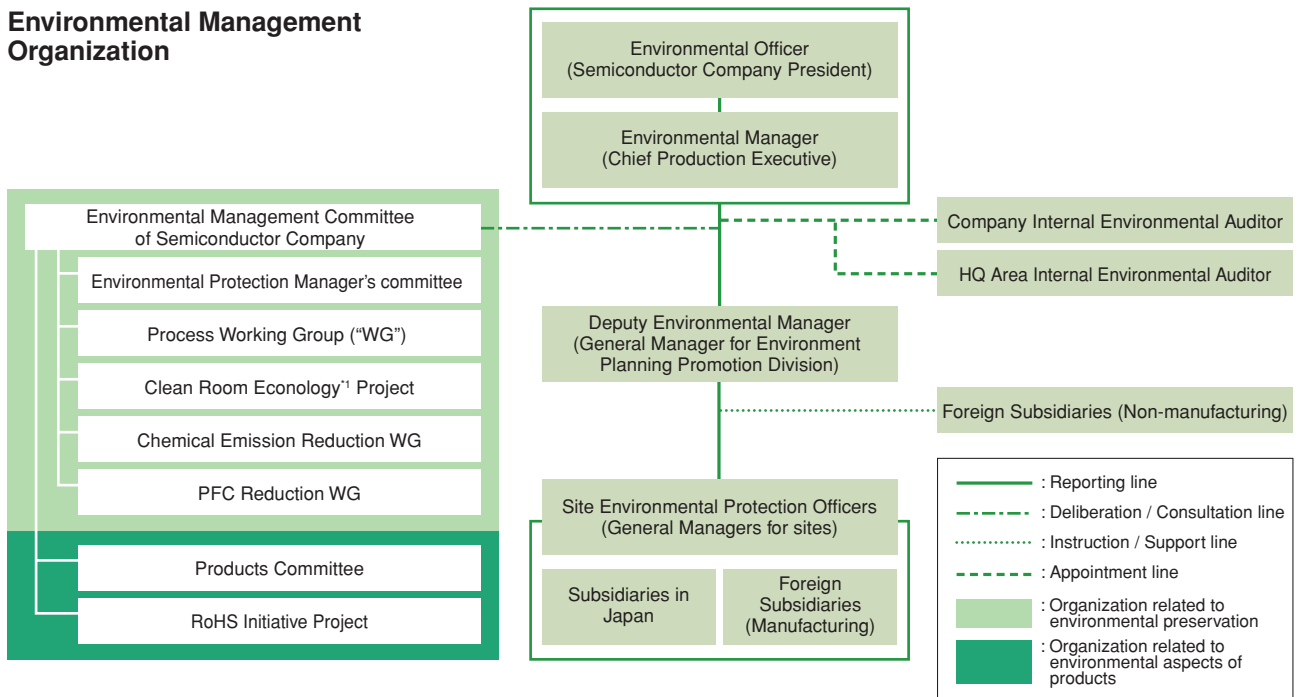
(Note) The scope extends to the main company and all consolidated companies (manufacturing and non-manufacturing) and overseas consolidated companies (manufacturing and non-manufacturing) with 100 employees or more.

Compliance with Laws and Risk Management

Toshiba Semiconductor Company Group has established self-regulation values which are stricter than applicable laws for chemical discharges to water bodies and emissions to the air and is striving to follow its self-imposed rules through individual approaches at each factory. The efforts of each factory also include improvement of environmental risk management through various measures such as installation of double containment systems applied to facilities including storage tanks and pipes for chemical agents.

During fiscal 2009, 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.

Environmental Management Organization



*1: Ecology is a word coined to express the idea of using technology to reduce both facility management costs and greenhouse effect gas emissions.
Ecology = Economy + Ecology + Technology

Implementation of Environmental Audit at Toshiba Group

Since 1993, the Toshiba Group has been conducting regular environmental audits covering most sites of Toshiba and its Group companies through its proprietary Environmental Audit System (*EASTER*)^{*1}. This system is based on the “3 Zen (all) approach” which promotes management of all facilities in all areas by all employees, the “3 Gen (actual) approach,” which emphasizes measurement of the actual situation of actual items at actual plants, and the “visual control” approach, which includes, for example, the practice of labeling every piece of equipment to indicate its proper status so that it can be checked easily in the field for compliance.

Audits at manufacturing sites, called “site environment audits,” are executed every other year^{*2} at all manufacturing sites in Japan and every year at sites outside Japan.

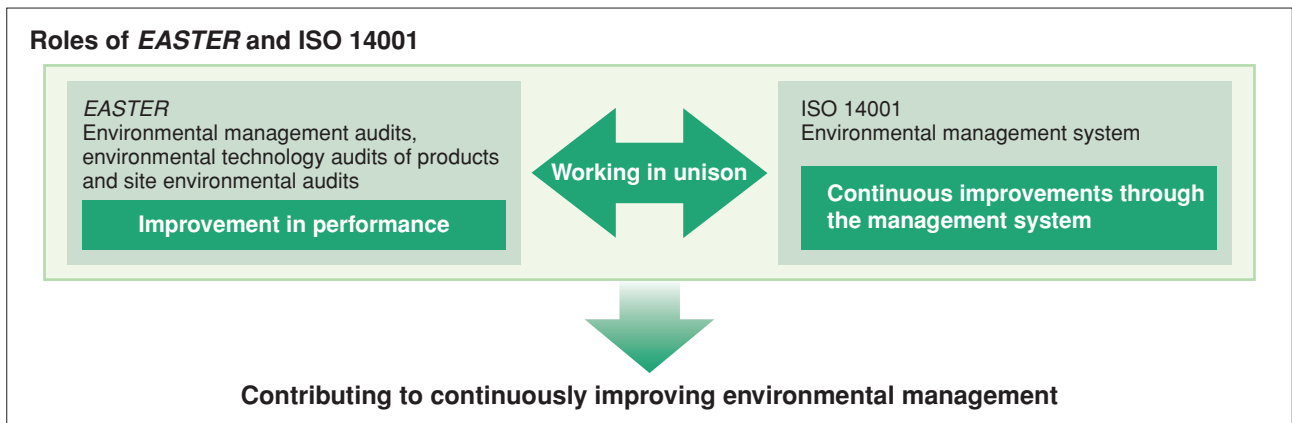
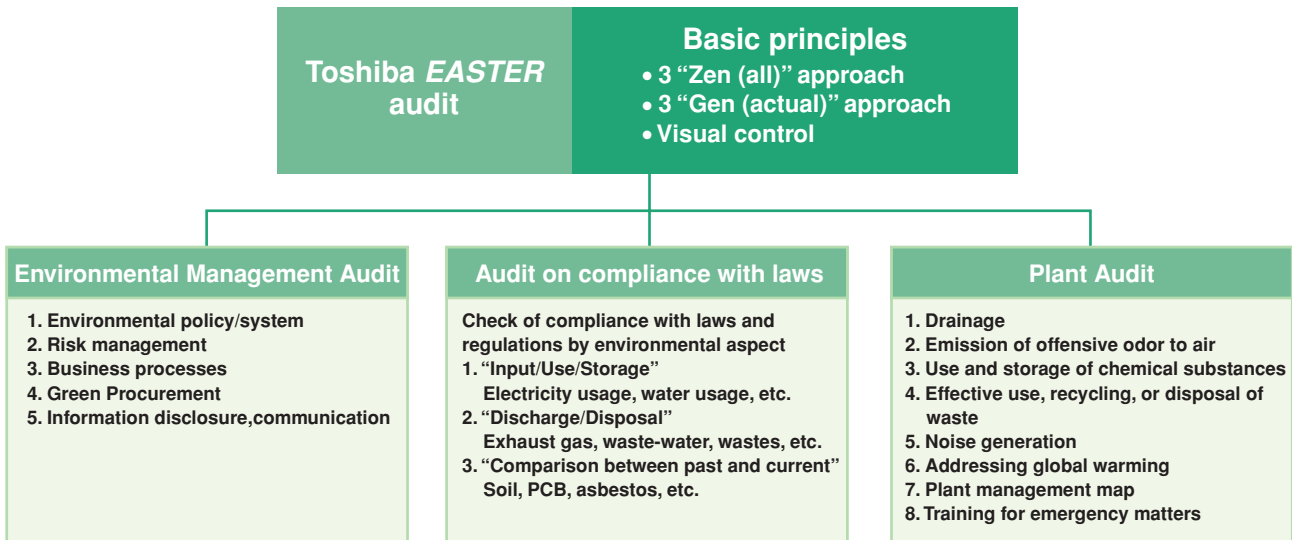
The audit is conducted for two days by an audit team that consists of qualified auditors from within the company. The sites receive audits on the following items: 1) environmental management, 2) legal compliance and 3) plant management, as displayed in the figure below. The plant audit, in particular, is conducted at 19 facilities and includes checks of waste

water treatment equipment, recycling, and chemicals warehouses and facilities that use chemicals, as well as training for handling emergency situations. Compliance, measurement control, 4S (Seiri, Seiton, Seiketsu, and Seisou, meaning in English: sorting (removing unnecessary things), straightening (keeping things orderly and available as needed), sanitation, and sweeping (maintaining a clean workplace), and employee education are also strictly monitored. Any audited site which receives instructions for improvement, if any, must implement corrective measures within six months.

Aiming to improve the environmental performance by deploying the Environmental Audit System in Toshiba on basis of Eco-Responsibility (*EASTER*), Toshiba Semiconductor Company Group has structured the environmental management system in accordance with ISO 14001. We promote this through compliance with various laws and regulations and through mitigation of environmental impact at work sites, so that these two environmental audit targets are inseparable.

*1: *EASTER* stands for Environmental Audit System in TOSHIBA on the basis of Eco-Responsibility.

*2: Some domestic operations with higher environmental impact are audited annually. The operation sites that are audited biennially conduct a self-audit every other year between the official audits.



1. Environmental Management

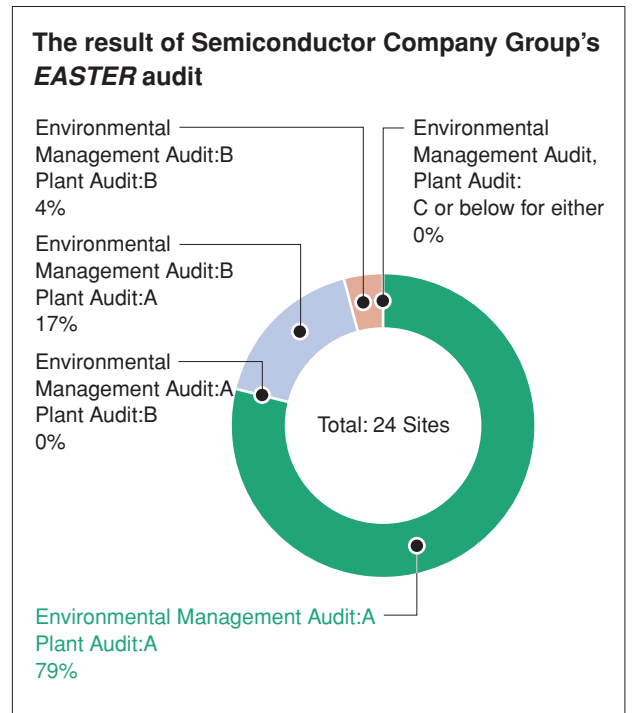
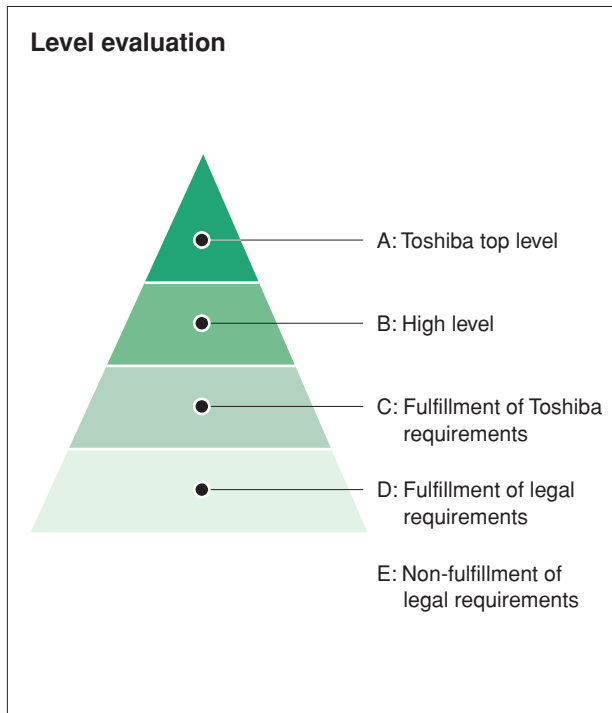
► The results of *EASTER* audit implemented in FY 2009

The Semiconductor Company has obtained fine results in its internal *EASTER* audits by promoting continuous improvement in environmental performance.

The results of an *EASTER* audit are assessed in letter grades. While the number of companies that have obtained the level "A" in both the environmental management audit and plant audit is 37% throughout the Toshiba Group, it is as high as 79% in the Semiconductor Company Group, as displayed in the right side of the

figure below.

The reasons for the high ranking of the Semiconductor Company Group include both the effective utilization of the environmental management information system to share data on good environmental practices throughout the group companies, and global improvement of the management system by the implementation of measures that also comply with ISO 14001.



The photos show Plant audits at manufacturing sites in Japan and overseas



► Specific examples of findings at *EASTER* audits

Here are some specific examples of the findings of Toshiba's *EASTER* auditors from audits conducted at sites of the Semiconductor Company Group in the previous fiscal year. In addition to detailed checks on the audit items at applicable facilities, all sites adopted

systematic measures in response to the findings and recommendations within 6 months of the audits. Positive findings are shared horizontally throughout the entire organization using the environmental management information system.



Example of recommendation
Each facility would benefit from an overall configuration chart (comment by an auditor)



Example of recommendation
Indication on piping has deteriorated, and needs replacing. (comment by an auditor)



Positive findings
Check items and check locations are clearly indicated in the overall facility map and this is encouraging. This should be developed horizontally in other facilities as well. (comment by an auditor)

Environmental Training According to Employees' Job Functions and Specialties

To achieve higher levels of environmental activities, environmental training is provided to all employees.

The Semiconductor Company Group uses e-learning software for general environmental training of its employees. For new employees, engineers, and sales representatives, face-to-face training is also provided. The training through e-learning is designed for all employees and almost all members took the learning course in 2009, resulting in improved understanding of the environmental management system of Toshiba Semiconductor Company Group. At factories, environmental training in line with employees' positions and job functions is provided to raise their environmental awareness, deepen job-specific knowledge, and improve overall business performance.

We also train auditors for *EASTER* based on the internal auditor training program of the Toshiba Group. Potential candidates for the training program for site environment auditors must be above the rank of section manager. They sit written tests and undergo plant training on the applicable environmental laws, ISO environmental management systems, internally structured policy, rules, and other key areas. In FY 2009, 3 trainees in the Semiconductor Company Group passed those tests and were registered as new auditors.

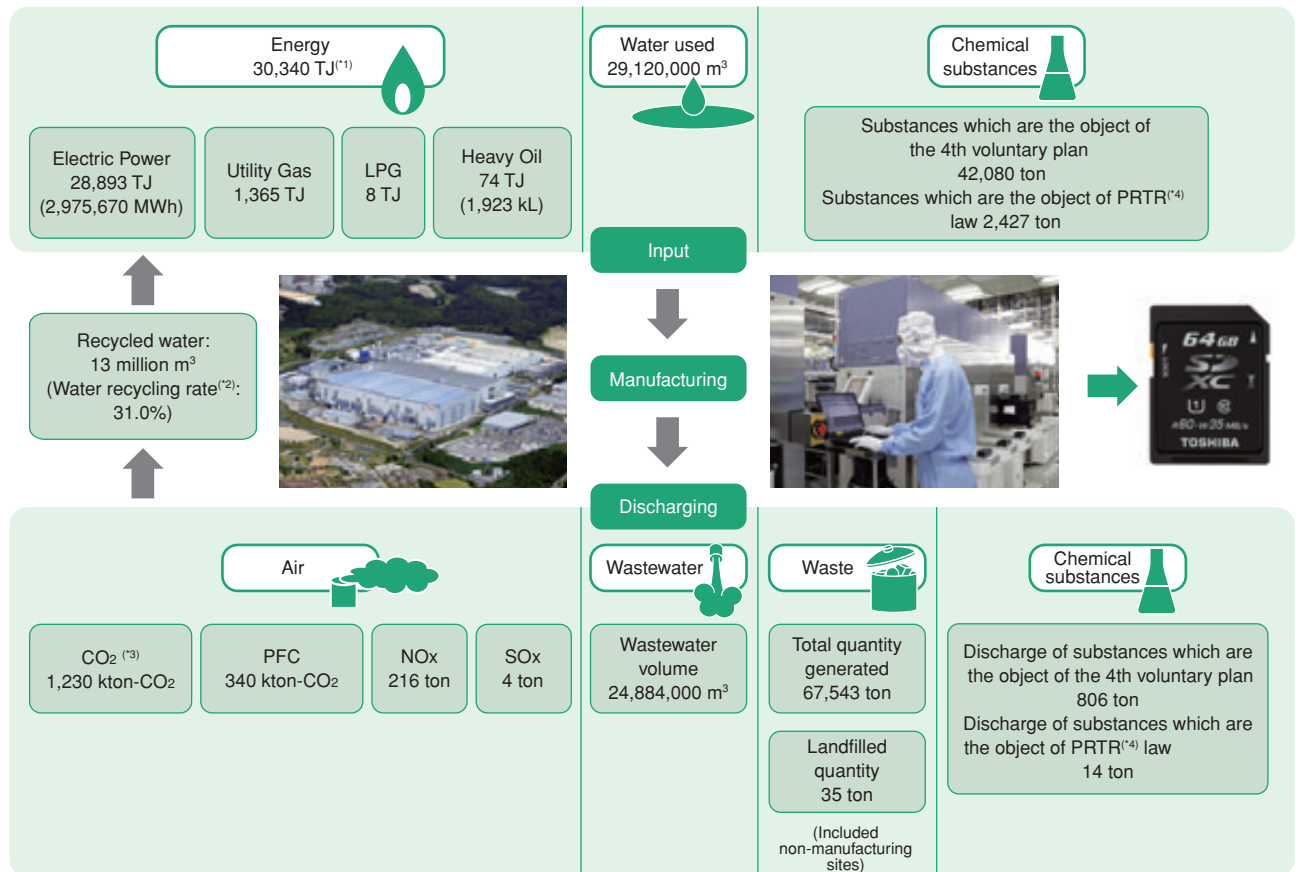
We will keep focusing on the continued provision of training to all employees that centers on higher quality and the utilization of IT tools in various areas.

2. Current Status of Environmental Impact

We promote adequate control and analysis of environmental information

The Semiconductor Company Group strives to improve environmental efficiency by analyzing its impact on the environment, utilizing the environmental management information system.

The status of Semiconductor Company Group's environmental impact in FY 2009 is described below. Please refer to 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.



(*1) TJ: tera (10¹²) joule

(*2) Water recycling rate equals *required feed water minus water supplied* divided by *required feed water multiplied by 100 (%)*. (as defined by JEITA (Japan Electronics and Information Technology Industries Association))

(*3) CO₂ emission coefficient: For fuel and heat, this is based on the Law Concerning the Rational Use of Energy and the Law Concerning the Promotion of the Measures to Cope with Global Warming. (A value provided by the supply company is used as the unit heat quantity of city gases.) For domestic electric power, it is based on the data (generating end) provided by the Federation of Electric Power Companies of Japan. For overseas electric power, it is based on the data reported from the Japan Electrical Manufacturers' Association.

(*4) PRTR: Pollutant Release and Transfer Register Law of Japan

Transition of Resources Usage of Semiconductor Company Group

	FY 2007			FY 2008			FY 2009		
	In Japan	Overseas	Total	In Japan	Overseas	Total	In Japan	Overseas	Total
Electric power usage (MWh)	2,855,504	101,735	2,957,239	2,950,774	102,482	3,053,256	2,859,713	115,956	2,975,669
Chemical substances (object of PRTR law) usage (ton)	2,565	31	2,596	1,997	24	2,022	2,400	28	2,427
Water usage (1,000 m ³)	32,301	587	32,887	29,298	548	29,846	28,521	599	29,120

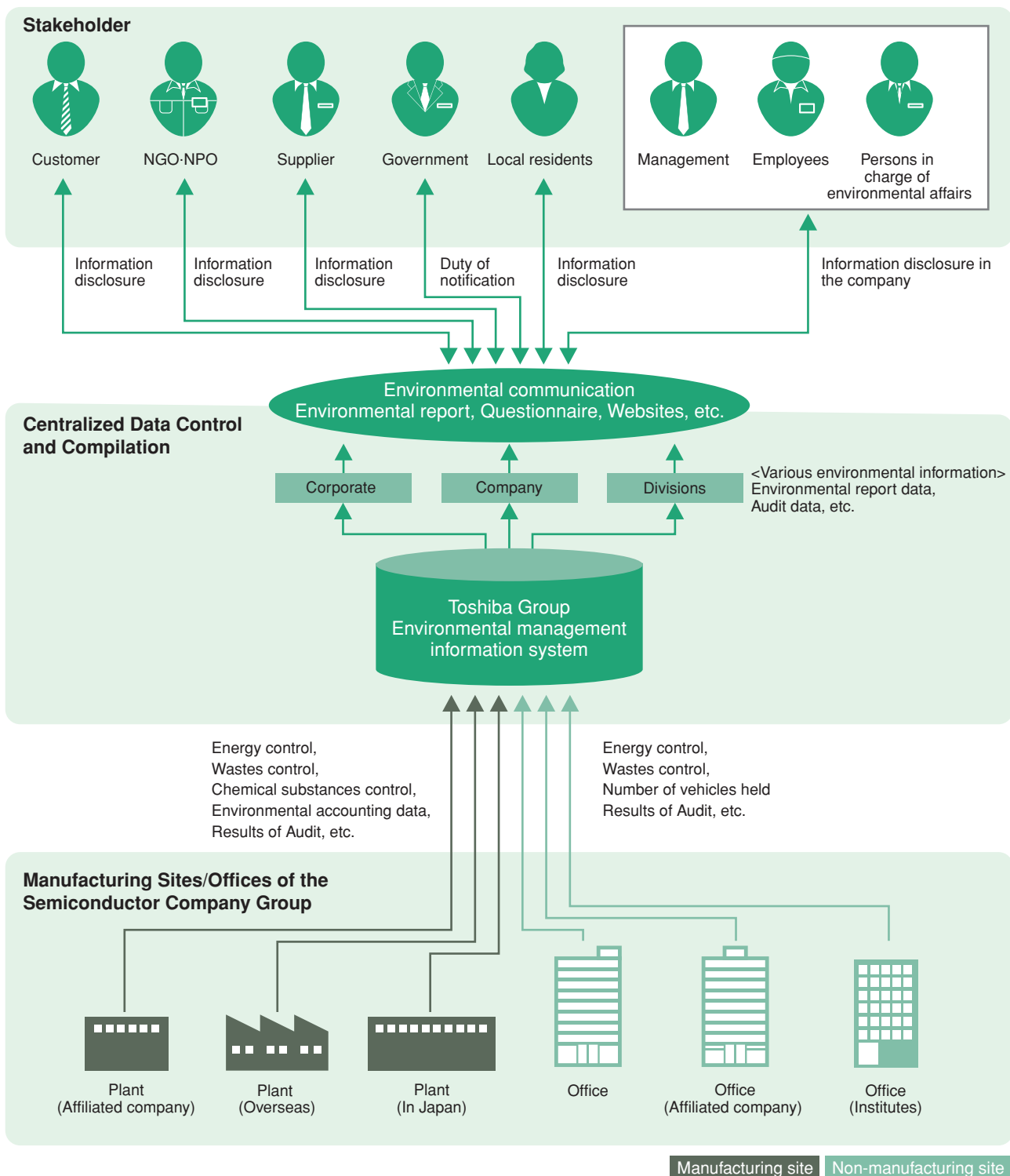
Transition of Environmental Impact of Semiconductor Company Group

	FY 2007			FY 2008			FY 2009		
	In Japan	Overseas	Total	In Japan	Overseas	Total	In Japan	Overseas	Total
CO ₂ emissions (energy originated, thousand tons-CO ₂)	1,415	62	1,477	1,203	63	1,266	1,158	72	1,230
Chemical substances (object of PRTR law) released (ton)	67.3	0.3	67.6	45.9	0.1	46.0	13.8	0.1	13.9
Water discharge (1,000 m ³)	28,797	488	29,285	25,476	446	25,923	24,404	479	24,884

Toshiba Group conducts centralized control of various environmental performance data through the environmental management information system. Each site inputs its data on energy, wastes, etc. into the central server, and the accumulated data is then utilized to gauge the environmental impact of all business activities, create action plans, and support the management decisions of the environmental management system as displayed in the figure below. Toshiba Group also publicly discloses the environmental performance information to

stakeholders both inside and outside of the Company through the website, environmental reports, and other media.

The results of *EASTER* introduced in the preceding chapter are also entered into the environmental management information system of Toshiba Group, and data on superlative environmental activities discovered at audits are shared horizontally throughout the Group and utilized to improve the environmental management level at each site.



Environmental Management
 Current Status of Environmental Impact
 Targets and Outcomes
 Environmental Accounting
 Reduction of Environmental Impact of Products
 Reduction of Environmental Impact of Business Activities
 Environmental Communication
 Data and Third Party's Opinion

3. Targets and Outcomes

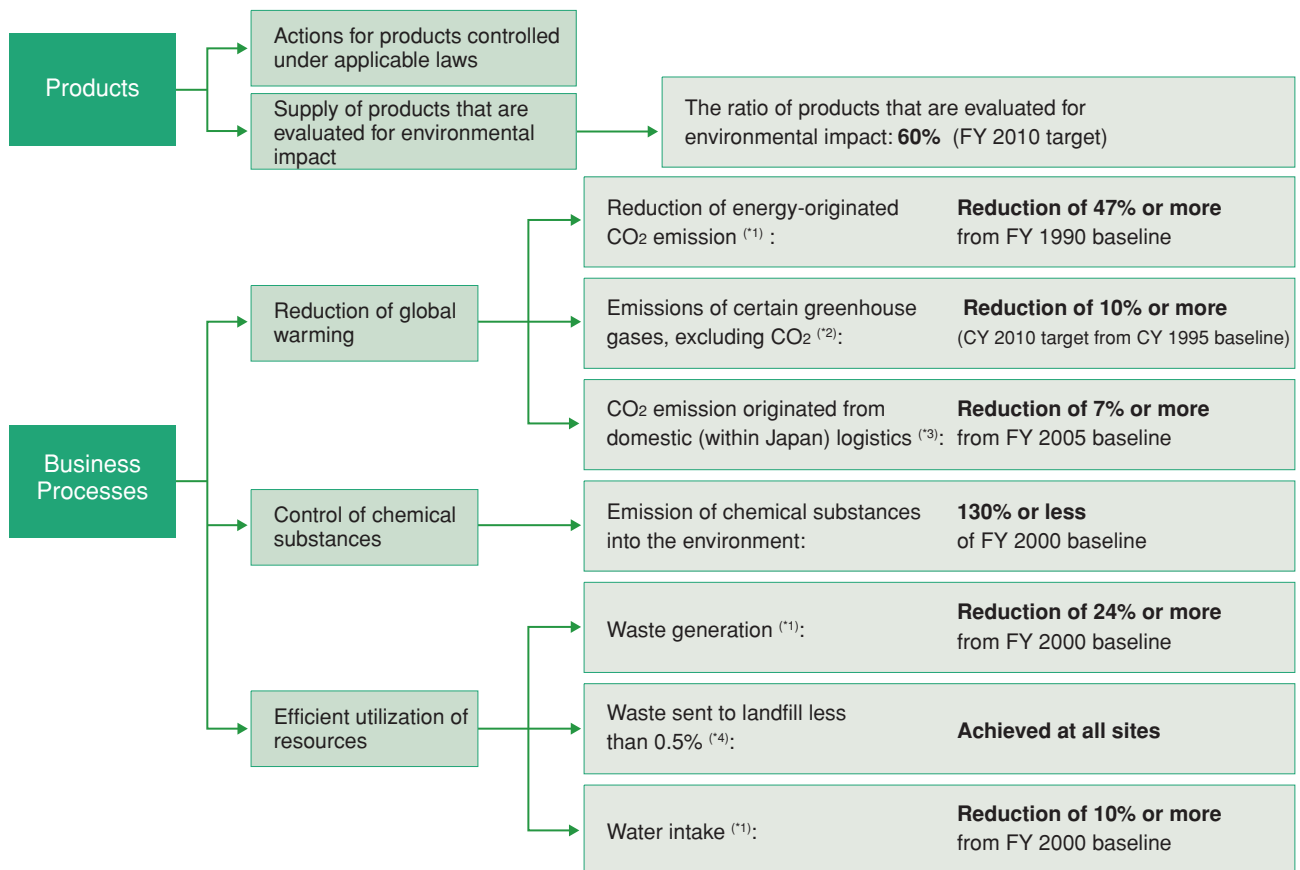
Since the launch of the “1st Voluntary Plan for the Environment” in FY 1993, Toshiba Group has been implementing a higher level of environmental activities as it extended the plan to the 2nd and 3rd phases with expanded items, goals, and sites. In accordance with the “4th Voluntary Plan for the Environment,” effective until FY 2012, the group is currently striving for improvement of efficiency in

both products and business processes.

Toshiba Semiconductor Company Group is also making efforts to achieve the targets under the 4th Voluntary Plan for the Environment. In FY 2009, our group attained an achievement surpassing the previous year, in terms of reductions of greenhouse gas emissions and discharge of chemical substances.

Semiconductor Company Group’s Target Based on Toshiba Group’s 4th Voluntary Plan for the Environment

FY 2012 : Target Year to meet numerical goals unless otherwise stated



(*1) This index uses the rate indicating emission per unit of output normalized by deflator (For details, please refer to note in following table)

(*2) CF4, C2F6, C3F8, C4F8, CHF3, SF6, and NF3

(*3) This index uses the rate indicating emission per unit of output (For details, please refer to note in following table)

(*4) Waste sent to landfill is less than 0.5% by weight of the total amount of waste generated (For details, please refer to note in following table)

Conditions for achievement of annual plan by Semiconductor Company Group (results of FY 2009)

Semiconductor Company Group decides on an annual plan based on the 4th voluntary plan for the environment described in the previous page and implements initiatives accordingly.

Semiconductor Company Group set FY 2009 target values, such as the volume of greenhouse effect gas

emissions, total amount of waste, and the amount of water intake which were stricter than those required by Toshiba Group for the environment voluntary plan; we achieved our targets nonetheless. Our next plan to reduce emissions of chemical substances into the air and water will be to promote installation of abatement systems primarily aiming to reduce VOC (volatile organic compound) emissions.

Results of Semiconductor Company Group's Achievement of Targets in FY 2009

Item	Indicator	Baseline	FY 2009 Result			FY 2010 Plan
			Plan	Result	Evaluation	
Reduction of energy-originated CO ₂ emissions	Emission rate ^{*1}	FY 1990	Reduction of 65% or more	70% reduction	○	Reduction of 76% or more
Reductions of total emissions of certain greenhouse gases, excluding CO ₂ ^{*2}	Total emissions	CY 1995	Reduction of 10% or more	73% of the baseline year	○	Reduction of 12% or more
Reduction of CO ₂ emissions associated with domestic (within Japan) product logistics	Emission rate ^{*3}	FY 2005	Reduction of 37% or more	46% reduction	○	Reduction of 45% or more
Emissions of chemical substances to air and water (total amount)	Total emissions	FY 2000	211% or less	205% of the baseline year	○	208% or less
Reduction in the total amount of waste generated	Rate of the total amount of waste generated ^{*1}	FY 2000	Reduction of 30% or more	45% reduction	○	Reduction of 47% or more
Waste sent to landfill < 0.5% at manufacturing sites ^{*4}	Number of sites where target was achieved	-	All sites	All sites	○	All sites
Reduction of water intake	Water intake rate ^{*1}	FY 2000	Reduction of 48% or more	62% reduction	○	Reduction of 60% or more

○: achieved, ×: not achieved (Except for CO₂ emissions associated with physical distribution in Japan, the results at overseas manufacturing sites are included)

Supplementary notes:

*1: Rates used as indicators are based on net output (per unit of output normalized by deflator).

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: CF₄, C₂F₆, C₃F₈, C₄F₈, CHF₃, SF₆, and NF₃

*3: This index means emissions per unit of output

*4: Waste sent to landfill < 0.5% at manufacturing sites means that the final disposal rate, or amount of waste sent to landfill after treatment, is less than 0.5% of the total amount by weight of byproducts and other waste items generated (total waste discharged) as a result of business activities at each of Semiconductor Company Group's manufacturing sites worldwide.

In addition, our non-manufacturing sites in Japan have a target to achieve a final disposal rate of 1.0% or less.

4. Environmental Accounting

Semiconductor Company Group engages in environmental accounting that aggregates and analyzes the investment amount and expenses relating to environmental preservation as a tool to promote environmental management.

We calculate the actual economic effects from reduction of costs such as electricity and waste disposal, and we estimate the tangible economic effects from reduction of environmental impact on

the air, water, and soil, prevention of potential future risks, and by utilizing data in our environmental management system. We refer to the "Environmental Accounting Guideline 2005" issued by Japan's Ministry of the Environment for classification of the environmental preservation expenses and calculation criteria. The benefits are calculated using quantitative data of environmental impact reduction benefits to deduce monetary value.

■ Environmental Protection Costs

Environmental protection costs in 2009 amounted to 22 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. The investment budget for FY 2010 increased by 8.9 billion yen from the previous year. We plan to focus our investments in the near future on efforts to reduce the amount of emissions of chemical substances.

(Unit: million yen)

Classification	Content	FY 2009		FY 2009 (Difference from budget)		FY 2010	
		Investment	Costs	Investment	Costs	Budget for Investment	Budget for Costs
Costs for manufacturing process	Pollution prevention cost	2,627	13,846	-127	-1,008	11,382	19,169
	Global environmental protection cost	266	2,078	-278	597	500	1,117
	Recovery and recycling costs	144	1,987	16	72	75	2,130
	Subtotal	3,037	17,911	-389	-339	11,957	22,416
Costs for business for upstream/downstream	Green procurement, recycling, etc.	0	395	-11	25	0	400
Management activity costs	Environmental education, maintenance of EMS, planning of greenery at factories, etc.	11	1,363	-31	-149	0	1,464
Research & development costs	Development of products that take into account environmental impact, etc.	55	2,259	55	1,380	55	631
Social activity costs	Support of local environmental activities, contributions, etc.	0	12	0	5	0	11
Environmental remediation costs	Recovery from pollution, etc.	0	105	0	-40	15	113
Total		3,102	22,046	-377	882	12,027	25,036

The values in the first decimal place have been rounded off

■ Environmental Protection Benefits

On the other hand, the environmental preservation benefits in FY 2009 were estimated at 7.4 billion yen in total, partly because the amount of reduction of the

energy cost due to production fluctuation was around 4 billion yen. The tangible effect figure was negative because the emission amount of chemical substances at some manufacturing plants increased.

(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.	7,492
Tangible benefits ^{*2}	Benefits concerning reduction in environmental impacts expressed in monetary value	-469
Risk prevention benefits ^{*3}	The extent to which risks are reduced after the investment compared with before the investment is calculated	391
Total		7,414

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 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.

5. Reduction of Environmental Impact of Products

Semiconductor products can be used to support energy conservation in industries and society.

Semiconductor products are high-performance small devices that are used in a wide range of applications, including electronics, consumer electrical appliances, vehicles, and industrial equipment. Among a multitude of beneficial uses, semiconductor products can be used to develop energy-saving systems for electric and electronic equipment.

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

Toshiba Semiconductor Company Group has been engaged in various activities aiming to improve the environmental footprint of many of its semiconductor products compared to previous generations, using LCA calculations^{*1} and chemical substance controls in accordance with applicable laws and regulations.

*1: LCA (Life Cycle Assessment): a method of evaluating the total environmental impact of products from the procurement and manufacturing stage to consumption and disposal.

The LCA provides an estimate of the environmental impact of products, as measured in CO₂ emission-equivalents, in order to obtain a baseline for each product group.

The Semiconductor Company Group calculates environmental impact of selected products from different product groups using its proprietary method of LCA calculation. By calculating LCA, it is possible to determine where to concentrate mitigation measures for each type of semiconductor product.

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

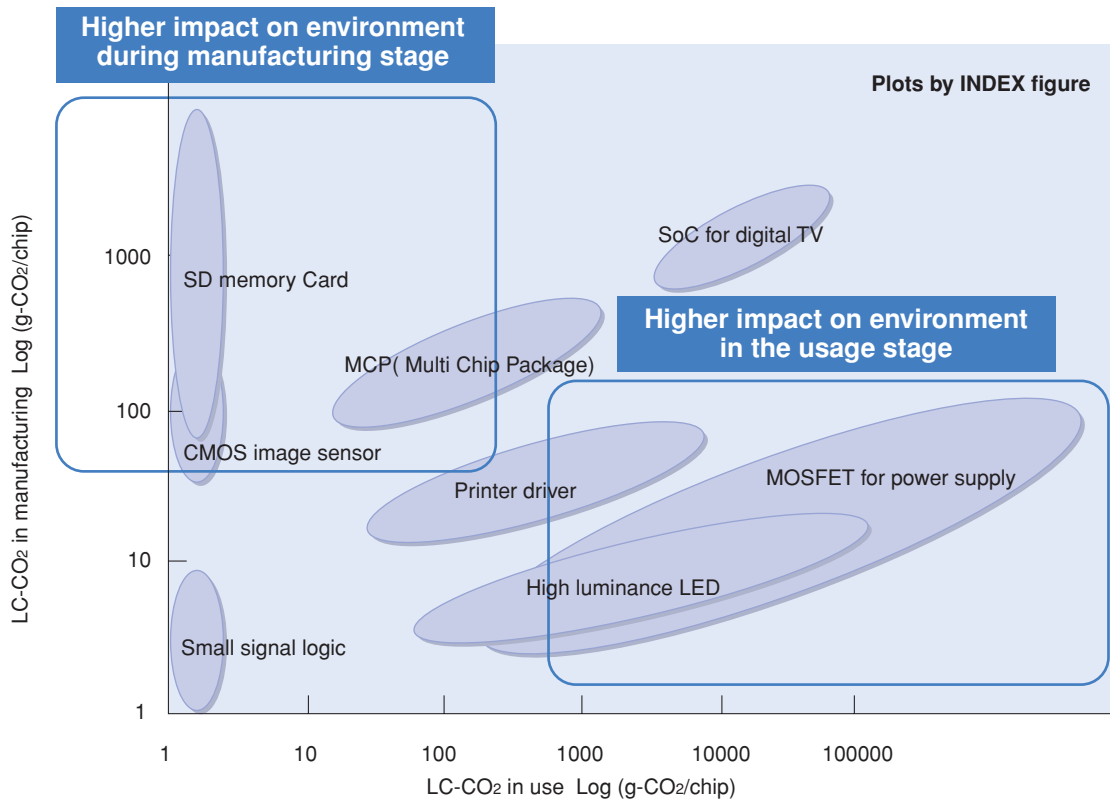
The vertical axis shows the sum of CO₂ contained in raw materials and emitted during the production stage, including procurement. The horizontal axis shows the sum of the emissions in the usage stage, including disposal or recycling, taking into account average conditions of use and lifespan of the applications.

For example, it is assumed in the chart that metal-oxide semiconductor field-effect transistors (MOSFETs) will be used in power-supply adapters of personal computers, and high-intensity LEDs will be used for lights. Since the majority of CO₂ emissions caused by these products in these applications occurs during use, it is more effective to enhance the efficiency of product performance than to implement measures for reducing CO₂ emissions during the products' raw material or production stages.

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

Overall energy saving can be achieved by promoting energy savings during the manufacturing stage through development of micro-fabrication technologies enabling us to fabricate more chips from one wafer and through the activities of the Clean Room *Econology* Project (refer to chapter 6).

5. Reduction of Environmental Impact of Products

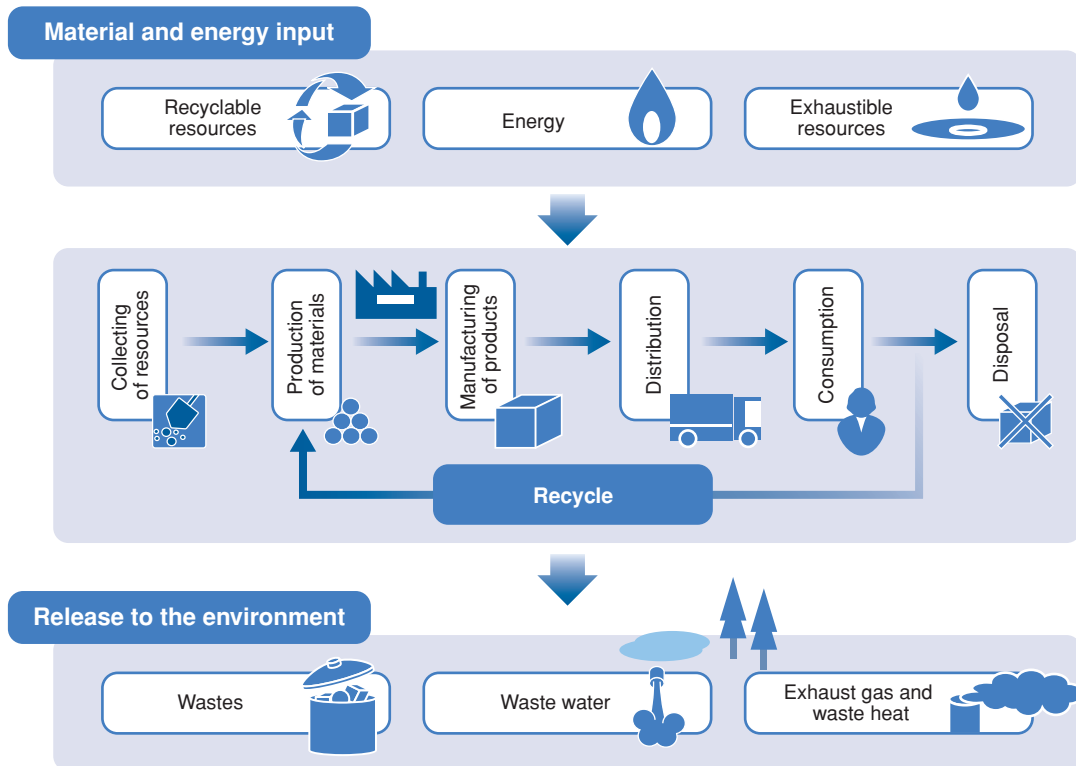


Column LCA for Evaluation of Environmental Impact throughout Product Life Cycle

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

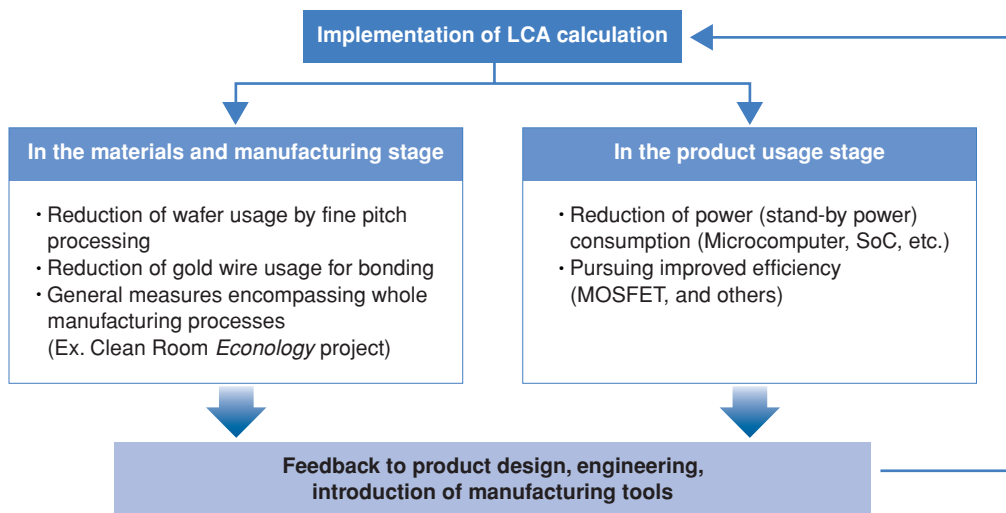
By the end of FY 2009, Toshiba Semiconductor Company Group completed calculations of the LCA for sample products in 93% of whole sales amount of its product groups. The results are being used in studies and analyses on the environmental impact of our semiconductor products.

► Whole Flow of LCA



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

► Examples of Measures using LCA to Reduce Environmental Impact



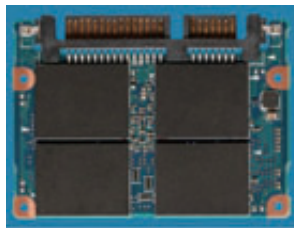
5. Reduction of Environmental Impact of Products

Examples of products in which procedures to reduce environmental impact compared to previous generations or similarly- functioned products have been employed

① In the Stage of raw material and manufacturing

SSD that employs 32 nm process multiple cells NAND

In the PC market, the amount of small-size, lightweight mobile laptops typified by the Netbook is increasing, and the need for smaller size and power conservation for storage devices is also intensifying. This product significantly reduces the environmental impact at the manufacturing stage by adopting 32 nm process. A newly developed controller for module type SSD has been adopted to achieve a small size of about 1/7 in volume, about 1/8 in weight, and about 1/2 in power consumption compared to the conventional 2.5 inch type SSD.

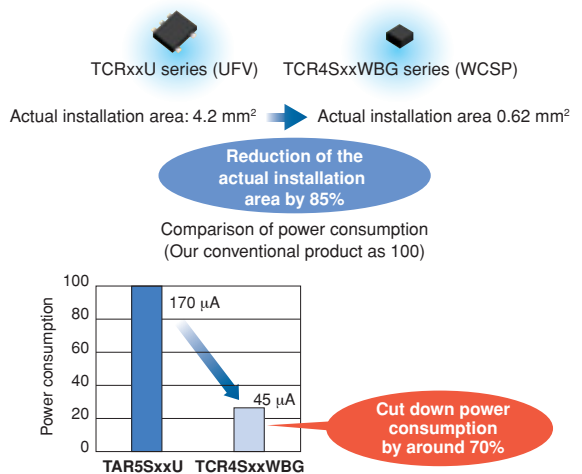


30GB THNSNB030GMSJ
Mass production started in October 2009)

② In the Stage of Usage

Small power source IC CMOS Low Drop Out Regulator (LDO)

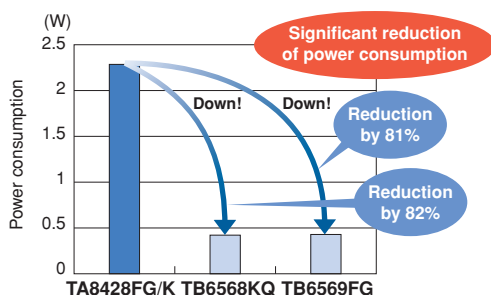
Low Drop Out Regulator (LDO) TCR4Sxx series with the ultra-small-size power source IC is an energy conservation product that reduces consumption of power by 73% in comparison with the TAR5SxxU series that employs our conventional product of bipolar process with the equivalent electric characteristics. It contributes to lower power consumption in cell-phones and laptops. We have a lineup of small-size WCSP package to contribute to reduction of the installation area as well.



③ In the Stage of Usage

Full bridge driver for DC motor: TB6568KQ/TB6569FG

TB6568KQ/TB6569FG has improved circuit current and output saturated voltage/ON resistance in comparison with our conventional product TA8428FG/K and considerably reduced power consumption. They contribute to power conservation in appliances that use a DC motor such as ATM and vending machines.



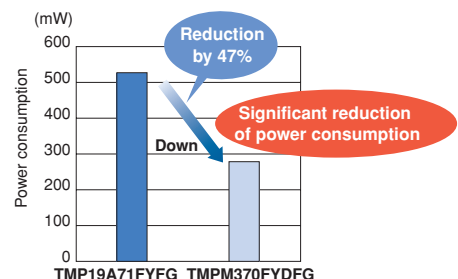
④ In the Stage of Usage

Microcomputer installed with ARM core: TMPM370

◆ **Achieved significantly reduced power consumption in comparison with the conventional product (TMP19A71)**
TMPM370, microcomputer for motor control has achieved significant reduction of power consumption by installation of a vector engine in contrast to our conventional product TMP19A71. Replacement of currently installed TMP19A71 in air-conditioners, washing machines, refrigerators, etc. with TMPM370 will result in significant energy conservation.

◆ **Significant improvement by employment of hardware in the vector control circuit**

Example: In comparison with power consumption by vector control of a motor by our benchmark program, TMPM370 significantly reduces power consumption by as much as 47% compared to TMP19A71.



Employee Statement

Memory Div. SSD Application Engineering Dept. **Kohsaka Yoshiaki**



Our newly-developed SSD (solid state drive) adopts 32 nm process NAND, is a module type that exploits SSD characteristics and has achieved a smaller size, lighter weight and greater power conservation.

As SSD has no mechanical parts, it is quiet, highly resistant against impact, and transfers information quickly.

We plan to employ even more precise processes, adopt thinner circuit boards and implement development that takes the environment into consideration.

Employee Statement

Toshiba Microelectronics Corporation **Koshiha Susumu**



The mainstream of motor control is shifting from inverter control to more efficient vector control. Vector control is effective in the improvement of efficiency at high speed revolution, in particular, but there was a problem of increased power consumption by CPU since it requires high performance CPU as an extremely large amount of calculations is necessary. We have developed a “vector engine”, hardware that reduces the CPU load and supports vector calculations with our original technology to overcome this problem, and succeeded in reduction of power consumption. We plan to perfect the “vector engine” and bolster the lineup for industrial application and for installation in automobiles.

▶ Calculating the impact of products on the environment

Toshiba Semiconductor Company Group uses a number of different methods to approximate the environmental impact and the customer value of its products. The Group undertakes this internal exercise in order to compare current products to older benchmarks with the aim of increasing value and lowering impact. We calculate the value of a product based on its functions and performance using the quality function deployment (QFD) technique, a recognized methodology for translating customer requirements into product development. Impact is assessed using LIME, a life-cycle impact assessment method developed by Japan's National Institute of Advanced Industrial Science and Technology (AIST), along with Toshiba's proprietary “Easy-LCA” simplified evaluation tool, which is able to calculate thirty types of environmental impacts in the life cycle of a product. For more information on Toshiba Group's internal methodology, please visit <http://www.toshiba.co.jp/env/en/products/index.htm>.

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

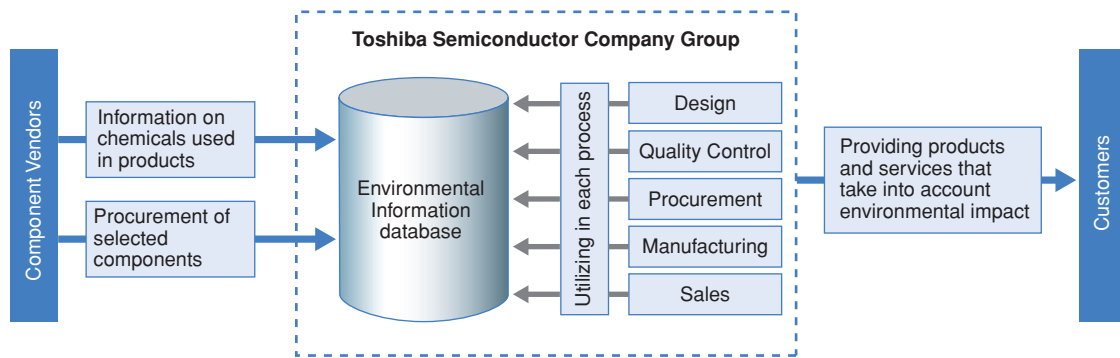
Regulations controlling chemical substances in products have been or will soon be enforced in many countries. They include some major regulations that are relevant to Toshiba Semiconductor Company Group, such as the EU's RoHS Directive, End of Life Vehicles (ELV) Directive, and Packaging and Packaging Waste Directive. Similar regulations to EU RoHS also went into effect in China and South Korea. Since June 2008, the EU has enforced a regulation called REACH, which requires evaluation and registration of all chemical substances manufactured in or imported into the European Union. It also requires clarifying and understanding of chemical substances contained in products and provision of information for customers. The total number of Substances of Very High Concern (SVHC), which are controlled under the REACH regulations, is expected to increase dramatically before all substances are classified. Currently, industries are paying attention to the planned revisions of the EU RoHS Directive, although specific timing of enforcement has not been determined yet.

5. Reduction of Environmental Impact of Products

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

We procure components and raw materials through green procurement activities that reflect our prohibitions or restrictions on Controlled Substances. In addition, we investigate the content percentages of chemical

substances and use of rare resources that might give significant impact to the environment and endeavor to select parts and raw materials with a lower impact on the environment. This information is stored in the database, and used to inform the authorization of new procurement, to determine when currently procured materials should be replaced, and to develop products (see the figure “Environmental consideration at the design and development stage” in next page). We offer information to our customers through proactive utilization of Japan Green Procurement Survey Standardization Initiative (JGPSSI) and Joint Article Management Promotion (JAMP) and other common formats advocated in the industry.



At the stages of product design and engineering, Toshiba Semiconductor Company Group conducts assessments of the environmental impact of products as a part of its engineering process (please refer to the following chart). Information on chemical substances

contained in new raw materials and products is reviewed to identify the existence or use of Controlled Substances as designated by Toshiba Semiconductor Company Group.

Toshiba Semiconductor Company Group's approach regarding Controlled Substances

- Japanese laws and regulations
 - Law concerning the Protection of the Ozone Layer through the Control of Specified Substances and Other Measures,
 - Law concerning the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.
 - Industrial Safety and Health Law,
 - Law on Prohibition of Chemical Weapons and Regulation, etc., of Special Chemicals,
 - The law concerning reporting, etc. of the release to the environment of specific chemical substances and promoting improvement in their management
- 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 JAMP/JGPSSI specified substances
- Toshiba's regulated substances:
 - Substances related to Toshiba green procurement for semiconductor products,
 - Toshiba Semiconductor Company's regulated substances
- Concerned regulations in future
 - ErP Directive.
 - Other regulations will be taken into account as applicable.

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

JAMP: Joint Article Management Promotion-consortium

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

ErP: DIRECTIVE 2009/125/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products

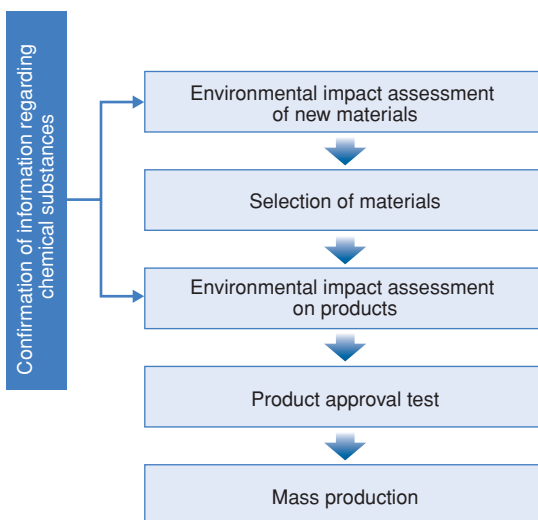
Environmental consideration at the design and development stage

- When materials, processes, equipment, or technological developments new to Semiconductor Company are introduced, environmental assessments of the chemicals are performed, including evaluation of the chemicals used, emitted, or contained, the handling of chemicals, and their reactions, discharges, and byproducts as applicable.
- At the design/development phase of each new class of products, the chemical substances contained in products are carefully assessed.

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

- The selection of materials that do not contain prohibited substances, and
- Process technology development, design, and development of semiconductor products with less environmental impact, as measured by Toshiba's LCA calculations and controlled substances guidelines, than existing Toshiba semiconductor products.

Verification of the Controlled Substances Contained in Products



5. Reduction of Environmental Impact of Products

■ Promoting Green Procurement Initiatives

In line with its green procurement guidelines developed in September 2004 (latest revision: May 2009), Toshiba Semiconductor Company Group asks its suppliers for cooperation in order to make better selection of procurement items that have lesser amounts of Controlled Substances. As part of these collaborative efforts, we request suppliers to provide information related to the Controlled Substances that we have designated, their system for meeting our environmental requirements, and supporting documents and materials. Every revision of our guidelines is followed by a meeting or other means for explanation to ensure our green procurement initiatives are fully understood by the suppliers. Starting in 2009, more effective and closer collaboration with them in green procurement has been facilitated using our new mechanism where the information and materials can be electronically provided through the Internet.

■ Further Environmental Consideration in Physical Distribution

Toshiba Semiconductor Company Group also takes various measures to promote environmental management in the packaging and physical distribution stages.

▶ Environmental Efforts Relating to Physical Distribution

Pursuant to Japan's Law Concerning the Rational Use of Energy revised in April 2006, Toshiba Semiconductor Company Group endeavors to reduce CO₂ emissions from all distribution phases including distribution during manufacturing of products (such as transportation between production sites of semi-finished products), transportation of waste generated from the manufacturing process, and product delivery to customers.

The total logistical volume in the Semiconductor Company Group, excluding overseas subsidiaries, in FY 2009 amounted to 20.5 million ton-kilometers^(*).

The table below shows the actual CO₂ emissions of Semiconductor Company Group's physical distribution in Japan.

In FY 2009, we employed a transportation method of joint loading with other companies in the transportation routes for the products that had previously been carried by chartered trucks in order to improve the load percentage per freight, and we succeeded in reducing the CO₂ emission per unit of production output, as shown in the chart below.

	FY 2007	FY 2008	FY 2009
CO ₂ emissions associated with logistics (Unit: ton)	7,500	6,000	5,400
Rate of CO ₂ emission with reference to FY 2005 ^(*) (per production unit)	72%	63%	54%

(*) The "ton-kilometer" is a measurement of weight in tons of material transported multiplied by the number of kilometers driven. The "total logistical volume" measures Semiconductor Company Group's totals of 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 or recyclers) 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 each year compared with FY 2005, expressed as a percentage. (Baseline FY 2005: 100%)

Environmental Efforts Relating to Packaging Materials

The 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 EU's Dangerous Substances Directive (Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances (2004/73/EC Amendment.)) To comply with

the EU's regulations on waste 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.

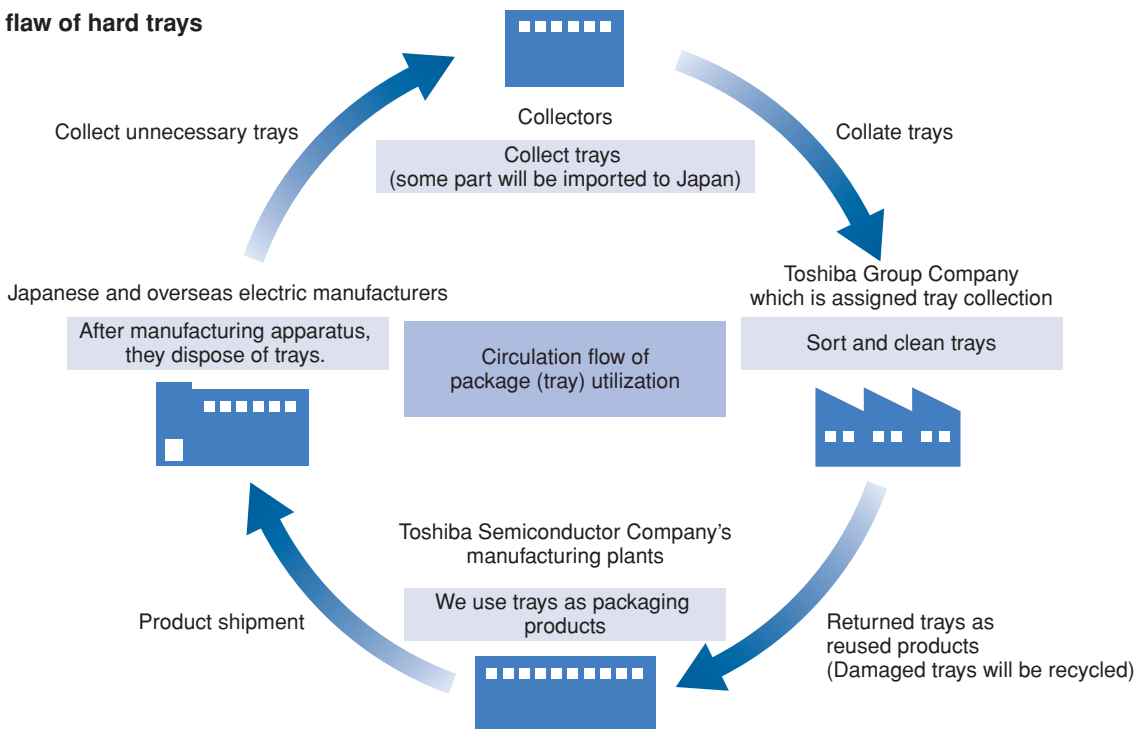


Meanwhile, Toshiba Semiconductor Company Group has been actively promoting the 3R (reduction, reuse, and recycling) of packaging materials. For example, hard trays used in deliveries to customers are reused. Other non-reusable packaging materials, such as reels and magazines, are recycled as a part of our initiatives for conservation of resources.

As shown below, those packaging materials are collected for reuse/recycle not only in Japan but also from overseas, with some exceptions depending on the type of materials.

We are also in the process of developing packaging materials made of plant-based plastic as alternative materials.

Reuse flow of hard trays



6. Reduction of Environmental Impact of Business Activities

Toshiba Semiconductor Company Group strives to reduce the impact of its business activities on the global environment.

The Fourth Assessment Report on climate change by the Intergovernmental Panel on Climate Change (IPCC) issued in 2007 indicated that increased greenhouse gas emissions would have a significant impact on the future global climate system, and also indicated that global warming may result in rising ocean levels and extinction of biological species.

According to the UN, the world's population is expected to reach 9 billion in 2050, and in addition to various other problems, mineral resources, fossil fuels, and food supplies may run short.

Toshiba Group is promoting reduction of environmental impact within our entire business processes in an attempt to contribute to the prevention of such global risks. For example, Toshiba Group has defined its greenhouse gases emission volume in FY 2007 as the peak of the most recent year, meaning that Toshiba Group has set a target to maintain its future annual greenhouse gas emission volume totals below the FY 2007 amount, even given future expected increases in production levels. Semiconductor Company Group is also endeavoring to contribute to the achievement of the target of Toshiba Group by introducing various energy conservation measures horizontally across the organization, in order to reduce greenhouse gas emissions at the manufacturing stage of our products. In this chapter, we will explain our efforts to reduce emissions of greenhouse gases at the manufacturing stage, activities to reduce emissions of chemical substances, and actions to utilize resources effectively, including specific examples.

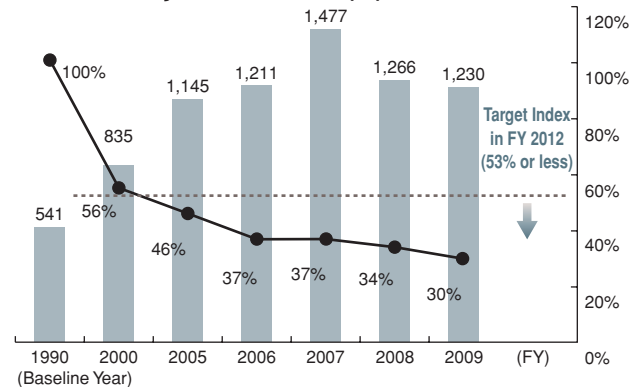
Energy conservation for CO₂ reduction is promoted to help reduction of global warming

Since semiconductor fabrication processes can require high energy consumption, such as air-conditioning a clean room, we have implemented various measures such as designing an energy-efficient clean room and waste heat recovery system during the production processes in order to reduce environmental impact.

Toshiba Semiconductor Company Group has established a Voluntary Plan designed to reduce CO₂ emissions per unit of output normalized by deflator*1 by 47% compared to baseline year of 1990 by 2012, in line with the target of Toshiba Group. The reduction rate stood at 70% in FY 2009, and increased efforts are being made for further reductions.

*1: Emissions per unit of output normalized by deflator: an indicator calculated based on production output normalized by deflator and is considered to indicate CO₂ emissions per unit closer to actual value. (For more details, please refer to footnote of the table on page 12.)

Amount of CO₂ emissions per year (1 = 1000 tons), and amount of CO₂ emissions per unit of output normalized by deflator index (%)



CO₂ emission coefficient: For fuel and heat, it is based on the Law Concerning the Rational Use of Energy and the Law Concerning the Promotion of the Measures to Cope with Global Warming. (A value provided by the supply company is used as the unit heat quantity of city gases.) For domestic electric power, it is based on the data (generating end) provided by the Federation of Electric Power Companies of Japan. For overseas electric power, it is based on the data reported from the Japan Electrical Manufacturers' Association.

(The above data covers all manufacturing sites in Japan and overseas and some parts of non-manufacturing sites)

Environmental Management
 Current Status of Environmental Impact
 Targets and Outcomes
 Environmental Accounting
 Reduction of Environmental Impact of Products
 Reduction of Environmental Impact of Business Activities
 Environmental Communication
 Data and Third Party's Opinion

Column 1

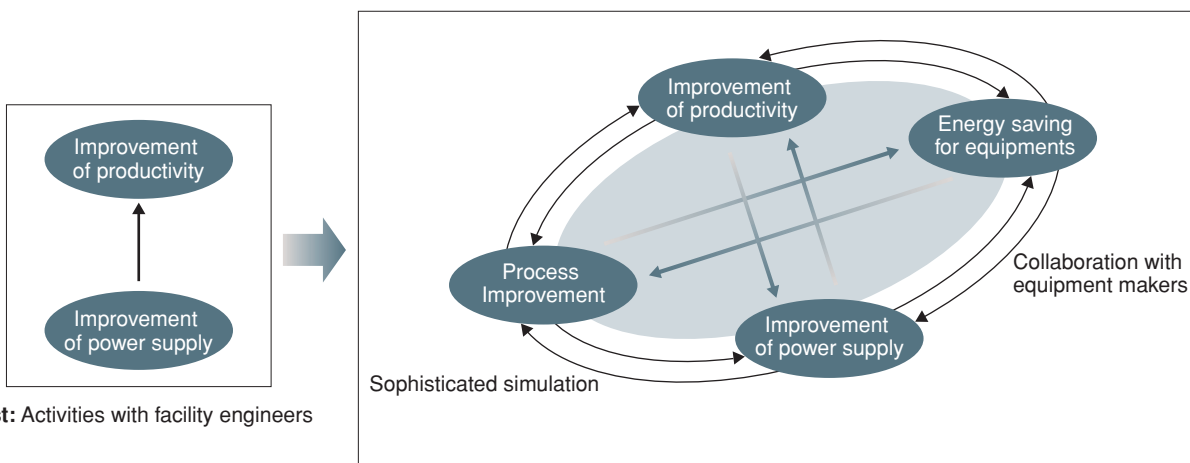
Pioneering cross-sectional project for energy saving
(Clean Room *Econology* Project)

The Semiconductor Company Group launched the Clean Room *Econology* Project* in FY 2004 to reduce greenhouse gas emissions. The project implements not only conventional energy saving in individual power systems or facilities but also expertise gathered across the organization and combined through a collaboration by production engineers, production equipment manufacturers, and other facilities and equipment manufacturers. Various energy saving measures, such as the installation of an energy-efficient clean room, waste

heat recovery system, and efficiency improvement of air-conditioning units through thermal simulation, have been promoted in the project.

In FY 2009, we succeeded in reducing energy usage by a total of the equivalent of 20,000 tons of CO₂, compared to FY 2008. We did this by achieving higher efficiency in air-conditioning by internal circulation of hot air inside the clean room and by introducing inverters to the coolant circulation pumps in the manufacturing machinery.

Toshiba Semiconductor Company's Endeavor to Reduce Greenhouse Gas Emission. "Clean Room *Econology* Project"



Past: Activities with facility engineers

Current status: Collaboration with facility engineers, process engineers and equipment makers

*: *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

Employee Statement

Yokkaichi Operations Facilities Engineering & Operations Dept. Facilities Operation Sect.
Takahashi Wataru



The Facility Control Division conducts overall CO₂ reduction and energy cost reduction programs in cooperation with each worksite in the Semiconductor Company under the Clean Room *Econology* Project.

For reduction of CO₂, the Manufacturing, Engineering and Facility Control Departments and equipment manufacturers join forces to check for any inefficient operation and inefficient power usage in manufacturing equipment that uses power, and conduct energy conservation improvement activities for manufacturing equipment.

We plan to continue improvement activities with the awareness of energy conservation and reduce contribution to global warming.

Environmental Management
Current Status of Environmental Impact
Targets and Outcomes
Environmental Accounting
Reduction of Environmental Impact of Products
Reduction of Environmental Impact of Business Activities
Environmental Communication
Data and Third Party's Opinion

6. Reduction of Environmental Impact of Business Activities

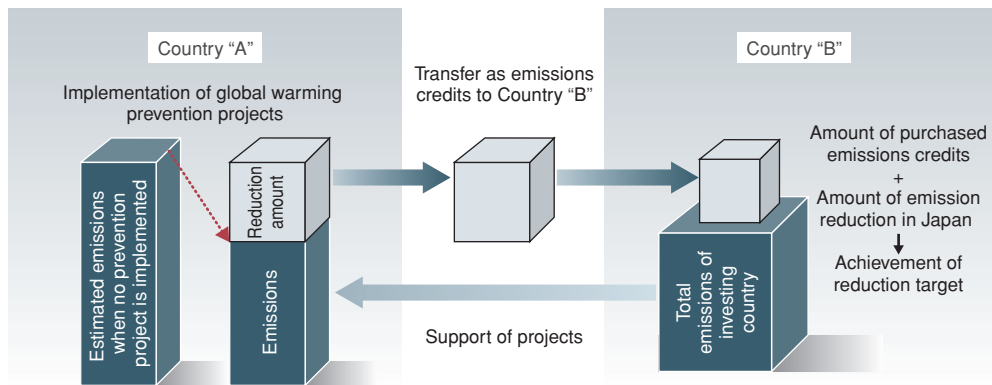
Column 2

Participation in Greenhouse Gas Reduction Investment Projects and Emission Credit Program

Since 2007, Semiconductor Company Group 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.

By 2013, Semiconductor Company plans to invest a cumulative total of about US\$ 3 million in the Japan Greenhouse Gas Reduction Fund, which manages emission projects. Semiconductor Company expects to receive a total of about 200 thousand tons of CO₂ emission equivalents in credits by 2013.



As shown above, if Country "B" supports greenhouse gas emission reduction projects conducted by Country "A", CER credits are issued according to the amount

reduced through the project in Country A, and the amount is counted as the supplemental allowance of Country "B".

Column 3

Consideration for the environment in the new plant at Yokkaichi Operations

In July 2010, Toshiba Semiconductor Company started construction of the fifth manufacturing plant at Toshiba Yokkaichi Operations (Yokkaichi City, Mie Prefecture), a manufacturing base for semiconductor memory products, with the objective of reinforcing our production capacity for NAND flash memory. This fifth manufacturing plant will be completed in the spring of 2011.

We have continuously developed energy conservation and waste heat recovery measures at the third and fourth Yokkaichi manufacturing plants. In the fifth manufacturing plant, we plan to reduce total amount of CO₂ emission by 12% compared to fourth plant, by installing only LED lighting in clean rooms, proactively adopting the latest energy conserving manufacturing facilities, and full implementation of the inverter control function in various pumps.

In addition to installation of double piping and liquid proofing to prevent leakage of chemical liquids, we will introduce high capacity water treatment systems

including the reuse of waste water from the manufacturing processes and equipment to clean exhaust air more thoroughly.

We hope that this fifth manufacturing plant can be a representative model for environmental conservation in the Toshiba Group. (Regarding consideration for biodiversity at construction of the fifth manufacturing plant, refer to the column on p.38)



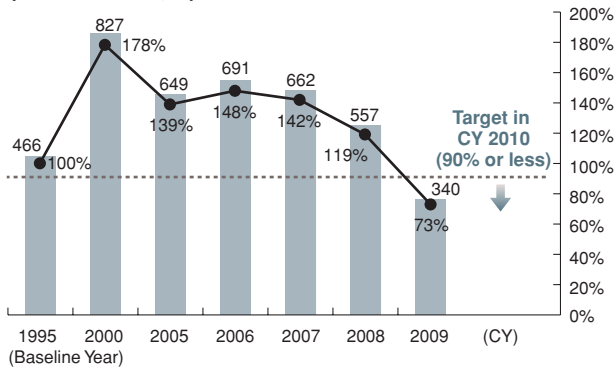
Reduction of greenhouse gases including PFCs are also actively pursued

We use perfluorocompounds (PFCs) and other greenhouse gases in the manufacturing process of semiconductors.

The World Semiconductor Committee (WSC), an international semiconductor industry group, selected seven kinds of greenhouse gases (CF₄, C₂F₆, C₃F₈, C₄F₈, CHF₃, SF₆ and NF₃) as the subjects for reduction and has a target to reduce total emission of those gases in 2010 to 90% of the amount emitted in 1995 (a 10% reduction).

The total emission amount of these seven gases by Semiconductor Company Group in 2009 was the equivalent of 340,000 tons of CO₂, and partially thanks to the introduction of abatement systems, we achieved the WSC's target. We plan to continue reduction of these seven gases usage, promote installation of abatement systems and proceed with reduction of the total emission even after meeting this 2010 goal. We introduced 7 abatement system units with the support of the Agency and New Energy Industrial Technology Development Organization (NEDO) in fiscal year 2009.

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

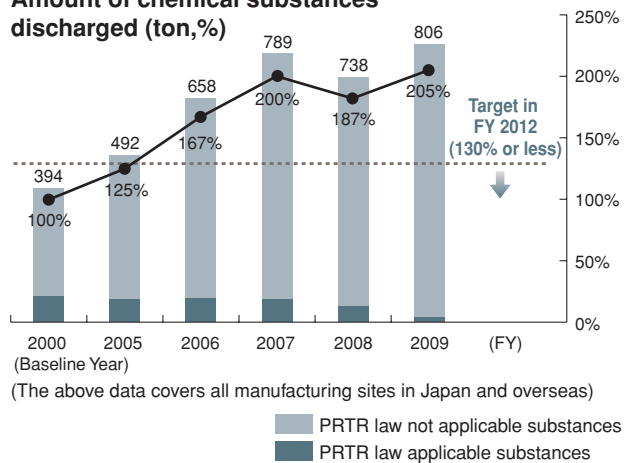


(The above data covers all manufacturing sites in Japan and overseas)

Further reduction of chemical substance discharges is projected through implementation of new technologies.

Because various chemical substances are required by the manufacturing processes of semiconductors, our group started in-company projects to reduce post-manufacturing emission of chemical substances to the air and water. The target chemical substances for reduction comprise 60 substance groups, including the PRTR* subject substances. While our aim is to keep emissions at 130% or less of the FY 2000 amount in FY 2012, the amount of emissions increased in FY 2009 compared to FY 2008 as a result of increased production. It is not easy to reduce the total amount, but we are making efforts in two aspects of usage: quantity measures (reduction, replacement, process changes, etc.) and abatement. We will focus on abatement of VOC (volatile organic compounds), and implement initiatives aimed at achieving the target in FY 2012.

Amount of chemical substances discharged (ton,%)



(The above data covers all manufacturing sites in Japan and overseas)

■ PRTR law not applicable substances
■ PRTR law applicable substances

6. Reduction of Environmental Impact of Business Activities

The chart below shows the breakdown of the PRTR subject substances of which we handled over 1 ton in FY 2009. Amounts shown are measured in tons.

We have been abating most of PRTR subject

substances, reusing the waste as a resource where possible, and conducting appropriate management (for detailed data on PRTR subject substances, see the website below.)

<http://www.semicon.toshiba.co.jp/eng/profile/environment/manufacture/chemical/index.html>

Toshiba Semiconductor Company Group's Substances Data covered by PRTR (Amount Handled, Amount Released, etc.)

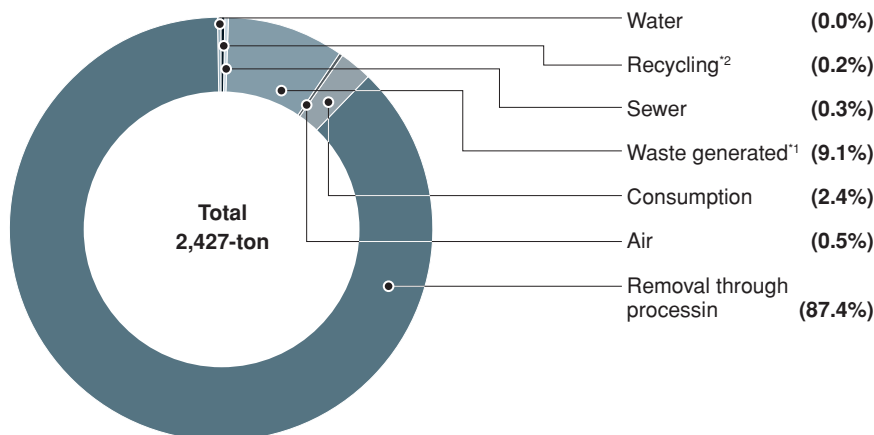
Substance number specified by the law	Substance name	Amount handled	Amount released	Transfer		Amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				as waste	as sewage				
283	Hydrogen fluoride and its water-soluble salts	2177.0	2.3	55.6	6.3	61.9	0.0	2111.7	1.1
16	2-Aminoethanol	81.3	0.1	77.6	0.0	77.6	0.0	3.6	0.0
25	Antimony and its compounds	55.2	0.0	21.4	0.0	21.4	33.9	0.0	0.0
63	Xylene	23.6	7.5	10.8	0.0	10.8	0.0	5.3	0.0
43	Ethylene glycol	19.6	0.3	18.9	0.0	18.9	0.0	0.4	0.0
30	Polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (liquid)	9.8	0.0	2.2	0.0	2.2	7.6	0.0	0.0
64	Silver and its water-soluble compounds	9.5	0.0	0.9	0.0	0.9	8.3	0.0	0.3
207	Copper salts (water-soluble, except complex salts)	9.0	0.0	8.9	0.0	8.9	0.1	0.0	0.0
260	Pyrocatechol	8.2	0.0	7.7	0.0	7.7	0.0	0.5	0.0
230	Lead and its compounds	8.1	0.0	0.4	0.0	0.4	6.9	0.0	0.8
224	1,3,5-trimethylbenzene	5.3	0.8	2.7	0.0	2.7	0.0	0.3	1.5
40	Ethylbenzen	5.3	1.9	1.9	0.0	1.9	0.0	1.5	0.0
24	n-Alkylbenzenesulfonic acid and its salts (alkyl C=10-14)	3.3	0.0	3.3	0.0	3.3	0.0	0.0	0.0
304	Boron and its compounds	2.8	0.1	2.5	0.0	2.6	0.0	0.1	0.0
218	1,3,5-tris(2,3-epoxypropyl)-1,3,5-triazine-2,4,6 (1H,3H,5H)-trione	2.1	0.0	0.5	0.0	0.5	1.6	0.0	0.0
266	Phenol	1.5	0.0	1.4	0.1	1.5	0.0	0.0	0.0
231	Nickel	1.1	0.0	0.0	0.0	0.0	0.9	0.0	0.3
258	Piperazine	1.1	0.3	0.0	0.0	0.0	0.0	0.8	0.0

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

* The above shows the data of all business units of Toshiba Semiconductor Company Group. The PRTR Act stipulates that substances of which the annual treatment amount is 1 ton or more are subject to registration. For the detailed data on substances for which the treatment amount is over 0.1 ton, refer to the website above.

* The values in the second decimal place have been rounded off.

The breakdown of the discharging and migrating destinations of the target substances of the Japan's PRTR law in FY 2009



(The above data covers all manufacturing sites in Japan and overseas)

(*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".

Column 4 / Upcoming environmental technologies

The Semiconductor Company has been taking various measures to reduce environmental impact.

The PFC gas abatement system that drastically reduces effluent discharge is explained below.

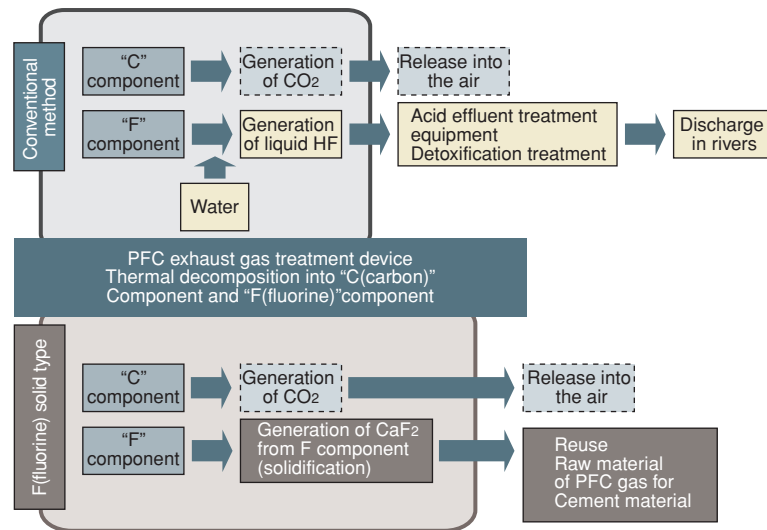
In the semiconductor manufacturing process, PFC gas is exhausted in micro-patterning by dry etching. PFC gas has a greenhouse effect which is several thousand times larger than CO₂. Therefore, Semiconductor Company has been making active efforts to reduce the PFC emissions.

The conventional exhaust gas abatement system removes PFC by dissolving the fluorine component decomposed from PFC gas in water. There was still a need to reduce acid effluent containing fluorine in order to reduce the environmental impact. The dry-type exhaust gas abatement system we have decided to

introduce not only has the PFC gas decomposition performance equivalent to or better than that of the conventional equipment, but also it can remove the fluorine component by solidifying it as calcium fluoride (CaF₂) through chemical reaction. As a result, water is not used in the abatement of PFC gas, and the amount of acid effluent can be significantly reduced.

We started to introduce the equipment at the fourth plant in Yokkaichi Operations in FY 2008. When fully operational, the new equipment will be able to reduce Yokkaichi Operations' water usage by approximately 180 thousand cubic meters of water annually.

PFC gas abatement system that reduces effluent discharge



6. Reduction of Environmental Impact of Business Activities

“Waste sent to landfill less than 0.5% (by weight)”^{*1} has been achieved at all manufacturing operations including overseas sites

Toshiba Semiconductor Company Group strives to achieve reduction of waste generated in association with its business activities and effective use of resources, as a project undertaken by the entire group.

Our goal is to reduce the total amount of waste generated by 24% (per production output normalized by deflator) in 2012, compared to the baseline 2000 emissions.

We achieved our target by various measures, including reusing once-used chemicals in the manufacturing processes that had been waste up until FY 2009.

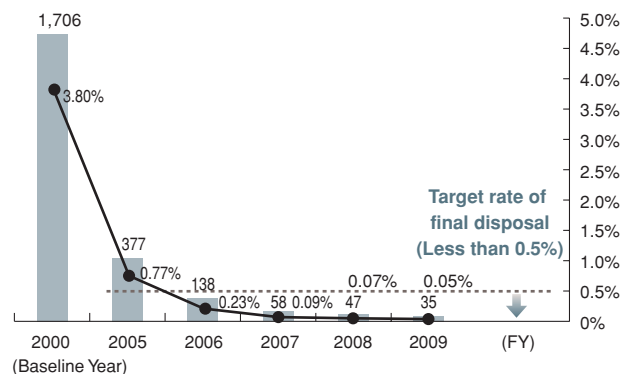
All manufacturing plants both in and out of Japan have achieved the goal of ‘waste sent to landfill less than 0.5% by weight.’ For policies for waste sent to landfill less than 0.5% achieved in the overseas plants, refer to the table below.

As for efforts toward effective utilization of resources, we promoted recycling of plastic, metal and other resources. In overseas plants, employees implemented thorough waste materials separation management and started recycling them as materials for cement production.

We are committed to making further efforts in more effective use of resources and reduction of waste.

*1 “Waste sent to landfill < 0.5%” means that the final disposal rate or amount of waste sent to landfill after treatment is less than 0.5% of the total amount by weight of byproducts and other waste items generated (total waste discharged) as a result of business activities at each of Semiconductor Company Group’s manufacturing sites worldwide. In addition, our non-manufacturing sites in Japan have achieved a final disposal rate of 1.0% or less.

Amount of final disposal waste (tons), and final disposal rate(%)



(The above data covers all Semiconductor Group manufacturing sites in Japan and overseas)

Sample measures for achieving “Waste sent to landfill less than 0.5%” at Toshiba Electronics Malaysia Sdn. Bhd., our manufacturing company in Malaysia

- Implementation of comprehensive waste materials separation activities
- Recycling of resin wastes at cement producers
- Recovery and recycling of rare metals
- Re-usage of goods delivery boxes and reels in manufacturing processes

Sample measures for achieving “Waste sent to landfill less than 0.5%” at Toshiba Semiconductor (Wuxi) Co., Ltd., our manufacturing company in China

- Screening of several disposal companies and coordination of selection criteria → Establishment of recycling routes
- Recycling of wasted abrasives that occupied 98% of waste at cement companies as of 2006

Column 5 3R activities at business sites

“Business process improvement” by 3R measures

Effective usage of limited resources has become increasingly important in our society. Semiconductor Company Group is pursuing the 3R policy in our business processes (reduce, reuse and recycle)

which are necessary for creating a sustainable, recycling-oriented society. Here are examples of waste emission reduction measures at Oita Operations and Yokkaichi Operations.

Example of waste reduction at Oita Operations

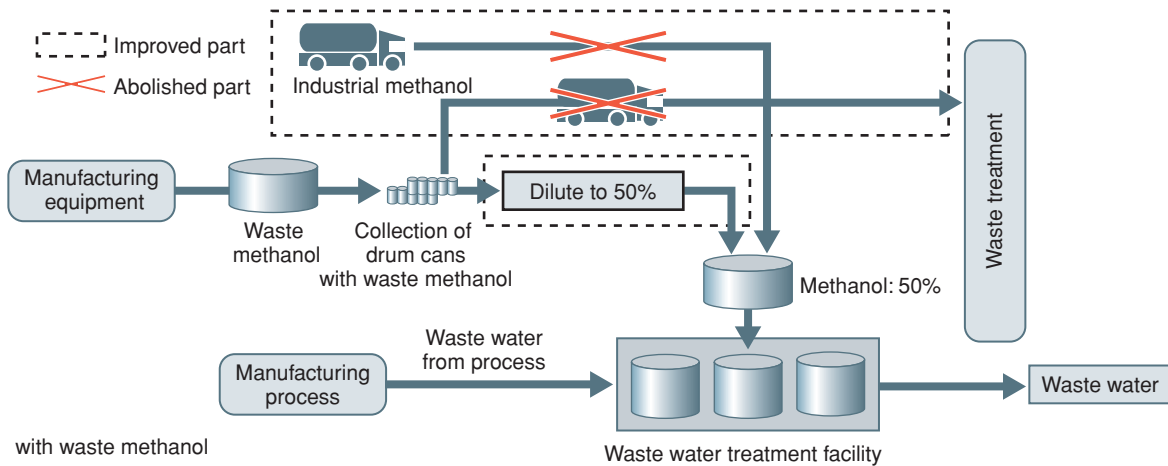
Oita Operations conducts biological treatment with bacteria in the waste water treatment facility, and had purchased industrial methanol (50% concentration) to feed those bacteria.

At the same time, methanol used in the manufacturing processes had been given waste treatment after

recovery since impurities were dissolved within it.

However, after detailed studies, Oita Operations succeeded in diverting it as the feed for bacteria after administering treatment (diluting and other measures.)

This measure contributed to reduction of waste methanol amount by 120 tons a year.



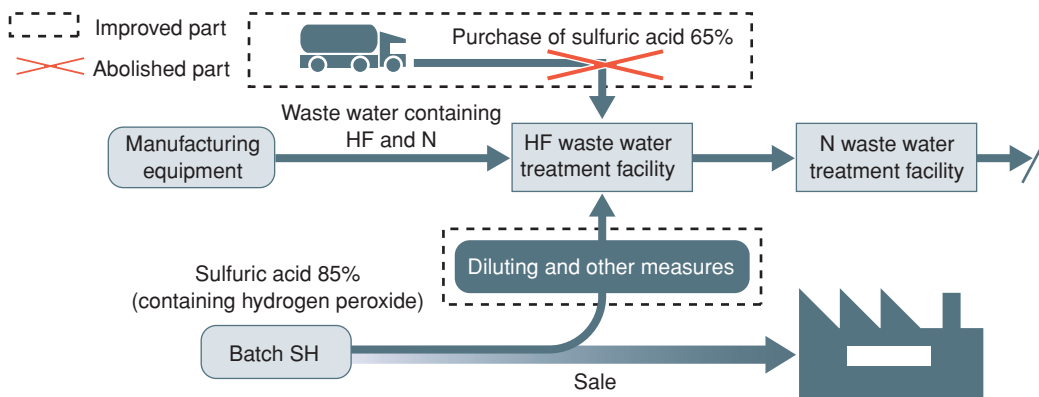
Example of waste reduction at Yokkaichi Operations

Yokkaichi Operations had purchased around 700 tons of industrial sulfuric acid per year to adjust pH of the waste water of hydrogen fluorite.

At the same time, Yokkaichi Operations had produced mixed fluid of sulfuric acid and hydrogen peroxide used in the resist process, and sold 11,000 tons of the fluid to outside manufacturers every year.

Yokkaichi Operations succeeded in diverting the mixed fluid of sulfuric acid and hydrogen peroxide to pH adjustment of the waste water of hydrogen fluorite by administering treatment (diluting and other measures.)

This measure succeeded in reduction of the purchase of sulfuric acid by 700 tons a year and waste by 539 tons a year.



6. Reduction of Environmental Impact of Business Activities

Column 5 3R activities at business sites

“MOTTAINAI (too good to waste) activities” where all employees participate

Each business site of Semiconductor Company Group is developing 3R activities where all employees

participate based on the MOTTAINAI spirit and reducing waste.

Here are examples from Oita Operations and Toshiba Electronics Malaysia.

Opening of a Re-use Shop in Oita Operations

Oita Operations opened a re-use shop so that the employees can experience re-use in a more familiar and convenient manner. Used goods are available in the re-use shelves in the recycling center in the plant and the reuse shop on the internal website. The shop carries tools, parts, desks, chairs, lighting fixtures that were removed by the energy conservation activities and a

large variety of other goods. Since it can be viewed on the website, many employees participate in reuse activities. Oita Operations also introduces reuse to unused goods at the employees' homes, and the activities extended to participation in a bazaar at the autumn festival. Oita Operations will continue to pursue such 3R activities with this MOTTAINAI spirit.



① Available on the website
Instant entries without concern about where to put the goods to be reused Anyone can view it any time.



② Reuse shelves in the recycling center
Reuse shelves are placed in the recycling center to display and offer small supplies



③ “Eco charity bazaar” at the autumn festival in the Plant
All exhibits were sold out and profits were donated.

Examples of reuse

1. 400 fluorescent light bulbs removed for energy conservation by the Manufacturing Division
→ To be used at the power zone
2. Reuse of surplus office supplies
3. Reuse of desks and lockers by divisions that have transferred or are newly established
4. Reuse of large paper files once they were electronically converted
5. Reuse of tools and parts, etc.

“MOTTAINAI activities” overseas (manufacturing company in Malaysia)

Toshiba Electronics Malaysia has proactively developed “MOTTAINAI activities” since FY 2005. This concept has taken firm roots in the company. In addition to the energy conservation discussions among employees, introduction of energy conservation measures in the manufacturing processes and other environmental performance

improvement, their 4S(*) activities have brought about significant improvement.

Toshiba Electronics Malaysia is communicating its activities to stakeholders, and explained the waste reduction programs, water recycling and energy conservation measures when stakeholders visited them in FY 2009



Visits by stakeholders

(*): Seiri, Seiton, Seiketsu, and Seisou meaning in English sorting (discarding unnecessary things), straightening (keeping things orderly and available as needed), sanitation and sweeping (maintaining a clean workplace)

Employee Statement

Oita Operations Facilities Engineering & Operations Dept. Environment Protection Group
Maruono Yoshie



Our activities started from wondering “we can’t buy goods because of the cost reduction. Isn’t there any surplus somewhere?” The re-use shop on the website can be used by anyone easily and its effect should be considerable, but no matter how good a system we may have, if each one of us fails to raise awareness of the MOTTAINAI concept, it would be difficult to continue these activities. I hope to repeat the message of MOTTAINAI to my co-workers and community through the charity bazaars and other events and continue to propose activities that are beneficial to the environment.

Employee Statement

Toshiba Electronics Malaysia Sdn. Bhd. Facility Division **Ngoh Teekwong**



I believe that environmental issues are matters of great importance. Global warming, changing rain patterns, massive floods, land slides, food shortages and loss of lives are happening globally. What these phenomena indicate is that the Earth where we live is not sufficient to fill the desires for natural resources and products of the human race that are constantly increasing. As such, the producer and consumer have important roles to play to ensure that our environment is sustainable. Waste of our natural resources, technology, activities, product and even human talent ...is “MOTTAINAI”. We at Toshiba Electronics Malaysia are making great efforts toward energy conservation, reduction of waste, and developing proactive measures. We introduce our measures for MOTTAINAI activities to the visiting stakeholders and proactively cooperate in information sharing with customers. We plan to continue these activities in the future for a better environment on Earth.

Efficient use of finite water resources is also targeted.

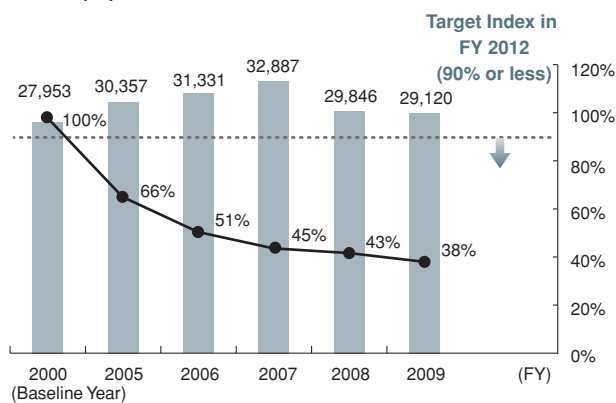
The 21st century is often called “the century of water,” because the world is suffering various water-related problems such as depletion of water resources and water contamination.

Toshiba Semiconductor Company Group has been making efforts to reduce its consumption of valuable water and to prevent this resource from being contaminated, taking regional characteristics into consideration.

As a measure to reduce water consumption, installation of a waterless PFC gas abatement system, specifically a “PFC abatement system that reduces effluent discharge,” is underway. (Please see the column on page 30 for further details.)

Recycling of water has also been realized, resulting in an achievement of 13,000 thousand m³ in volume and 31.0% in recycling rate* in FY 2009.

Amount of water intake (1000 m³) and amount of water intake per unit of output normalized by deflator index (%)



(The above data covers all manufacturing sites in Japan and overseas)

*: Water recycling rate equals *required feed water minus water supplied* divided by *required feed water multiplied by 100 (%)*. (as defined by JEITA (Japan Electronics and Information Technology Industries Association))

7. Environmental Communication

Toshiba Semiconductor Company Group implements environmental communications with an aim toward establishment of a “recycling-based society.”

Through active engagement in communications with local communities, Toshiba Semiconductor Company Group has developed and expanded environmental communication initiatives in many of its global operations.

Another approach is to provide environmental information through the media and exhibitions. A wide range of activities are carried out to introduce the group’s environmental initiatives to stakeholders.

This chapter describes selected examples of our environmental communication and environmental protection activities carried out by certain factories during FY 2009.

Environmental communication activities developed and carried out at factories in Japan

Many Japanese sites are actively engaged with their local communities.

In FY 2009, 3R (Reduce, Reuse, Recycle) efforts such as waste recycling led by Iwate Toshiba Electronics Co., Ltd. were recognized by the Ministry of Environment in Japan and others, and received awards for the promotional merit to establish a recycling-based society from the Ministry for the Environment.



Yokkaichi Operations has conducted eco-internship with the objective to “educate human resources with higher awareness of the environment for the next generation”. The interns experience the management of chemical substances used in the plant and generated waste, environmental analysis, sampling, responsibilities of the environmental auditors, etc. for 2 weeks to deepen their understanding. Students of Mie University, an advanced university for environmental studies, work hard at eco-internship at Yokkaichi Plant during summer vacation in August and September.



Toshiba Oita Operations conducts eco-learning lessons to primary school pupils as a “meeting to come together, enjoy and study the environment”.

At the class, Toshiba Oita Operations offers an environmental quiz, water quality test and other experimental studies so that the pupils feel more familiar with the environment, developing from “I know it” to “let’s do it together” and discussing what each of them can do with one another.

Parents are also invited to the open school and shared the atmosphere with pupils.

Employee Statement

Yokkaichi Operations Facilities Engineering & Operations Dept. Environment Protection Group
Masutani Naoto



What I am particularly concerned with as the liaison for the eco internship is to “create an environment that relaxes nervousness”. When we are at an unfamiliar place, we become nervous at first and tend not to speak up. Since the term of the course is only 2 weeks, 10 minutes or 20 minutes are valuable time. I hold luncheon meetings and talk to them frequently to help them get accustomed to the workshop quickly, speak up proactively and talk actively.



In the “Green Curtain Activities”, Kitakyushu Operations utilizes the seeds of morning glories collected in the previous year to grow a green curtain every year. Kitakyushu Operations distributed the seeds collected last year to primary and junior high schools and other plants in the community this year.

Those morning glory seeds will spread the “circle of green curtains” from Kitakyushu Operations, and the grown tendrils and leaves will soften the fierce summer sunshine and pretty flowers that bloom everyday will touch everyone’s heart.



Iwate Toshiba Electronics Co., Ltd. was recognized by the Ministry of Environment in Japan and others, and received awards for promotional merit to establish a recycling-based society at the national meeting of 3R promotion held by the 3R Activity Promotion Forum in Chiba City on October 16, 2009 for their excellent efforts in 3R of waste materials.

Iwate Toshiba Electronics started the efforts for recycling of waste in 1993, and today they proactively develop the measures to use the sludge from waste water treatment as the raw material for cement, production of solid fuels from waste plastic and waste paper, reduction of waste water sludge generation by recovery and reuse of condensed waste fluorine fluid, etc. and achieved to reduce the final waste disposal rate to 0.02% in FY 2008.

They plan to further execute recycling-based activities in all processes of the business activities and contribute to society.



View of inspection



Inspection by Operations’ General Manager

Himeji Semiconductor Operations conducts plant inspection of the waste disposal consignees every year. This is done independently in compliance with the responsibilities of the consignees stipulated in the Waste Disposal and Public Cleaning Law and they visit the sites and observe the actual treatment processes to confirm that the waste is disposed of appropriately. The inspectors also hold a hearing with the management of the consignees and talk with them directly about the business policies, management conditions, etc. to confirm that the consignees have healthy management systems. The inspectors visited 21 local consignees and since it was confirmed all consignees have no problems, they gave judgment to continue the consignment. The top management of the Operations visited the consignees and carried out management responsibilities.

Employee Statement



Kitakyushu Operations Production Control Dept. Environment Protection Group **Nagase Yumi**

It has been 3 years since we started the “green curtain activities” in Kitakyushu Operations. In the first year, the plants did not grow as we had expected and they failed to make even a shade. Last year, we planted bitter melons with large leaves and morning glories, and they grew to completely cover the trellis and blocked the sunshine. We collected about 15,000 seeds from them. We put the seeds in the lobby and cafeteria for anyone to take home. We received many comments from them, saying “I made a flower bed”, “I planted the seeds”, “they sprouted”, “the tendrils ...”, etc. We truly wish that morning glories from Kitakyushu Operations will grow all over the Northern Kyushu Region.

7. Environmental Communication

Initiatives for protecting natural environment and biodiversity are undertaken in Japan and overseas operations.

Toshiba Semiconductor Company Group also undertakes nature protection initiatives at manufacturing operations in Japan and overseas. For example, active efforts in Thailand factory include

protection of biodiversity through various programs, such as planting trees and shrubs to grow a mangrove forest which serves as a rare and precious habitat for fish, crabs, and other creatures.



Toshiba Semiconductor Thailand conducted a mangrove shrub planting event where a total of 75 people including the employees and their families as well as students participating in the environmental education program of the company in Samutsakorn Prefecture. Mangrove is a collective name of plants that grow in the swamps where seawater comes in and they are seen along the coasts in the tropical zone. The mangrove forests provide valuable habitats for fish and crabs. At this tree planting event, we planted about 3,000 shrubs in the hope that they will provide a home for many small lives.



Iwate Toshiba Electronics has participated in "Toshiba creation of a forest of 1.5 million trees" since 2009. In the first event, a total of 140 people including the relevant personnel of the prefecture and city as well as the employees and their families participated. They planted 1,000 seedlings in a site in Yamaguchi District, Waga Town, Kitakami City. We plan to plant 9,000 trees in 5 years. We will contribute to preservation of a rich natural environment, promote CSR activities and improve environmental awareness in employees through these events.



Kaga Toshiba Electronics Company is one of the participants in a conservation project called "Ishikawa Morizukuri (forestation)". It is an initiative participated in by corporations and citizens in Ishikawa prefecture to carry out various activities, such as planting trees and clearing the underbrush, aiming to bequeath a richer natural environment to future generations. In 2009, a total of 22 participants including employees and their family members joined the events held at the surrounding area of Shiramine on May 31 and at the surrounding area of Yuuhidera Temple on July 12.



Nagasaki Semiconductor Manufacturing conducted a voluntary tree planting event at the site that suffered damages from eruption of Mt. Unzen Fugendake (it erupted on November 17, 1990, first time in 198 years and which caused many casualties) in October 2009. This was an event to recover greenery lost by the eruption of Fugendake. Many employees and their families volunteered to participate in this event and planted 10,000 seedlings of 12 species. We should never forget the disaster caused by the eruption and we will continue to cooperate so that greenery in Fugendake will recover quickly.

Employee Statement

Toshiba Semiconductor (Thailand) Co., Ltd. EQS Division **Siriwan Laokum and her family**



The employees of Toshiba Semiconductor Thailand have been conducting nature preservation activities in recent years. I have participated in these activities for the past 5 years with my husband and daughter. I obtained valuable knowledge of environmental preservation at the last opportunity of mangrove planting event as a natural schooling. I learned that mangroves are not only important to the people but they provide the most valuable habitats for shrimps, crabs, fish and shellfishes. I appreciate such an experience with my family and I plan to continue participation in nature preservation activities.



Planting work with her daughter

Employee Statement

Nagasaki Semiconductor Manufacturing Corporation Facilities Engineering & Operations Dept. **Muraoka Yutaka**



Nagasaki Semiconductor Manufacturing is a joint company of Toshiba and Sony, a new company established in 2008. It is a company of a mixture of different company cultures of Toshiba and Sony, and it is energetic and proactively conducts environmental activities. I participated in the volunteer tree planting in Mt. Unzen Fugendake with my son, a second grader, and we enjoyed planting each seedling carefully. It looked difficult for my son to dig a hole for each seedling for planting, but after he finished planting 12 types of seedlings, he was beaming with happiness. When I saw his smile, I wished he would grow up to be an adult who cherishes nature. I look forward to the growth of the seedlings and my son.

Column

Consideration for biodiversity in the construction of a new plant at Yokkaichi Operations

As introduced in the previous chapter, Yokkaichi Operations in Mie Prefecture started construction of a new semiconductor manufacturing plant in July 2010. At preparation of the premises, we investigated the habitats of rare animals and plants (from the International Union for Conservation of Nature (IUCN) Red List of Threatened Species), made a protection plan and collected information on the neighboring region based on the Natural Environment Preservation Ordinance of Mie Prefecture. We transferred and transplanted the rare species we discovered. We also conducted investigations on the fish and other aquatic lives inhabiting the river where waste water will be discharged. We also plan to build a forest and a park around the new manufacturing

plant to ensure continuity with the surrounding green tract.

★ Rare species whose growth and lives were discovered and measures for them

Lilium Japonicum, Hosta Longissima Honda and Agrostis Valvata

→ Transplanted to area outside the development district (Toshiba's land)

Japanese Fire-bellied Newt

→ Transferred to a water outside the premises upon discovery

Cisones Rufosignatus Sasaji

→ To restore existing plant species in order to reduce effect



Agrostis Valvata



Hosta Longissima Honda

7. Environmental Communication

Various Communication Activities

▶ Communication with Customers

Through participation in various seminars and in exhibitions such as Toshiba Group Environmental

Exhibition and Eco-Products Exhibition, we promote active communication with customers.



Toshiba Group Environmental Exhibition



Eco-Products Exhibition

▶ Environmental public relations and advertisement

As in the previous year, we introduced the environmental activities of Semiconductor Company in

2009 through placing advertisements and granting interviews to newspapers and professional journals.



Source:
Semiconductor Industry Paper,
16th, September 2009



Source: Monthly ENERGY, September 2009



Source: Nikkan Kogyo Shimbun,
25th February 2010



Advertisement explaining water recycling at Semiconductor Company (Appeared at "2010 Semiconductor, LCD Panel, Solar Battery Guidebook in China" March 2010 (Sangyo Times Inc.), "2009 China (Wuxi) International Semiconductor and FPD Industry Expo" held in October 2009, and Semiconductor Company's web-site)

8. Data and Third Party's Opinion

Acquisition of ISO 14001 certification

In August 2010, we acquired integrated ISO 14001 certification^(*) for the Toshiba Semiconductor Company Group (Semiconductor Company of Toshiba Corporation and 21 sites in Japan and 7 sites overseas). We will continue to develop

environmental preservation activities utilizing the PDCA cycle (Plan-Do-Check-Act) with the aim to minimize the impact of our activities to the environment using our globally structured environmental management system

Name of the organization	Certified body	Registration date	Approval certificate No.
Toshiba Corporation Semiconductor Company Head Office District (Head Office Bldg. and Sales Office Sites)	JACO/DNV ^(*)	1996.02.02	EC98J2014
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			
Hamaoka Toshiba Electronics Co., Ltd.			
Himeji Toshiba E.P. Corporation			
Toshiba Components Co., Ltd.			
Kaga Toshiba Electronics Co., Ltd.			
Toshiba Device Corporation			
MT Device Corporation			
Device Link, Inc.			
Toshiba Discrete Semiconductor Technology Corporation			
Nagasaki Semiconductor Manufacturing Corporation			
Toshiba Microelectronics Corporation			
Toshiba Memory Systems Co., Ltd.			
AS Device Co., Ltd.			
NuFlare Technology, Inc.			
Toshiba Electronics Malaysia Sdn. Bhd.			
Toshiba Semiconductor (Thailand) Co., Ltd.			
Toshiba Electronics Europe GmbH.			
Toshiba Electronics Asia, Ltd.			
Toshiba Electronics (Shanghai) Co., Ltd.			
Toshiba Electronics Asia (Singapore) Pte. Ltd.			
Toshiba Electronics Taiwan Corporation			
Toshiba Semiconductor (Wuxi) Co., Ltd.	China Certification Center, Inc	1999.03.31	02107E10248R3M
Toshiba America Electronic Components, Inc.	DNV ^(*)	2010.06.29	80416-2010-AE-USA-ANAB
Toshiba Electronics Korea Corporation	Korean Standards Association	2007.03.14	EMS-0472

Note: (*) The subjects are the main company and all consolidated companies (manufacturing and non-manufacturing) and overseas consolidated companies (manufacturing and non-manufacturing) with 100 employees or more.

(*) JACO: Japan Audit and Certification Organization for Environment and Quality
DNV: Det Norske Veritas AS

Third-party's opinion

Tamio Yamaguchi, president of Workers Club for Eco-harmonic Renewable Society* (nonprofit organization)

This report is 8 pages longer than the last year's and has a content that can meet the expectation of the general public and environmental specialists. Such drastic improvement cannot be made with mere trickery. This is the fruit of the carefully worked-out preparation of deciding the editorial policy and content of the report, including preparation of correlative chart matrix of the report contents and stakeholders, benchmarks of environmental reports from overseas manufacturers, feedback from the holders of report commendation system, third party opinions from last year and the result of communication both in and out of the company.

They offered me opportunities to exchange opinions a total of 4 times. My opinions were discussed in the company and they decided on specific measures. Most of them were reflected in the 2010 version, and for those that were not adopted, they clearly indicated the reason and defined them as the issues for the next year and onward. As for the 5 items including the execution conditions of Toshiba comprehensive environmental audit regarded as important in this report, in particular, they listened to opinions of myself and other members of this research committee and made other efforts to proactively adopt third party evaluations. I am convinced that such well worked-out preparation and the attitude to proactively request third party evaluation have led to drastic improvements in this report.

What I found most impressive after reading this report is that they held up a superior plan, proactively endeavored for achievement and succeeded in creating excellent results. I can also read the factor index from the report at the same time.

First, I learned that the strong commitment of the top management, namely that "we will assess the impact caused by business activities on the environment in a comprehensive viewpoint that includes biodiversity, and make various efforts to reduce the impact on the environment" is a driving force here. I can also tell that they have a system to share information on good environmental preservation measures horizontally throughout the organization and an effective framework of horizontally developed projects in order to make this commitment reality. Furthermore, there is a detailed description of *EASTER*, the original environmental audit to improve the environmental performance.

Reporting of individual efforts in this great context is one of the factors that gives readers the feeling of fulfillment after reading this report. It is a complete opposite of patchwork-like reports.

Preservation of biodiversity has become an important theme together with reduced contribution to global warming, and I mentioned it in the third party opinion in last year's report. In this year's report, it was mentioned in the foreword, and there is a description of execution of consideration to biodiversity at construction of a new plant in Yokkaichi Operations as a specific example. I cannot

comment on the details of the "transplanted outside the development district" from this article, but it can be called "biodiversity offset". Many countries including EU members and the USA have and execute an offset system, but it has only just taken root here in Japan. I expect that they will analyze how business processes affect biodiversity and start measures against any adverse impact.

This report clearly states that "the objective is to report in an easy to understand manner" in the editorial policy. It certainly carries detailed remarks and uses graphs and photographs effectively. When I look at the details, however, there remains room for further improvement and I hope they will make more efforts. This is because even small doubts could deter ease in understanding when accumulated. One example is the description of the plans. It has mixed expressions such as "to achieve ___% of the standard" and "to reduce by ___% of the standard" which makes it difficult to understand and it would be better to show absolute numerical values. I believe this was a result of compliance to the targets in the industrial entities and groups, but I believe ease of understanding by readers should be given priority above consistency in view of the management. It is also necessary to add explanation of the reasons for mixed quoting of actual production amounts and nominal production amounts.

They proactively develop bilateral communication and its purpose is to "ask for opinions and utilize them in our environmental activities" as described in the foreword. I cannot see, however, the voices of the stakeholders other than the employees nor reports of examples for which they are specifically utilized in the environmental activities. As I stated at the beginning of this opinion, since the company culture to eagerly and proactively listen to the stakeholders' opinions has firmly been established, I expect they will hold verbal meetings with stakeholders with strong awareness of proactive listening to opinions and how to utilize them.

Finally, as I mentioned last year, I sincerely wish the report to develop with CSR in mind. It would be prudent to refer to the ten principles of the Global Compact to which Toshiba is a signatory.

* Workers Club for Eco-harmonic Renewable Society is a civic association aiming to consider and discuss, from a global point of view, how to create an ideal society in harmonization with the ecosystem to be passed on to the next generation. The group also studies and supports the implementation of various regional approaches toward the establishment of a recycling-based society involving citizens, businesses, and governments.

URL: <http://www.nord-ise.com/junkan/>

In response to the third-party's opinion

We received a third party's opinion from Representative Yamaguchi of the Workers Club for Eco-harmonic Renewable Society* again this year.

This year is the memorable 5th year of issuance of the environmental report of Toshiba Semiconductor Company Group, and we aimed to make a report with both ease of understanding and details so that our environmental activities will be better understood compared to before. We believe we have been awarded a certain level of fine evaluation but we received indication that some articles fell short of consideration to ease of understanding by the readers. We also received an opinion of expectation for utilization of the verbal meetings with stakeholders both in and out of the company. We plan to make improvement through management review and other measures and will further implement environmental management in order to reflect those indications and opinions in our future environmental activities.

Editor's Note

Thank you very much for reading the "Environmental Report 2010."

We requested a third party's opinion to Mr. Yamaguchi, Representative of an NPO: Workers Club for Eco-harmonic Renewable Society for the second consecutive year, and received indications on the parts that require correction based on the improvement points and the PDCA cycle in the previous occasions, and also obtained valuable knowledge.

In this environmental report, we also gave more detailed descriptions of *EASTER* audit and 3R (reduce, reuse and recycle) in order to have the readers better understand the activities on the local site level. We will continue to provide environmental preservation information to our stakeholders through various channels including the environmental report. Should you have any questions regarding our activities and this report, please feel free to contact us through the URL listed below. Thank you very much in advance for your continued support of Toshiba Semiconductor Company.

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

Environment Planning Promotion Division
Semiconductor Company of Toshiba Corporation



TOSHIBA CORPORATION SEMICONDUCTOR COMPANY

ENVIRONMENTAL REPORT

2010

- 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>