

TOSHIBA



TOSHIBA ENVIRONMENTAL REPORT

2003



C O N T E N T S

	Message.....	1
FOREWORD	For readers.....	2
	Environmental management.....	4
	Environmental management of Digital Media Network Company.....	6
1. Toward sustainable development (CORE ACTIVITIES)	Toshiba Group's Environmental Impacts	8
	Environmental accounting.....	10
	Voluntary Action Plan	12
	Environmental audits.....	13
	Environmental measures for logistics.....	14
	Toshiba's Commitment Overseas.....	15
2. Environmental considerations in business activities (ECOFACTORY)	Environmental considerations in business activities.....	16
	Control of chemical substances.....	18
	Zero emission of waste.....	20
	Response to soil and groundwater pollution.....	21
3. Environmental considerations regarding products (ECOPRODUCTS)	Environmentally conscious products.....	22
	Refrigerators/Air conditioners.....	24
	Personal computers/Cellular phones.....	25
	Double-deck elevator/Medical equipment.....	26
	Copiers/Compact self-ballasted fluorescent lamp.....	27
	Gas insulated switchgear/Steam turbine steel blades.....	28
	Green procurement.....	29
4. Environmental considerations at recycling (ECOCYCLE)	Recycling of household appliances.....	30
	Recycling of personal computers.....	31
5. Economic development attuned to the environment (FINANCIAL REPORT)	Financial performance.....	32
	R&D.....	33
	Comprehensive solutions for the environment.....	34
6. Coexistence with the community (SOCIAL REPORT)	Human resources.....	36
	Toshiba Standards of Conduct.....	37
	Safety control and health care rooted in respect for the individual.....	38
	Environmental education.....	39
	Environmental communication.....	40
	Working with communities for a better environment.....	42
	Glossary.....	43
IN CLOSING	Third-party review of environmental accounting.....	44
	Third-party review of Toshiba Environmental Report 2003.....	45
	Toshiba Group's PRTR data for individual business premises.....	46
	History of Toshiba's environmental protection activities	
	Scope of Toshiba Environmental Report 2003	

■ Corporate profile

Company name..... Toshiba Corporation
 Headquarters..... 1-1-1 Shibaura, Minato-ku,
 Tokyo 105-8001, Japan
 Founded..... July 1875
 Number of employees. Non-consolidated: 39,875
 Consolidated: 165,776
 (as of March 31, 2003)
 Group..... Number of consolidated
 subsidiaries: 315
 201 companies in Japan and
 114 companies overseas
 Fiscal year end..... March 31 of each year

Number of shares authorized. 10,000,000,000
 Number of shares issued..... 3,219,027,165
 Paid-in capital..... ¥274,926 million
 Number of shareholders..... 486,702
 Stock exchange listings..... Tokyo, Osaka,
 Nagoya, Fukuoka,
 London*, Luxemburg,
 Amsterdam*, Frankfurt,
 Düsseldorf, Paris,
 Switzerland
 (*Underlying stock)
 Stock code..... 6502

Of the 315 consolidated subsidiaries, this Environmental Report covers those with the greatest environmental impacts, namely, the 66 companies (mainly manufacturing subsidiaries) listed on the final page of this report, although the extent of coverage varies. Three boundaries are employed in this report:

- ①Toshiba Corp. and its 66 affiliated companies ((see the final page of the report))(e.g.environmental accounting on Page 10)
- ②Toshiba Corp. and the four spun-off companies ((see the final page of the report)) (e.g. PRTR on Page 46)
- ③Toshiba Corp. (e.g. prevention of global warming on Page 16)

It is important to bear in mind the boundary applicable to the data on any given page.



President and Chief Executive Officer

Tadashi Okamura

Message

Though their values may differ, individuals, enterprises, communities and countries around the world are tackling environmental issues with a growing sense of urgency.

At Toshiba, inspired by the Toshiba Group slogan—"Committed to People, Committed to the Future. Toshiba"—we are acting based on our conviction that humankind has a fundamental responsibility to bequeath the irreplaceable global environment in a flourishing condition to succeeding generations. Furthermore, Toshiba is fully aware that companies have important roles to play in solving environmental problems.

With the aim of proactively contributing to the establishment of a recycling-based society, Toshiba Group has been implementing its Third Voluntary Environmental Plan, announced in fiscal 2000. In fiscal 2002 we achieved a great deal in five areas: effective utilization of resources, prevention of global warming, strengthening control of chemical substances, development of environmentally conscious products and recycling of end-of-life products. In particular, we have achieved zero emission of waste 18 months earlier than originally targeted.

During the past two years Toshiba Group has been implementing the "01 Action Plan*" to strengthen its management base. At the same time, thanks to the progress we have achieved in integrating environmental management into business management, all of us have been tackling environmental issues in an effort to discharge our responsibilities both as committed members of Toshiba Group and concerned citizens. As we advance into a new era in which ubiquitous computing* will underpin society, Toshiba is resolved to position the tackling of global environmental issues as a key management task, and on that basis, to achieve sustainable development.

In a globalizing economy, in our role as a leading manufacturer focused on product development, manufacturing, usage and recycling, Toshiba Group is committed to taking the initiative in establishing a sustainable society. Environmental considerations are built into every Toshiba product and process, not least because we relish the opportunity to work for a better future for everyone on the planet.



We will be delighted if Toshiba Environmental Report 2003 deepens your understanding of the extent and nature of Toshiba's commitment to the environment and our future direction. Environmental activities are at the heart of our drive to earn the positive recognition and confidence of all our stakeholders*. We warmly welcome your comments and suggestions.

FOREWORD

For readers

※ This section describes Toshiba's approach to environmental protection activities and explains the editorial policy and topics of Toshiba Environmental Report 2003. It will help you grasp the outline of the report so that you can proceed directly to the details of any subject of interest.

Integral to the product-development process at Toshiba are a searching examination of the impact of usage of the contemplated product and an effort to maximize recyclability and/or ease of disposal when the product reaches the end of its life. As a practical expression of Toshiba Group's slogan –"Committed to People. Committed to the Future. Toshiba"– we are striving to reduce our impact on the Earth's environment. Concretely, our efforts encompass effective utilization of resources, prevention of global warming, strengthening of control of chemical substances, development of environmentally conscious products, and recycling of end-of-use products. These activities are underpinned by environmental accounting, environmental audits and environmental education, and furthermore, a proactive approach to the disclosure of environmental information. Thus, Toshiba is at the forefront of the drive to make the recycling society an everyday reality.





Editorial policy

Toshiba Environmental Report 2003 mainly presents the results of Toshiba Group's environmental protection activities in fiscal 2002. This is the fifth issue of Toshiba Environmental Report. The editing of this report reflects the GRI Sustainability Reporting Guidelines 2002 and the Guidelines for Environmental Performance Indicators for Businesses (fiscal 2002 version) published by the Ministry of the Environment, Japan. From the current issue, Toshiba Environmental Report includes reports on Toshiba's financial performance and social activities. We are aware that the current issue does not have all the attributes required for a sustainability report, and we will continue to work so as to bridge the gap by keeping a close eye on the trends concerning corporate social responsibility (CSR)* and by examining the items included in the guidelines.

Overall, we intend to place environmental accounting at the heart of Toshiba Environmental Report. Our aim is to identify environmental management issues by evaluating and analyzing our activities so as to reduce environmental impacts at each phase from product development, to manufacturing, usage and recycling, by means of environmental accounting. The issues identified and various measures implemented are described in this environmental report. Based on the assumption that this report will mainly attract a well-informed readership, we sought to provide detailed and precise information. However, to accommodate the needs of a diverse readership, we have included a glossary and plenty of illustrations and diagrams so that the outline can be grasped without reading the entire text.

Topics

つくる ECOFACTORY

Page

● Prevention of global warming

Energy saving in fiscal 2002 was equivalent to 20,700 t-CO₂.
Energy-saving measures at clean rooms are featured.

16

17

● Control of chemical substances

PRTR data for all operations of Toshiba Corp. and the main operations of four spun off companies are disclosed.

18

19

● Zero emission of waste

In aggregate, domestic operations achieved zero emission.

20

● Response to soil and ground water issues

In fiscal 2002 approximately 1,100kg of organochlorine solvent was recovered.

21

つかう ECOPRODUCTS

Page

● Commitment to development of environmentally conscious products

The process flow for creation of environmentally conscious products is shown and environmental performance data for products are disclosed.

22

23

● Energy saving award

Toshiba air conditioners for use in stores won the Director-General's Prize of the Agency for Natural Resources and Energy for the third consecutive year.

24

● CFC-free refrigerator advances

In addition to protection of the ozone layer and energy saving, the new refrigerator contributes to a reduction in food waste.

24

かえす いかす ECOCYCLE

Page

● Recycling of home appliances

The total number of units of the four types of home appliances recycled amounted to 1.56 million, an increase of 16% from the previous year.

30

● Recycling of PCs

Data on recycling of waste personal computers discharged by business users are presented and our activities concerning waste personal computers discharged by consumers are introduced.

31

CORE ACTIVITIES

Page

● Environmental management

The proactive stance of the environmental management of Digital Media Network Company is presented.

6

7

● Environmental accounting

Environmental costs amounting to 29.6 billion yen (a decrease of 6.1 billion yen from the previous year) resulted in environmental impact reduction benefits worth 39.6 billion yen (an increase of 3.0 billion yen from the previous year).

10

11

● Environmental voluntary plan

In the two years since the launch of the third voluntary plan, new issues have emerged.

12

● Environmental measures for logistics

A flexible vehicle assignment system resulted in a 25% reduction in the number of vehicles.

14

ECONOMIC PERFORMANCE

Page

● Financial results

Consolidated net sales were 5,655.8 billion yen, up 5% from the previous year, and consolidated operating income was 115.5 billion yen.

32

● R&D

The Environmental Engineering Lab. was established with the aim of developing new technologies and contributing to the achievement of harmony between the environment and economic activities.

33

SOCIAL PERFORMANCE

Page

● Toshiba Standards of Conduct

Toshiba has established standards of conduct concerning relations with local communities and prohibition of inappropriate expenses.

37

● Information disclosure

Toshiba is committed to a proactive approach concerning disclosure of information on its environmental activities by means of holding of environmental exhibitions and events involving local communities. Feedback from stakeholders is also featured.

40

41

Note: Numbers in circles indicates the page numbers concerning the item.

Environmental management

Since the Earth's environment is humankind's life-support system, issues associated with it are intimately involved with the very foundation of our existence. Given that natural resources are finite, the orientation of society and the economy toward mass production, mass consumption and mass disposal needs to be tempered by adherence to other values. Throughout its operations, Toshiba has embraced preservation of the Earth's environment for future generations as a top priority. We are convinced that economic activities should be informed by the knowledge that our planet's resources and capacity to absorb waste are limited. Mindful of our responsibility to future generations, we are making a concerted corporate-wide effort to utilize resources with the utmost efficiency. As an enterprise committed to sustainable development, Toshiba is resolved to raise consciousness as well as innovate technology.



Basic policy for environmental protection

Toshiba Corporation recognizes that the Earth is an irreplaceable asset, and that it is humankind's duty to hand it on to future generations in a sound state. Therefore, Toshiba promotes environmental protection activities, in a technically and financially appropriate way, and in accordance with the Basic Commitment of Toshiba Group and this Basic Policy for Environmental Protection.

- (1) Toshiba considers environmental protection to be one of management's primary responsibilities.
- (2) Toshiba specifies objectives and targets for its business activities, products and services with respect to the reduction of environmental impacts and prevention of pollution.
- (3) Toshiba strives to continuously improve the environment through vigorous implementation of environmental measures.
- (4) Toshiba contributes to society through its environmental protection activities, which include the development and supply of excellent, environmentally conscious technologies and products and cooperation with the local community.
- (5) Toshiba complies with all laws and regulations, industry guidelines which it has endorsed, and its own standards for environmental protection.
- (6) Toshiba recognizes that natural resources are finite and promotes their efficient utilization.
- (7) Toshiba strives to enhance the awareness of all its employees with respect to the environment and requires that they make a practical contribution to environmental protection through their work.
- (8) Toshiba operates globally, and accordingly, promotes environmental activities throughout Toshiba Group.



Environmental protection system

With the aim of enhancing the commitment to environmental protection throughout Toshiba Group and making it integral to the operation of every Toshiba Group company, Toshiba set up the Corporate Environmental Protection Council in 1991. Chaired by an executive officer responsible for environmental protection throughout Toshiba, the council has a wide-ranging brief: it proposes solutions to environmental problems affecting management,

technological development, production and sales, determines basic policies, and reviews the progress of in-house companies and operations.

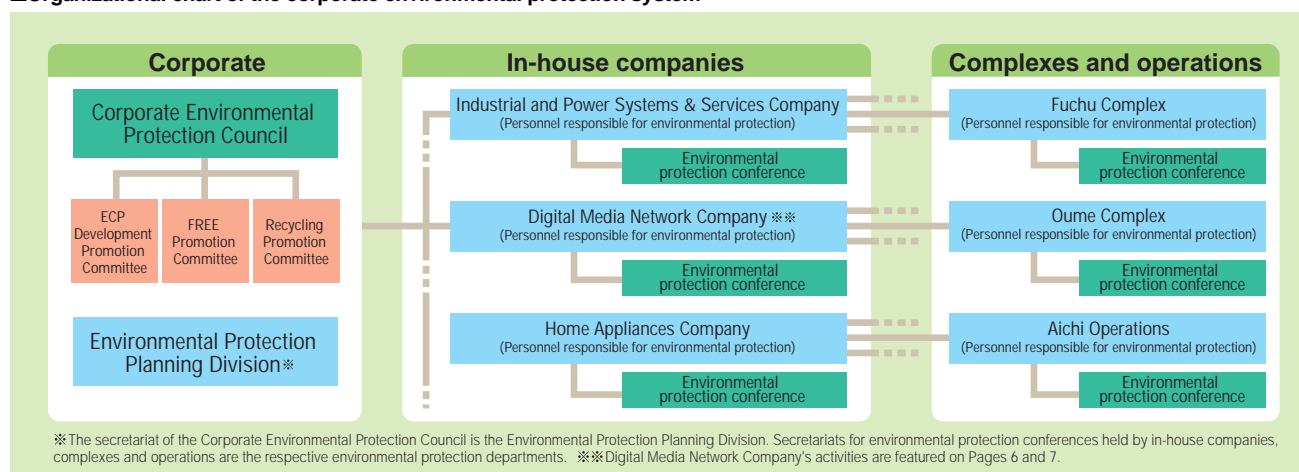
Its subordinate organizations include the Environmentally Conscious Products (ECP) Development Promotion Committee, which promotes development of environmentally conscious products and technologies, the FREE Promotion Committee, which promotes environmental protection at operations, and the Recycling Promotion Committee. Individual in-house companies and

operations hold environmental protection conferences at which goals are set and projects launched with respect to specific products and regions.



Corporate Environmental Protection Council

Organizational chart of the corporate environmental protection system



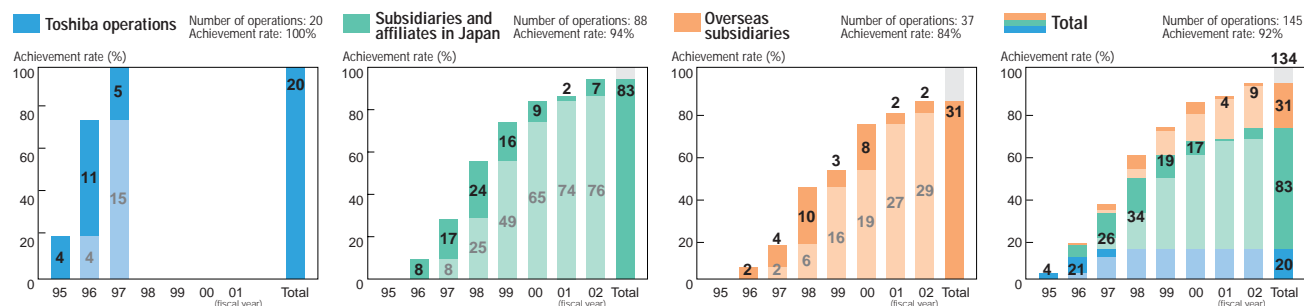
Environmental management system

ISO-14001* certification, the international standard for environmentally friendly systems and processes, is designed to promote sustainable economic development and an equitable apportionment of responsibilities among countries. The certification process requires that companies maintain a system to evaluate

the environmental impact of their operations and products, and make continuous efforts to improve their environmental performance. Toshiba considers ISO-14001 certification to be a passport to inclusion in the ranks of the world's most environmentally responsible enterprises. As shown below, Toshiba's commitment to gaining this environmental certification dates back several years. By September

1997 all 20 of Toshiba Corp.'s operations had gained ISO-14001 certification and have maintained that certification ever since. Of the 88 operations of affiliated companies in Japan, 83 operations have gained ISO-14001 certification. Of the 37 operations of Toshiba's overseas subsidiaries, 31 operations have gained certification and we are working to achieve certification for all our overseas facilities.

ISO-14001 certification (as of March 31, 2003)



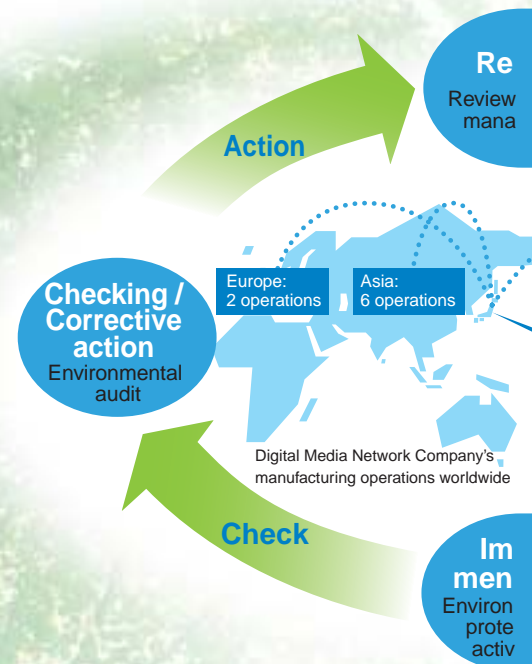
Environmental management of Digital Media Network



Yoshihiro Nitta
President
Environmental Officer
Digital Media Network Company

Message

Digital Media Network Company produces televisions, personal computers, and other IT and visual equipment incorporating its own cutting-edge technology. Mindful of our social responsibility, we are an enterprise committed to ensuring that customers can place the utmost confidence in us as a source of environmentally conscious products. To that end, we endeavor to minimize the environmental impacts of our business activities. We are resolved to enhance our environmental activities in order to achieve sustainable growth.



By placing the environmental management system's Plan-Do-Check-Action cycle at the heart of our environmental activities, we are working to save energy, reduce waste and reduce use of chemical substances. Our product development process involves

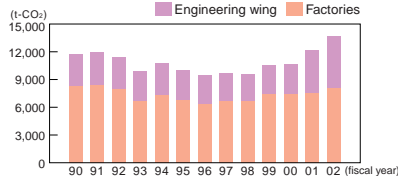
ECOFACTORY

Environmental considerations concerning business activities

Prevention of global warming

Although energy consumption increased due to opening of a new engineering wing, we are working to reduce CO₂ emission by improving the operating efficiency of facilities.

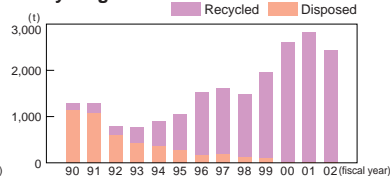
CO₂ emission



Zero emission of waste

The amount of waste for final disposal was reduced to 0.2% of the total amount of waste generated thanks to enhanced recycling.

Recycling ratio



Environmental considerations concerning products

Elimination of use of regulated substances for products

- Response to WEEE & RoHS European regulations
- Promotion of green procurement

Product design assessment

Evaluation of product lifecycles (energy saving, resource saving, recyclable design, etc.)

Environmentally-friendly technology



Adoption of lead-free soldering



Adoption of halogen and antimony-free printed circuit boards

Core activities

Environmental education

- Environmental education for employees
- Emergency drills

Social activities

- Clean-up of the neighborhood adjacent to operations
- Fundraising for planting greenery

Information disclosure

- Environmental accounting
- Publishing of site reports
- Participation in exhibitions
- Website



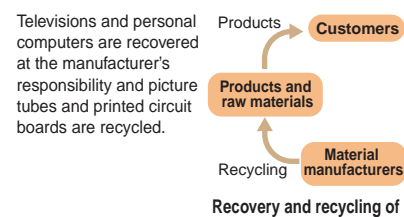
Emergency drill



Fundraising activity

ECOCYCLE

Recovery and recycling of end-



Development of recycling techn

Environmental education

Television using recycled materials
Recycled plastics are used for television parts.



Television parts made of recycled plastics

Environmentally

Reduction in use of substances having environmental impacts / Obtaining of eco labels



Desktop PC



Notebook PC



PC Green Label

Reduction in use of substances having environmental impacts / Recyclable design



Hard disk drive



Optical disk drive

Energy-saving design



IA server



DVD recorder/player

Company



thorough examination of the impact of usage of a contemplated product. Moreover, we are developing new technologies to achieve recycling of resources so that products that reach the end of their lives can be recycled as resources and be reborn as new products.

of-use products



ology

Recycling of personal computer chassis

We developed closed recycling technology for recycling of plastic PC cases for the same application.



Ome Complex



Founded: January 1968

Number of employees: 3,100 (as of April 2003)

Site area: 119,979 m²

Main products: Personal computers, hard disk drives, optical disk devices, IA servers, mobile audiovisual products, digital cameras, and DVD recorders/players

Fukaya Operations-Digital Media Network



Founded: April 1965

Number of employees: 610 (as of April 2003)

Site area: 288,000 m²

Main products: Digital televisions, LCD televisions, plasma televisions, LCD projectors, BS/CS digital tuners, and cameras for commercial use

ECOPRODUCT

Energy saving of PCs

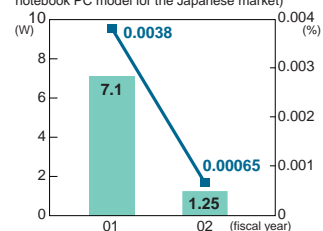
The higher the performance of a PC, the greater its power consumption tends to be. We have realized energy-saving high-performance PCs by improving the coefficient of performance per function.



When this energy-saving benefit is multiplied by the number of notebook PCs produced by Toshiba in fiscal 2002 in Japan, energy saving equivalent to annual power consumption of 18,000 households is achieved.

Power consumption per function

(In the case of the most heavily shipped A4-size notebook PC model for the Japanese market)



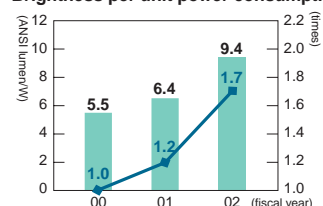
*Coefficient of performance in accordance with the Energy Saving Law

Energy saving of LCD data projectors

Adoption of a high-aperture LCD panel has improved the brightness per unit power consumption 1.7 times compared with a conventional product. As a result, sufficient brightness can be achieved with less power.



Brightness per unit power consumption



*Improvement rate (times)

conscious products



Portable DVD player



Pocket PC



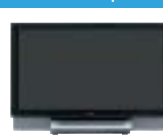
Mobile audio



Digital camera



LCD projector



Plasma TV



LCD TV



Symbols of Energy Conservation Labels

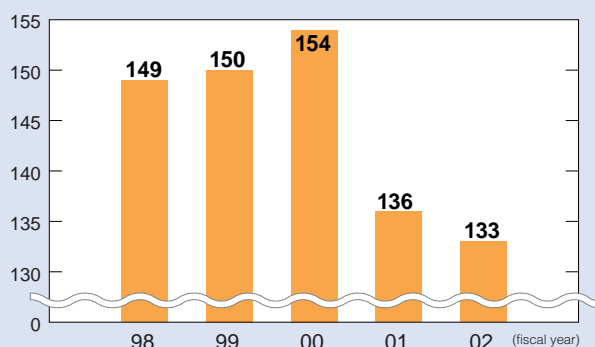
1 Toward sustainable development

Toshiba Group's Environmental Impacts

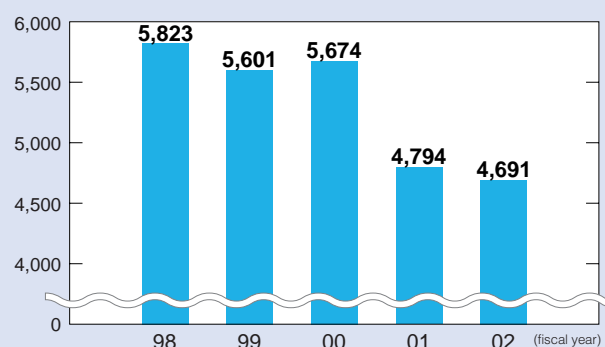
Toshiba Group manufactures and sells a great variety of electronic and electric products ranging from heavy electrical apparatus to consumer electronics, and from information and communications equipment to semiconductors and other electronic components. Among these products, environmental impacts differ widely. This section provides an overview of the environmental impacts of Toshiba Group. These environmental impacts are utilized as indices for verifying sustainability. The figures show 5-year trends of inputs of energy, water and chemical substances, and of outputs, such as environmental impacts* on water and the atmosphere and discharge of waste. Toshiba intends to expand collection of data that can be utilized for efforts to reduce the environmental impacts of its activities. These data are significant components of indices of environmental protection benefits in the environmental accounting of Toshiba Group.

INPUT

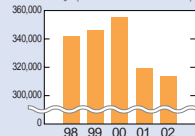
■Energy: Calculated in CO₂ (ten thousand t-CO₂)



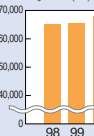
■Water (ten thousand m³)



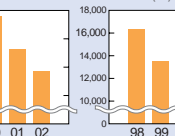
Electricity (ten thousand kWh)



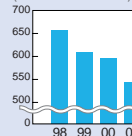
Heavy oil (kl)



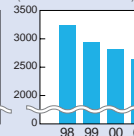
Kerosene (kl)



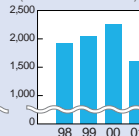
City water (ten thousand m³)



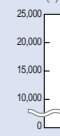
Industrial water (ten thousand m³)



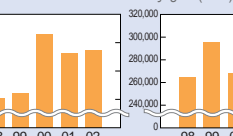
Ground water (ten thousand m³)



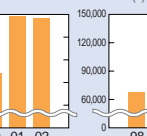
LPG (t)



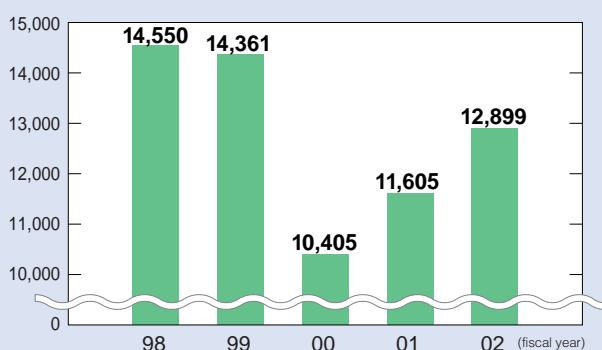
City gas (km³)



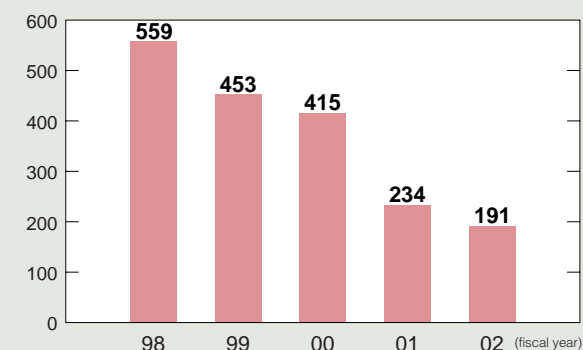
Steam (t)



■Chemical substances** : Amount used (t)



■Chemical substances: Amount released to the environment (t)





※Environmental impact data are tabulated results of Toshiba Corp. and its 66 subsidiaries and affiliates listed at the end of the report.

※※Data on chemical substances are data for substances subject to PRTR*(refer to pages 46 to 48). Data up to fiscal 1999 are for Toshiba Corp. on a non-consolidated basis for 179 types of substances, and data for fiscal 2000 onward are for Toshiba Corp. and four other companies (Toshiba TEC Corp., Toshiba Lighting & Technology Corp., Toshiba Carrier Corp., Toshiba Elevator and Building Systems Corp.,) for 354 types of substances.

※※※Water environmental impact is calculated as follows: annual average value of the measured concentration of a substance at the drain mouth multiplied by total drain discharge for the year. In the case that measured concentration is less than the lower detection limit, 1/2 of the lower detection limit is used as concentration for calculation.

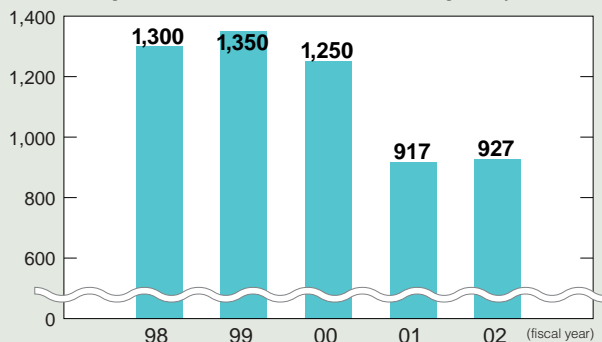
These data constitute the basis of environmental accounting.

Because the coverage of the environmental report changes every year due to reshaping of the business etc., simple comparison with the data in the previous year's report is impractical.

OUTPUT

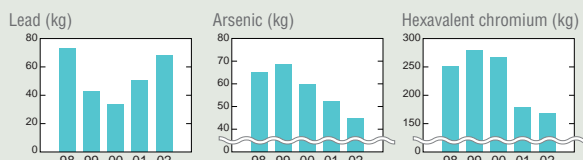
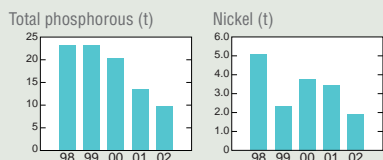
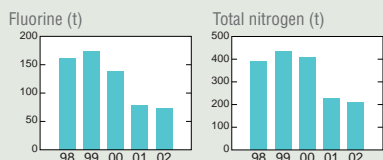
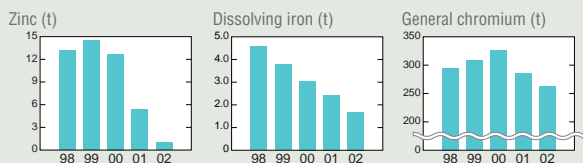
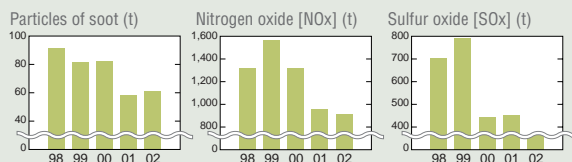
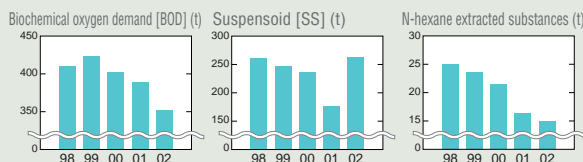
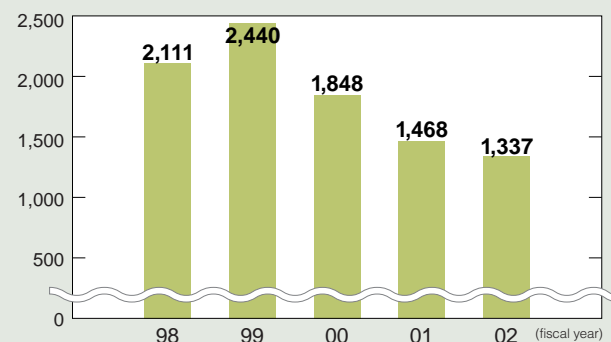
Water environmental impact *** (t)

[Annual average value of measured concentration × total drain discharge for the year]

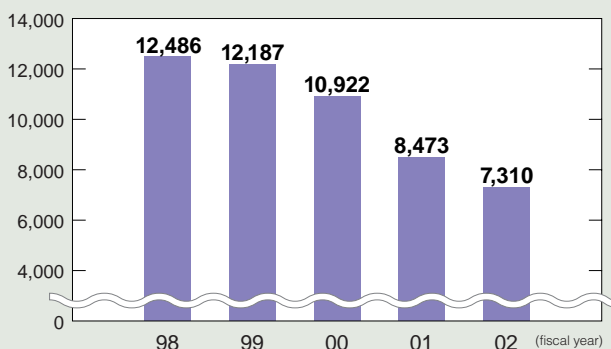


Atmospheric environmental impact

[Annual average value of measured concentration × total gas discharge for the year]



Final disposal of waste (t)



Environmental accounting

Costs and benefits ● Aggregated... Toshiba Corp. and 45 domestic subsidiaries and affiliates and 21 overseas subsidiaries
● Period..... April 1, 2002-March 31, 2003

● Environmental costs

Millions of yen

Classification	Content	Expenditure	Costs	Change in costs from fiscal 2001
Business area costs	Reduction of environmental impacts ①~③	4,155 (1,896)	14,240 (8,984)	539 (△912)
① Pollution prevention costs	Prevention of pollution of atmosphere, water, soil, etc.	1,518 (710)	7,895 (5,320)	△103 (△473)
② Global environmental protection costs	Prevention of the greenhouse effect, protection of the ozone layer, etc.	2,112 (887)	1,969 (1,237)	639 (304)
③ Resource circulation costs	Effective utilization of resources, reduction of volume of waste, etc.	525 (299)	4,376 (2,426)	3 (△743)
Upstream/downstream costs	Green procurement, recycling, etc.	171 (0)	943 (190)	863 (383)
Management activity costs	Environmental education, maintenance of EMS, planting of greenery at factories, etc.	224 (48)	5,808 (3,156)	187 (△58)
R&D costs	Development of environmentally conscious products	1,054 (565)	7,795 (3,346)	△13 (△1,816)
Social activity costs	Support of environmental activities, contributions, etc.	2 (0)	17 (6)	△12 (2)
Environmental damage costs	Recovery from soil pollution, etc.	208 (200)	787 (586)	△7,714 (△7,871)
Total		5,814 (2,709)	29,590 (16,268)	△6,150 (△10,272)
Total expenditure during the period		190,200 (88,700)		
Total R&D expenditure during the period		331,494 (269,757)		

Figures in parentheses are figures for Toshiba Corp. on a non-consolidated basis

Basic framework

In fiscal 1999 Toshiba introduced environmental accounting in order to quantitatively grasp the costs and benefits of environmental protection and utilize the quantitative data as guidelines for business activities.

Classification of environmental costs and the calculation criteria are in accordance with the Environmental Accounting Guidelines Year 2002 edition issued by the Ministry of Environment, Japan.

Regarding benefits, since no unified standards have been established, environmental impact reduction benefits are indicated quantitatively and also calculated in monetary value in Toshiba's environmental accounting.

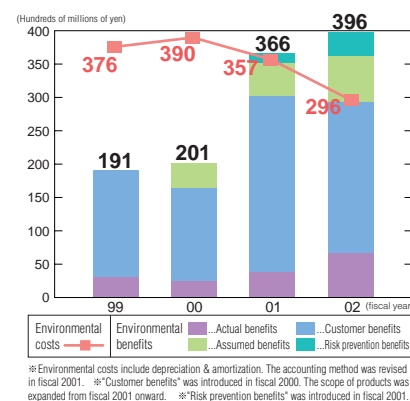
The above table shows the aggregate result for fiscal 2002. The environmental costs decreased about 20% from fiscal 2001 mainly due to the decrease in the environmental damage costs and amounted to 29.6 billion yen. Also, because certain

operations were spun off, the expenditure and the expenses of Toshiba Corp. on a non-consolidated basis decreased and those of affiliated companies increased. Meanwhile, environmental benefits increased about 10% from fiscal 2001 to 39.7 billion yen. Although the assumed benefits decreased, the other three types of benefits increased.

As shown in the graph indicating the trend for the four years, environmental costs are on a downward trend because newly incurred costs have been gradually decreasing due to the accumulation of activities. On the other hand, all types of environmental benefits—actual benefits, assumed benefits, customer benefits and risk prevention benefits—are on an upward trend, reflecting the environmental activities promoted at individual operations over the years, introduction of new products that have less environmental impact, study of effective utilization of waste, and achievement of zero emission of

waste*. Since the result indicates that a greater reduction in environmental impact was achieved at less cost, we think the effect of our routine environmental measures has become apparent.

In order to ensure the accuracy and transparency of data, Toshiba has commissioned a third-party review of its environmental accounting by Shin Nihon Environmental Management and Quality Research Institute. (See Page 44.)



● Actual benefits

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

● Basis for calculation of assumed benefits

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 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 impacts 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 impacts is calculated in terms of monetary value to enable

comparison of various environmental impacts on the same basis.

● Basis for calculation of customer benefits

Benefits of reduction of environmental impacts of products throughout their life cycles are calculated in terms of physical quantity units and monetary units. A life cycle comprises several phases: 1) procurement of raw materials, 2) manufacturing, 3) transport, 4) use, 5) collection, 6) recycling and 7) appropriate processing. Toshiba's environmental accounting focuses on the benefits of reduction of environmental impacts at the use phase. Energy-saving benefits are calculated using the following formula:

$$\text{Benefits (yen)} = \sum [(\text{power consumption per year of the former model} - \text{power consumption per year of the new model}) \times \text{number of units sold per year} \times \text{benchmark unit price of electricity charge}]$$

● Basis for calculation of risk prevention benefits

Benefits of investment in environmental structures, such as dikes, 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:

$$\text{Risk prevention benefits} = \text{Quantity of chemical substances stored} \times \text{Standard amount (monetary value) required for purification and restoration} \times \text{Impact coefficient} \times \text{Occurrence coefficient}$$

where the standard amount required for purification and restoration and the occurrence coefficient are values unique to Toshiba. Risk of occurrence of leakage of chemical substances etc. is evaluated.



● Environmental benefits

Millions of yen

Classification	Classification	Toshiba	Affiliated companies	Total
Actual benefits	Benefits that can be directly converted into monetary value, such as reduced charges for electricity, water, etc.	5,139	1,435	6,574
Assumed benefits	Benefits concerning reduction in environmental impacts expressed in monetary value	12,242	10,467	22,709
Customer benefits	Reduction of environmental impacts at the usage phase expressed in monetary value	1,551	5,316	6,867
Risk prevention benefits	The extent to which risks are reduced after the investment compared with before the investment is calculated	2,512	950	3,462
Total		21,444	18,168	39,612

(1) Breakdown of actual benefits

Millions of yen

Item	Amount of reduction in environmental impacts*	Monetary value of benefits
Energy		
Toshiba Corp.	1,757,391GJ**	3,455
Affiliated companies	△1,016,426GJ	△205
Total	740,965GJ	3,250
Waste		
Toshiba Corp.	333t	1,287
Affiliated companies	834t	1,606
Total	1,167t	2,893
Water		
Toshiba Corp.	2,160,546m³	397
Affiliated companies	△1,242,191m³	34
Total	918,355m³	431
Total		6,574

(2) Breakdown of assumed benefits

Millions of yen

Item	Amount of reduction in environmental impacts*	Item
Environmental impact reduction benefits at the manufacturing phase		
Toshiba Corp.	66t	12,242
Affiliated companies	54t	10,467
Total	120t	22,709

(3) Breakdown of customer benefit

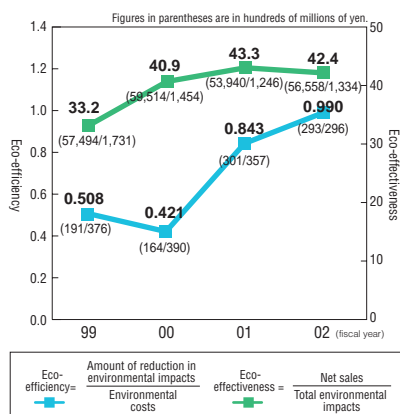
Millions of yen

Item	Amount of reduction in environmental impacts*	Item
Environmental impact reduction benefits at the usage phase		
Toshiba Corp.	24,471t-CO ₂	1,551
Affiliated companies	76,124t-CO ₂	5,316
Total	100,595t-CO ₂	6,867

* Indicated in the above table are differences in volumes of environmental impacts between fiscal 2001 and fiscal 2002. Minus figures indicate that increase in environmental impacts exceeded reduction in benefits due to increased production etc.
** GJ: Gigajoule

Tool for environmental management

Although there is no universally accepted definition of environmental management, it is useful to conceive of environmental management as management that integrates environmental considerations and is based on the recognition that the Earth's environment is vulnerable. A good working definition of environmental accounting is that it is a tool used to reflect environmental considerations in decision-



* Total environmental impacts are the total amount of environmental impacts on water and atmosphere calculated in monetary value in accordance with the method of calculating assumed benefits.

making. Thus, environmental accounting underpins environmental management. The above graph shows the trend of eco-efficiency* and eco-effectiveness*, which are environmental management indices unique to Toshiba. Eco-efficiency, an

index for reduction of impact per unit cost, has been improving. The efficiency is higher when a greater reduction of impact is achieved for less environmental cost. Eco-effectiveness is a ratio of net sales to total environmental impact. This index is useful for evaluating the benefits of routine environmental measures, provided that the content of the business does not change greatly. Despite fluctuations, eco-effectiveness is also improving.

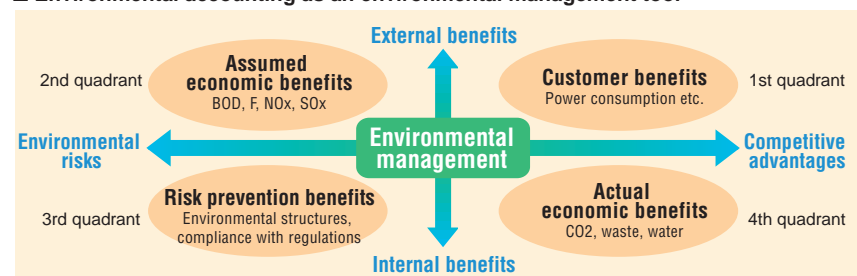
The figure below indicates the outline of Toshiba's environmental accounting. Toshiba's environmental accounting for fiscal 1999 principally concerned the second and the fourth quadrants. For fiscal 2000, Toshiba calculated the first quadrant, benefits to society. For fiscal 2001, risk prevention benefits, which correspond to the third quadrant, were calculated. Toshiba is working to establish a better approach so that measured benefits serve as appropriate indices for environ-

mental management.

Toshiba aims to establish an environmental accounting system for the purpose of quantitatively analyzing and evaluating environmental protection activities, reviewing environmental management, and providing a rational basis for decision making.

Additionally, as a part of its efforts to strengthen the internal control functions, Toshiba has started to introduce material flow cost accounting*. A project for implementation of this accounting practice has been launched for the hard disk drive production line of the Ome Complex under the guidance of Dr. Michiyasu Nakajima, assistant professor of Kansai University, and Shin Nihon Environmental Management and Quality Research Institute. We intend to expand the scope of implementation of material flow cost accounting while verifying its benefit.

■ Environmental accounting as an environmental management tool



Voluntary Action Plan (Voluntary Environmental Plan)

Following the announcement of its first voluntary plan in March 1993, Toshiba achieved the seven initial targets by the end of fiscal 1995 as planned.

The second voluntary environmental plan was launched in fiscal 1996 and 10 of the 12 targets were achieved by the end of fiscal 2000, the final year of the plan.

Toshiba's third voluntary environmental plan, covering the period from fiscal 2001 to 2005, is now being implemented. The principal themes included in the plan are achievement of zero emission of waste*, reduction in release of chemical substances, reduction in release of CO₂, and creation of environmentally conscious products (adoption of lead-free soldering* etc). This new voluntary plan is being promoted throughout Toshiba Group, including affiliated companies.

Zero emission of waste

In fiscal 2002 the total quantity of waste for final disposal was equivalent to 0.7% of the total quantity of waste discharged by the 18 operations in Japan, and so Toshiba achieved the overall target. Currently, we are focusing on the three operations that have yet to achieve zero emission.

While maintaining zero emission we are also aiming to reduce total discharge and to shift to more sophisticated means of disposal with minimal environmental impact.

Reduction in release of chemical substances

In fiscal 2002 there was a great reduction in the quantity of chemical substances released, partly due to the reshaping of the business. Toshiba is developing technologies enabling reduction of usage and alternatives and has installed recovery equipment in order to ensure compliance with the industry's voluntary action plan for reduction of release of paint solvents and greenhouse gases.

Reduction in CO₂ release

The ratio of CO₂ release to net sales decreased greatly in fiscal 2002 partly due to the reshaping of the business. However, the amount of CO₂ released by the semiconductor operations and other growth fields increased. Toshiba intends to invest in energy-saving measures for clean rooms and to improve control with the aim of achieving the target early.

Environmentally conscious products (Items 4 to 8 below)

Although the average green procurement* ratio for Toshiba headquarters was 75.4%, the ratios for certain in-house companies are still around 60%. Regarding provision of product information, 55.2% of the products on a monetary value basis are in compliance with the voluntary environmental standards. Toshiba will focus on types of products for which provision of information is still inadequate. Electricity consumed per product function was reduced by 23.2%. Application of lead-free soldering for the principal consumer electronics products and personal computers, which started in fiscal 2000, is being expanded step by step. Toshiba applied lead-free soldering to 18 of those products in fiscal 2001 and to all 48 products by fiscal 2003. We are developing technology to overcome the difficulty of applying lead-free soldering to other types of products. Toshiba expects to cease use of HCFCs by December 2004.

■ Environmental accounting as an environmental management tool

	Items	Target	Result for fiscal 2002	Evaluation
1	Zero emission of waste	Step-by-step implementation and the quantity of final disposal to be 1% or less of total discharge in	0.7% in fiscal 2002. The target was achieved.	◎
2	Reduce release of chemical substances	30% reduction in fiscal 2005 compared with fiscal 2000	40% reduction compared with fiscal 2000	○
3	Reduce CO ₂ release	25% reduction in fiscal 2010 compared with fiscal 1990	22% reduction compared with fiscal 1990	○
4	Green procurement	Set the target green procurement ratios for years up to fiscal 2005 with fiscal 2000 as a benchmark	Green procurement ratio of 75.4%	△
5	Provide product information	50% of products to be in compliance with the voluntary environmental standards by fiscal 2005	52.2% of products are in compliance with the voluntary environmental standards on a monetary value basis.	○
6	Reduce electricity consumed per product function	30% reduction in fiscal 2005 compared with fiscal 2000	23.2% reduction compared with fiscal 2000	○
7	Apply lead-free soldering	Application of lead-free soldering to all products by fiscal 2003	37.3% of products use lead-free soldering.	△
8	Abolish HCFCs	Abolition by December 2004	64.2% of products do not use HCFCs.	○



Environmental audits

In accordance with Toshiba's audit system known as EASTER* (Environmental Audit System in Toshiba on the basis of ECO Responsibility), annual audits of operations of Toshiba Corp. and those of subsidiaries and affiliates have been conducted since 1993. As well as improvement of the quality of environmental protection technology throughout Toshiba Group, another objective of internal audits is the enhancement of auditors' skills. Audits are performed by a group consisting of a chief auditor and auditors who are qualified in accordance with Toshiba's internal standards for auditors.

*Environmental Audit System in TOSHIBA on basis for ECO Responsibility

Audit items and evaluation

There are four audit items: environmental management system, control of workplace, degree of achievement of the voluntary plan, and creation of environmentally conscious products. Quality is evaluated in accordance with audit criteria.

Environmental management system

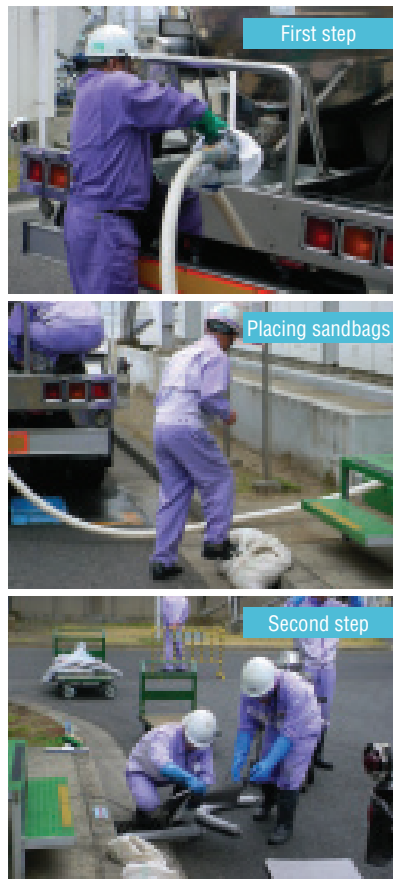
The environmental management systems of all operations are covered by ISO 14001* certification and a third-party organization examines and monitors those systems in connection with the extension of the certification. Internal auditing of environmental management systems covers all requirements of ISO 14001 in addition to items required for internal auditing and evaluates qualitative improvements compared with the previous year. The focus of evaluation of operations in Japan is shifting to items to be improved and recommendations.

Auditing of control of workplaces

In auditing of control of workplaces, as well as inspection and control of facilities, control of critical facilities and training for emergencies are evaluated to reduce risks of adverse environmental

impacts. Items to be improved and recommendations concerning facilities or their operation are identified.

Auditing a workplace (training for emergencies)



Degree of achievement of the voluntary plan

Besides evaluation of the degree of achievement of items of Toshiba Voluntary Environmental Plan, such as reduction of waste, reduction of CO₂ release and reduction of release of chemical substances, the following items are evaluated from the viewpoint of innovativeness and impacts of operations' activities, the degree of participation of personnel, and applicability: improvement of the environmental management system, improvement of control of the workplace, and activities to achieve targets of the voluntary plan.

Creation of environmentally conscious products

Concerning creation of environmentally conscious products (technical audit),

System and voluntary plan audit



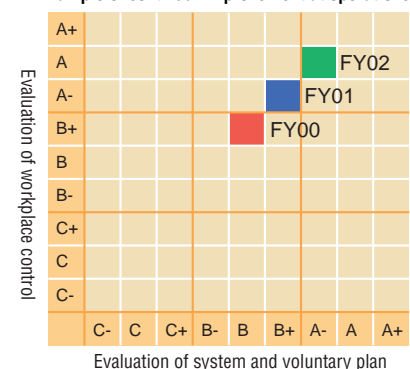
technology planning and management and the environmental consciousness of technology and engineering departments in terms of both products and technology are evaluated. In recent years, the scope of auditing has been expanded to include systems for disclosing the environmental performance of products to users, since the desire for such information is increasing among users.

Reporting of audit results and improvement plans

An audit team prepares an audit report that includes the results of level evaluation, issues to be addressed and proposals for further improvement, and reports to the personnel responsible for environmental protection at the operations subject to the audit. Improvement plans prepared by the operations covering urgent and important issues identified by the audit are checked.

Regarding the results of environmental audits, Toshiba places the greatest emphasis on continuous improvement (time-series trends) at operations. Simple comparison among operations whose histories, products and manufacturing processes vary is done only for reference.

■ Example of continual improvement at operations



Environmental measures for logistics

Reduction of environmental impacts of transport and distribution

Toshiba Group is working to reduce environmental impacts at every phase of the supply chain.

Major activities are described below.

① Optimization of transport using trunk routes by means of integration and sharing of freight information and optimization of distribution to customers through establishment and expansion of a flexible vehicle assignment system attuned to the daily fluctuation of freight volumes

② Reduction in the number of vans and trucks by optimizing the shipment of freight and utilization of vehicles among logistics subsidiaries of electronic/electrical companies.

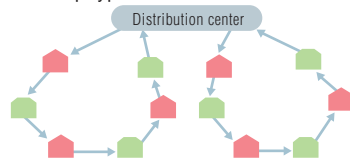
③ Reduction in CO₂ emission by expansion of modal shift*.

The flexible vehicle assignment system has led to a 25% reduction in the number of vehicles used in Tokyo metropolitan area and Nagoya. Toshiba intends to apply the flexible vehicle assignment system nationwide.

Outline of the flexible vehicle assignment system

Distribution types

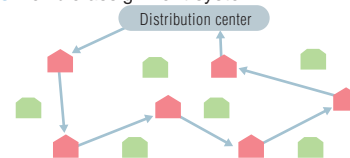
● Bus stop type



※ Fixed-time regular distribution to ensure service quality (delivery time etc.)

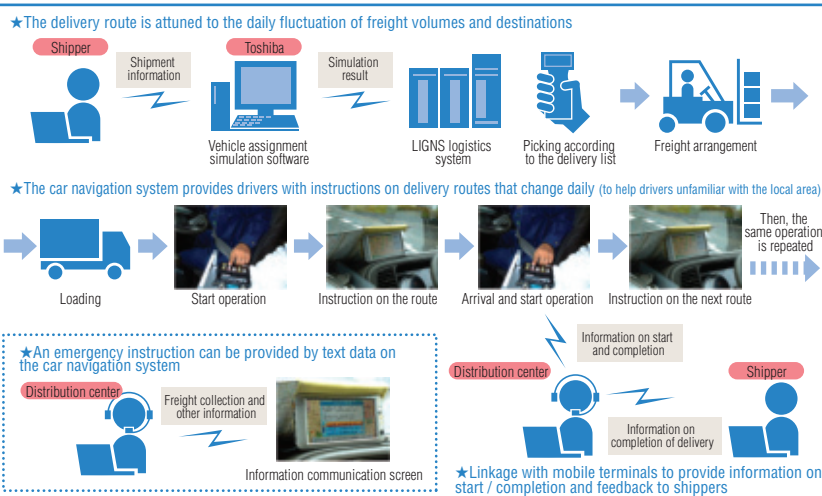
■ Freight to be delivered (red square) ■ No freight to be delivered (green square)

● Flexible assignment system



※ Flexible distribution attuned to freight volumes

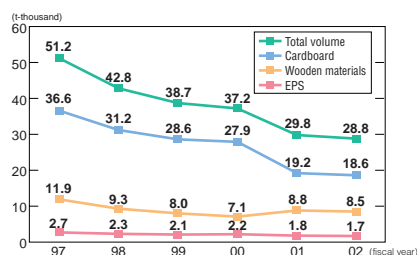
Operational flow of the flexible vehicle assignment system and characteristics of the system



Environmental packaging

In order to achieve 3R (reduce, reuse, recycling) in packaging, Toshiba is designing packaging and developing packaging technology by adopting an approach in which the distribution process is reflected in product development and design, and has achieved a 30% reduction in the total volume of packaging in the five years to fiscal 2002; specifically, a 31% reduction in cardboard, a 48% reduction in wooden materials, and a 29% reduction in expanded polystyrene (EPS).

Reduction of discarded packaging materials



In order to reduce packaging waste, Toshiba aims to increase the use of recycled packaging materials for IT products and home appliances and to reduce the volume of packaging materials used.

Concept of environmental packaging

Packaging design and technology development

Collaboration with product design organizations

Investigation of the actual situation of distribution and reflection of the results

Packaging evaluation tests

Verification of economic performance and environmental conformity

Promotion of 3R for packaging

Reduce (resource-saving packaging)

Reuse (reusable packaging)

Recycling (recyclable packaging)

Examples of environmental packaging



Example of reduction

Part of the packaging for glass showcases was dispensed with and use of pallets was eliminated to reduce materials used.



Example of reuse

Packaging materials for personal computer parts for transport between factories were changed from disposable corrugated cardboard boxes to reusable plastic boxes.



Example of recycling

Reinforced corners for OA equipment packaging were changed from laminated corrugated board to recycled pulp.



Toshiba's Commitment Overseas

Toshiba Electronics Malaysia's "Gotong Royong" clean-up campaign

Malaysia has three principal ethnic groups and is a culturally and religiously diverse nation. For an enterprise to win the trust of a society in which diverse values co-exist, community-based outreach programs are essential.

Through Gotong Royong, everyone at Toshiba Electronics Malaysia Sdn. Bhd. (TEM) shares their awareness of environmental issues with local residents and enhances confidence in TEM. Activities include cleaning the neighborhood adjacent to TEM, planting shade trees, and meetings to inform local residents of TEM's environmental activities. Gotong Royong is rooted in the traditional emphasis on working together to help one another in the community. Nowadays, it refers to voluntary activities, not limited to clean-up campaigns, undertaken by companies, local residents, the government, or other organizations.

As a result of Gotong Royong, TEM has cultivated constructive relationships with the local government and the community, as attested by TEM receiving the Environment Award from Selangor State. TEM is stepping up its efforts to contribute to the development of environmental activities in Malaysia through Gotong Royong.



Selangor Environment Award ceremony

Toshiba Semiconductor GmbH



For the purpose of enhancing environmental protection, Toshiba conducts environmental audits of factories of overseas subsidiaries to promote recycling based on the classification of waste, energy saving and control of chemical substances. Spurred by the environmental audit process and by promoting recycling based on the classification of waste, Toshiba Semiconductor GmbH (TSG), a semiconductor manufacturer, has achieved a 100% recycling rate. Also, TSG has achieved energy saving by integrating transformers.

TSG invites children from local elementary schools to visit the TSG factory to learn about the company and its environmental activities.

TSG is striving to deepen understanding of its environmental activities by all interested parties through the proactive disclosure of information, including issuing environmental reports.

Regensburg Operations of Toshiba Europe GmbH

PC manufacturer Regensburg Operations of Toshiba Europe GmbH (TEG) gained the EMAS II certification (eco-management & audit) in accordance with Regulation (EC) 761/2001 in the summer of 2002.

This European standard requires disclosure of factories' environmental information and control of indirect environmental impacts of subcon-

tractors and suppliers concerning transport and resource utilization efficiency, in addition to the ISO14001* requirements.

In order to satisfy these requirements, TEG evaluated the factory's environmental impacts using eco-rucksack* in cooperation with the University of Stuttgart and the Wuppertal Institute. TEG has developed an evaluation management software tool for eco-rucksack and is testing it for practical applications.

※Eco-rucksack: This is a concept for measuring environmental impacts proposed by German researchers who won the Takeda Award 2001 for their work.



EMAS II certification allows use of this logo

Toshiba Information Equipment (Philippines)—processing of waste fluorescent lamps

Toshiba Information Equipment (Philippines), Inc. (TIP), a PC manufacturer, is promoting processing of waste fluorescent lamps discharged by TIP and other Japanese companies in the same technology park. This project was consigned to Term Corp. of Japan, an affiliate of Toshiba Corp. The waste fluorescent lamps are transported to a sophisticated processing facility in Hokkaido. As waste fluorescent lamps are toxic waste, an import license from the Japanese government was secured in accordance with the Basel Accord.

2 Environmental considerations in business

Prevention of global warming

Toshiba is contributing to the prevention of global warming by providing energy-efficient products and systems and by taking action to save energy and reduce CO₂ emissions throughout its operations.

Targets and results regarding reduction of CO₂ emissions at operations

The target for reduction of CO₂ emissions is to achieve a 25% improvement in the ratio of CO₂ emissions to net sales by fiscal 2010 compared with fiscal 1990. This target exceeds that mandated by the Energy Saving Law, i.e. 1% reduction per year. The results for fiscal 2002 were an 8% decrease of CO₂ emissions compared with the previous year or an 18% decrease compared with fiscal 1990. The ratio of CO₂ emissions to net sales improved by 13% compared with the previous year and the improvement was 22% compared with fiscal 1990. CO₂ emissions of the electronic devices & components segment increased 12% compared with fiscal 1990. Those of other segments, such as information & communications systems, power systems, and home appliances, declined by 26 to 54%.

The ratio of CO₂ emissions to net sales of the electronic devices & components segment improved by 17% compared with fiscal 1990. Thus, the efficiency of

energy consumption has been improving.

Implementation of energy-saving measures

Management's task is to promote energy saving and CO₂ emission reduction measures from a medium- to long-term perspective, and from the viewpoint of efficiency and disclosure. Toshiba applies a threefold approach in a consistent, well-balanced manner as described below.

●Improvement in control

Toshiba seeks to eliminate waste throughout its operations, including air conditioning, lighting and power facilities, and promotes appropriate control of energy consumption by improving production processes and efficiency.

●Investment in energy-saving equipment

According to a comprehensive plan, investment is executed in order to replace power facilities, production facilities, air conditioning and lighting systems with those offering higher energy efficiency.

●Energy-saving clean rooms

Because it is essential to strictly control the degree of cleanness and temperature and humidity conditions of clean rooms where semiconductors are manufactured, their air conditioning systems consume a lot of energy. Energy saving at clean rooms is promoted by enhancing the efficiency of air-condi-

tioning systems and by adopting manufacturing procedures that use less energy.

These efforts resulted in reduction of CO₂ emissions by 18,400t-CO₂ in fiscal 2002, an amount equivalent to 2.4% of total CO₂ emissions.

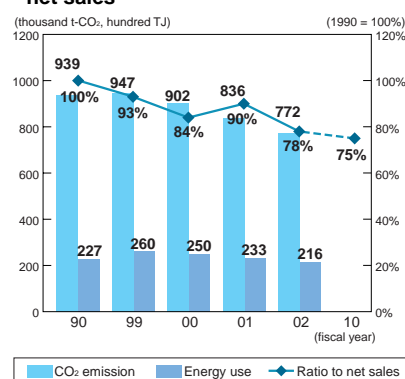
Commitment regarding greenhouse gases other than CO₂

Toshiba uses greenhouse gases other than CO₂. Hydrofluorocarbons (HFCs) are used as a refrigerant for air conditioners and refrigerators, Hydrochlorofluorocarbons (HCFCs) as heat insulating material, and perfluorocarbons (PFCs) for cleaning CVD equipment and etching semiconductor devices. Toshiba is promoting collection and recycling of these substances and development of substitute substances and technologies in accordance with the voluntary targets for reduction of use.

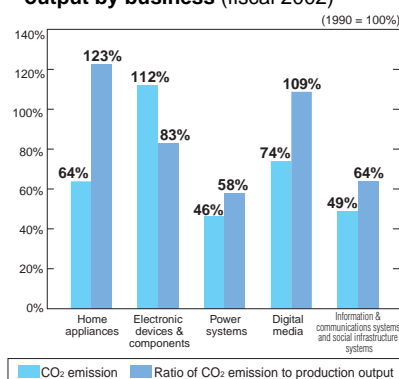
■HFC and HCFC reduction targets and results

Targets	Reduce use of HFC by promotion of use of substitute substances Eliminate use of HCFC by 2004				
Results		Refrigerators		Air conditioners	
		Emission (t/year)	Compared with fiscal 2000	Emission (t/year)	Compared with fiscal 2000
	Fiscal 2000	4.8	100%	1.32	100%
	Fiscal 2001	2.5	52%	1.29	98%
	Fiscal 2002	0.5	10%	1.50	116%

■CO₂ emission, energy use and ratio to net sales



■CO₂ emission and ratio to production output by business (fiscal 2002)



■PFC reduction targets and results

Targets	•Reduce emission of PFC gas by the end of fiscal 2010 to 90% or less of emission in fiscal 1995 (adoption of alternative substances and introduction of scrubbers) •Reduce emission of liquid PFC by the end of fiscal 2010 to 30% or less of emission in fiscal 1995 (adoption of alternative substances)				
		PFC gas emission		Liquid PFC emission	
Results		Thousand ton-CO ₂ /year	Compared with fiscal 1995	Thousand ton-CO ₂ /year	Compared with fiscal 1995
	Fiscal 2000	854	147%	152	82%
	Fiscal 2001	569	98%	122	66%
	Fiscal 2002	547	94%	80	43%

*Data is for Toshiba Corp.'s factories and R&D facilities.

*The following values are used as CO₂ emission coefficients for electricity: 0.37 for 1990, 0.32 for 1998, 0.33 for 1999, and 0.34 for 2000, 2001 and 2002 (unit: kg-CO₂/kWh)

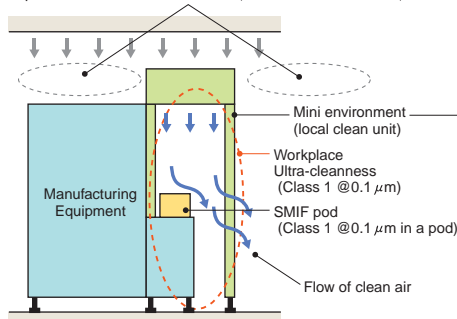
Case studies for energy saving and CO₂ emission reduction measures

The introduction of SMIF (standard of mechanical interface) technology for local cleaning in semiconductor manufacturing processes has enabled Oita Operations, a semiconductor manufacturing plant, to achieve the optimum cleanness and an 80% reduction in power consumption or energy saving per year equivalent to 3,424 kl of crude oil. Local clean units realize ultra-cleanness in workplaces and SMIF pods (ultra-clean containers) are used for transporting products. As a result, circulating airflow of air conditioning outside the local clean units, which has no impact on products, was reduced, thereby greatly reducing power consumption. On the strength of its measures employing SMIF technology, Oita Operations won the Award of the Director-General of the Agency for Natural Resources and Energy for fiscal 2002.

Kaga Toshiba Electronics Corp. has implemented various energy-saving measures, including introduction of multiplex high-efficiency adsorption-type refrigerators and modification of manufacturing conditions for pure water equipment. As a result, heavy oil consumption was reduced by 1,550 kl and was 46% compared with fiscal 1999, while CO₂ emissions were reduced by 4,180 ton-CO₂. These achievements enabled the company to win the Award of the Director of the Chubu Bureau of Economy, Trade and Industry for fiscal 2002.

Toshiba Finance Corp. and Toshiba Building Co., Ltd. completed installation of Toshiba's "Comfortable Air Conditioning Control" system in the Ginza Toshiba Building in March 2003. This system is expected to lead to a 6.2% reduction in energy consumption. With "Comfortable Air Conditioning Control," changes in the comfort-level experienced by people in the building are grasped in real time and the appropriate temperature setting is

Environment outside the local clean unit
Optimization from Class 100 @0.3 μm to Class 1000 @0.3 μm



calculated by a computer and automatically updated in 0.1°C units. This innovative approach achieves energy saving without compromising comfort. Toshiba Corp. provides various products and services that contribute to energy saving. For example, Toshiba commercialized 200 kW phosphate fuel cells for on-site power sources and sold more than 270 units. Regarding polymer fuel cells, which are candidate power sources for homes and automobiles, Toshiba achieved the targeted power generation efficiency of 35% in fiscal 2002 with its 1 kW system for home



use, and is working to enhance reliability and reduce costs in preparation for commercialization. This fuel cell for home use is expected to reduce the typical home's CO₂ emissions by 10% and cut electricity bills. Toshiba is keen to bring its activities respecting energy saving and the prevention of global

warming to the attention of the public. Toshiba's achievements are highly regarded, as attested by the numerous awards Toshiba won in fiscal 2002, including the Award for Excellent Factories for Energy Control and the Award for Excellent Energy Saving Cases.

Energy saving awards received by Toshiba Group

Toshiba Group's energy-saving measures are highly evaluated

Awards	Fiscal year	Award received	Product etc.
Energy Saving Awards	1993	Award of the Minister of International Trade and Industry	Air conditioner
	1994	Award of the Minister of International Trade and Industry	Washing machine
	1995	President's Prize of the Japan Energy Conservation Center	Air conditioner
	1996	President's Prize of the Japan Energy Conservation Center	Air conditioner
		President's Prize of the Japan Energy Conservation Center	Personal computer
	1998	Award of the Minister of International Trade and Industry	Air conditioner
		President's Prize of the Japan Energy Conservation Center	Refrigerator
	1999	Award of the Minister of International Trade and Industry	Air conditioner
Enterprise Special Commendations		President's Prize of the Japan Energy Conservation Center	Refrigerator
	2000	President's Prize of the Japan Energy Conservation Center	Compressor for air conditioners
		Award of the Director-General of the Agency of Natural Resources and Energy	Air conditioner
	2001	Award of the Director-General of the Agency of Natural Resources and Energy	Air conditioners for commercial use
New Energy Awards		Award of the Director-General of the Bureau of Economy, Trade and Industry	Range hood fans
	2002	Award of the Director-General of the Agency for Natural Resources and Energy	Industrial air conditioners
Excellent Energy Saving Cases	1999	Award of the Director-General of the Agency of Natural Resources and Energy	Toshiba Corp.
	1997	Award of the Minister of International Trade and Industry	Fuel cell
	1994	President's Prize of the Japan Energy Conservation Center and Prize for Excellence	Oita Works
	1995	President's Prize of the Japan Energy Conservation Center	Oita Works
	1997	President's Prize of the Japan Energy Conservation Center	Oita Works
	1998	Award of the Minister of International Trade and Industry	Oita Works
	1999	President's Prize of the Japan Energy Conservation Center	Yokkaichi Operations
		President's Prize of the Japan Energy Conservation Center	Iwate Toshiba
Excellent Factories for Energy Control	2000	Award of the Director-General of the Agency of Natural Resources and Energy	Iwate Toshiba
		Award of the Director-General of the Bureau of Economy, Trade and Industry	Oita Operations
	2001	President's Prize of the Japan Energy Conservation Center	Corporate Manufacturing Engineering Center
		Japan Energy Conservation Center Prize for Excellence Oita Operations	Oita Operations
	2002	Award of the Director-General of the Agency for Natural Resources and Energy	Oita Operations
		Award of the Director-General of the Bureau of Economy, Trade and Industry	Toshiba Building
			Kaga Toshiba
	1994	(Heat) Award of the Director-General of the Bureau of International Trade and Industry	Oita Works
	1998	(Heat) Award of the Director-General of the Agency of Natural Resources and Energy	Oita Works
	1999	(Heat) Award of the Director-General of the Bureau of International Trade and Industry	Yokkaichi Operations
		(Power) Award of the Director-General of the Bureau of International Trade and Industry	Nasu Operations
		(Power) Award of the Director-General of the Bureau of International Trade and Industry	Takeda Toshiba
	2000	(Power) Award of the Director-General of the Bureau of Economy, Trade and Industry	Yokkaichi Operations
	2001	(Power) Award of the Director-General of the Bureau of Economy, Trade and Industry	Fukuoka Toshiba
	2002	(Heat) Award of the Director-General of the Agency for Natural Resources and Energy	Yokkaichi Operations
		(Electricity) Award of the Director-General of the Agency for Natural Resources and Energy	Nasu Operations

Control of chemical substances

Implementation of energy-saving measures

A vast number of chemical substances are employed for a correspondingly huge variety of purposes. Some 100,000 different chemical substances are produced for industrial applications. Although chemical substances are indispensable, they may cause serious pollution and harm human health and the environment if appropriate controls are not implemented at each stage of manufacturing, distribution, use and disposal or if an accident occurs.

Toshiba's use of chemical substances is based on three fundamental policies: avoid use of toxic substances to the maximum extent possible, promote reduction and substitution to the maximum extent possible, and subject use to appropriate controls. Some 2,000 substances are classified into three ranks, A, B and C, based on the laws and regulations and hazard, and control classifications (prohibition of use, reduction in use, control of release) for each substance are determined based on the risk associated with the substance. Control of chemical

substances is in accordance with the Chemical Substances Control Rules. Toshiba adopts a quasi-risk assessment approach in which the risk posed by a substance is expressed as the product of the hazard and the level of exposure.

Toshiba does not permit purchase of any substance whose use is prohibited (41 substances). For substances whose use is to be reduced (24 substances), Toshiba's target is to achieve a 30% reduction in the amount released in fiscal 2005 compared with fiscal 2000. Furthermore, for substances whose release is to be controlled, Toshiba is conducting appropriate control in accordance with the risks posed by clarifying the amounts used, for example.

Toshiba Group's PRTR

The Law Concerning Reporting etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law) enacted in July 1999 provides for introduction of a Pollutants Release and Transfer Register (PRTR*) system for

promoting the management of chemical substances by businesses. The enforcement ordinance concerning the law promulgated in March 2000 clarifies chemical substances subject to reporting and businesses subject to PRTR. Since April 1, 2002, reporting of the types of chemical substances released and their quantities has been mandatory. Since March 2003 a system has been established for disclosure of individual premises' results for fiscal 2001 upon request from any member of the public.

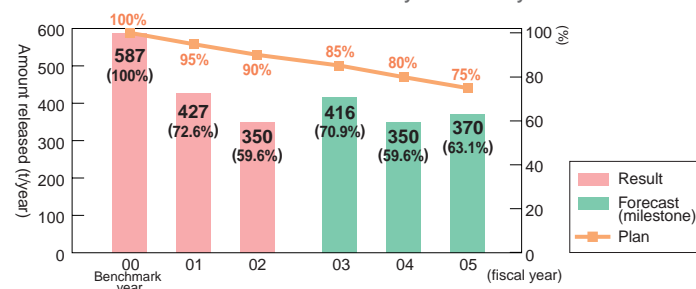
Comparing the results for fiscal 2002 with those for fiscal 2001, the amount of chemical substances handled by Toshiba increased by 1,300 tons as a result of expanded MSDS* (material safety data sheets) coverage. The amount released to the environment was reduced by 43 tons thanks to technical measures, such as switching to use of water-soluble paints.

Disclosure and risk communication

Toshiba first published its aggregate data on PRTR for fiscal 1997 in

Release reduction plan and results (forecast)

● Reduction of release of substances covered by the Voluntary Environmental Plan



Substances whose use is to be reduced

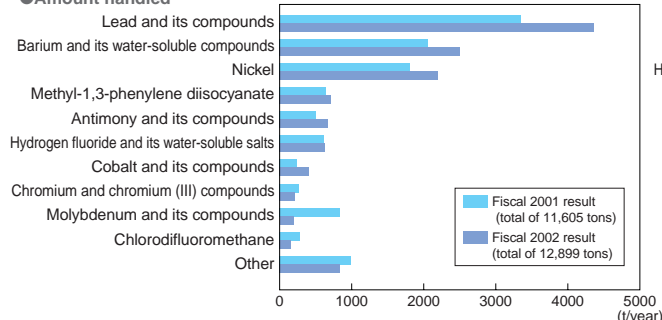
(substances covered by the Voluntary Environmental Plan)

24 types listed below:

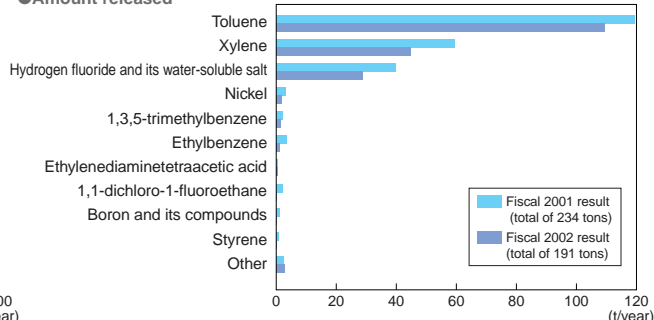
- Ammonia
- Isobutyl alcohol
- Ethylene glycol monoethyl ether
- Xylene
- Styrene
- Toluene
- Formaldehyde
- Methyl alcohol
- Methyl isobutyl ketone
- Hydrogen chloride
- 2-ethoxyethyl acetate
- Ethyl acetate
- Sulfuric acid
- Hydrazine
- Phenol
- Bis(2-ethylhexyl)phthalate
- Hydrogen fluoride and its water-soluble salt
- Chlorine
- Inorganic cyanide compounds (except complex salts and cyanates)
- Hydrogen sulfide
- Sulfur hexafluoride
- PFCs
- HCFCs
- HFCs

Breakdown by substances subject to PRTR (amounts handled, released)

● Amount handled



● Amount released



Toshiba Environmental Report 1998. Since fiscal 2001 the coverage has been expanded to Toshiba Group. Because Toshiba is convinced that a business enterprise is accountable to its stakeholders, data on individual operations are presented on Pages 46 to 48 of this report.

The need for disclosure of information is expected to increase. To bring about a situation in which progress in reduction of release of chemical substances leads to reduction of total risk, Toshiba is making efforts to disclose information in an appropriate manner and to provide easy-to-understand explanations.

PCB storage and control

Since 1972 when manufacturing of products using polychlorinated biphenyl (PCB) ceased in Japan, some 20 Toshiba operations in Japan have retained PCB and products containing PCB in storage under strict control. The products stored are semi-manufactured products left over when production lines were taken out of service, parts and materials, power incoming/transformer facilities and fluorescent lamp ballasts.

In July 2001 the law concerning special measures for promotion of appropriate treatment of polychlorinated biphenyl waste (PCB Special Measures Law) came into effect and it has become mandatory for companies to report the situation of storage and disposal of PCB waste and to dispose of PCB waste within a certain period specified by an ordinance. The scope of products



Storage of PCB-containing products on a tray

and items subject to reporting was expanded by this law. Toshiba has been doing its utmost to ensure thorough investigation, accurate reporting and appropriate control, covering not only factories of Toshiba Group companies but also company dormitories and residences, welfare facilities and buildings managed by Toshiba Group companies.

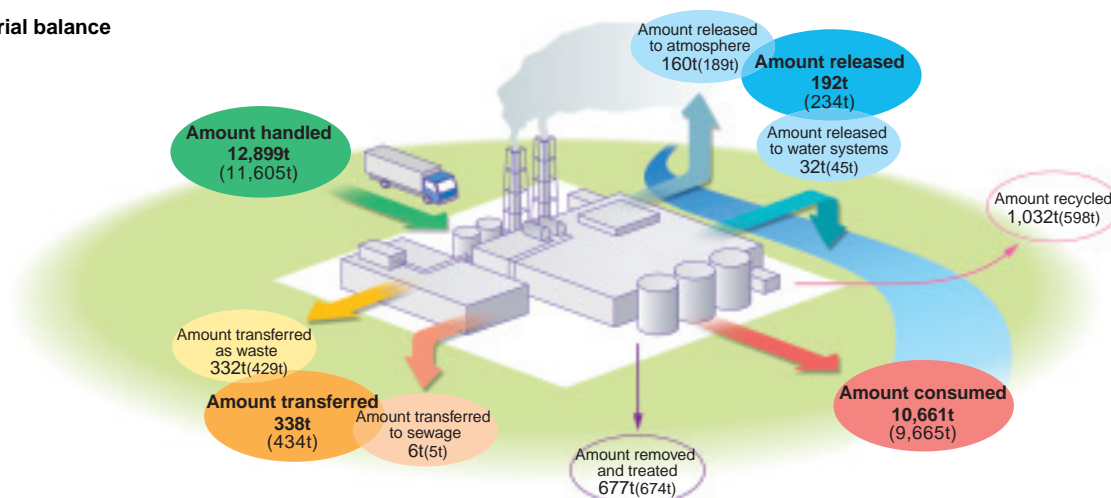
As of 2002, the products and items

stored by Toshiba Corp., the spun-off companies, and major affiliated companies, include 240 transformers, 6,500 high-pressure condensers, about 200,000 low-pressure condensers, fluorescent lamp ballasts and other equipment, some waste oil, oil containing trace amounts of PCB, and waste cloth and paper to which PCB is adhered.

For strict control, these products are stored in a dedicated building at each operations site in compliance with the prescribed rules. Moreover, dikes and double containers (receiver tanks) are installed to ensure safety.

As envisaged in the PCB Special Measures Law, based on the recognition that a definitive solution to the PCB problem would necessarily involve treating PCB and products containing PCB as soon as possible using reliable technology, rather than continuing storage, Toshiba has set itself the goal of completing treatment of its entire stock of PCB stored in house by fiscal 2010. For this purpose, Ukishima Resource Recycling Center was established and operation of a small-scale treatment facility started there in September 2002.

■PRTR Material balance



Numbers in parentheses are the results for fiscal 2001.

*The amount consumed includes the amount of the substance subject to PRTR that changed to other substances by reaction and the amount that left facilities in products or together with products.

*The amount removed and treated includes the amount of the substance subject to PRTR that changed to other substances by incineration, neutralization, decomposition, reaction treatment, etc. within a facility.

*Landfill at operations (stable type, control type, and shield type) is categorized as release. Release to the public sewage system is categorized as transfer.

*The difference between transfer and recycling depends on whether a monetary transaction is involved or not. Therefore, even if the purpose is recycling, if treatment of the substance is contracted out to a third party with charge, the transaction is categorized as transfer of waste.

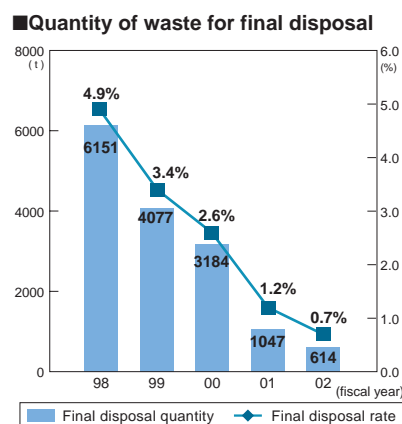
Zero emission of waste

Zero emission achieved

Toshiba has achieved zero emission of waste* at domestic operations, i.e. the total quantity of waste for final disposal is equivalent to less than 1% of the total quantity of waste discharged.

According to Toshiba's definition, zero emission means that the quantity of waste for landfill after treatment accounts for 1% or less of the total quantity of by-products and other items generated as a result of business activities. In the voluntary environmental plan, Toshiba set itself the target of achieving zero emission by the end of fiscal 2003 in aggregate at its 18 operations in Japan.

The rate of final disposal, which was 2.6% for fiscal 2000 when the voluntary environmental plan was launched, was reduced to 0.7% for fiscal 2002. As a result, Toshiba attained the target earlier than the initial plan by a wide margin.



Characteristics of Toshiba's activities for zero emission

Given that Toshiba's product portfolio ranges widely, from semiconductors and other electronic devices to power systems and home appliances, many types of materials are used in production processes, and accordingly, the types of waste discharged also vary greatly. Moreover, because the needs for recycling vary among operations, it has been necessary to optimize zero emission activities attuned to the needs of individual operations.

Thorough disassembly and separation for discharge

Although the classification of waste is determined by individual operations, they all endeavor to execute separation in accordance with the classification to the maximum extent possible at the point of discharge. Items containing metals, plastics and glass are thoroughly disassembled so that materials of value can be separated as much as possible. Everything from paper, stationery goods, bottles and cans to external film packaging is separated at the point of discharge at workplaces.

Waste treatment in accordance with regional characteristics and cooperation with other industries

The quantity of waste for landfill is being reduced through exchange of information and cooperation with other industries, such as the steel,

cement and chemical industries.

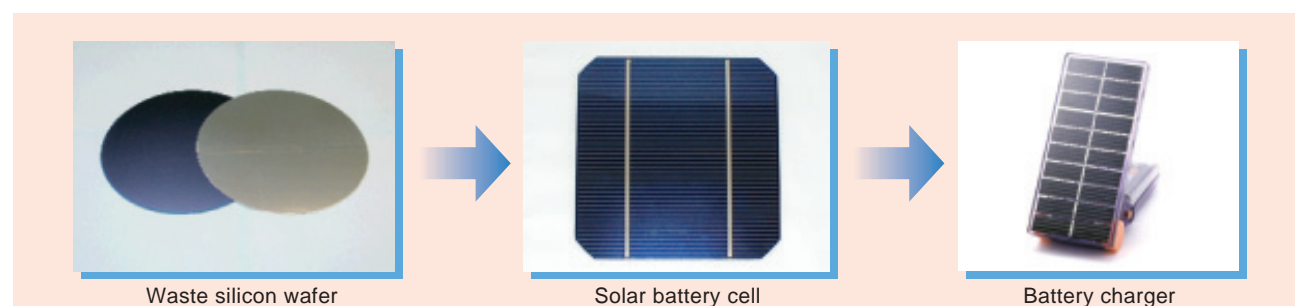
Sludge containing lead is used as raw material in the refining processes of mining companies, thus enabling reduction of waste containing lead and recycling of metal lead. Waste wafers discharged from various processes of semiconductor plants have conventionally been recycled as additives for aluminum refining. However, in order to achieve recycling of waste wafers at a more sophisticated level, Toshiba collaborated with industry peers on technology development. As a result, recycling of waste wafers as substrates for solar panels has been achieved. (Toshiba together with two partner companies received the CJC Chairman Award of the fiscal 2002 Resource Recycling Technology & System Awards.)

In this way, by establishing a waste treatment network according to the regional characteristics, the quantity of waste for landfill discharged by Toshiba operations has been reduced.

Activities from now on

The total quantity of waste generated by Toshiba in fiscal 2002 amounted to 84,060 tons. We think it is vital to reduce the quantity of waste generated while at the same time maintaining zero emission. Also, we aim to achieve qualitative improvement of recycling, namely by shifting from thermal recycling to material recycling, and to minimize overall environmental impacts including reduction of energy used for recycling and transport.

■ Recycling of waste silicon wafers as wafers for solar batteries



Response to soil and groundwater pollution

Comprehensive measures in response to organochlorine solvents pollution

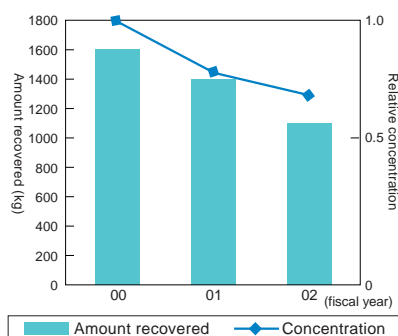
Toshiba has conducted a survey of soil and groundwater pollution at its factories. At present, purification of groundwater and monitoring are being done at Fukaya Operations in Saitama prefecture, Komukai Operations and the Microelectronics Center in Kawasaki, Yanagicho Complex in Kawasaki, Toshiba Carrier Corp. (former Fuji Works of Toshiba Corp.) in Shizuoka prefecture, Osaka Operations in Osaka prefecture, Taishi Area of Himeji Operations in Hyogo prefecture and Oita Operations in Oita.

At these operations 412 pumping wells are installed to purify and recover trichloroethylene and other organochlorine compounds, and 164 observation wells are used to monitor trends of the concentration of pollutants in groundwater.

In fiscal 2002, about 1,070kg of solvents was recovered by pumping up water. Also, at two factories, approximately 30 kg of solvents was recovered from soil by soil gas suction. Concentration of pollutants in groundwater is declining at a moderate pace.

Shown in the graph below are the results (water pumping and soil gas suction) of recovery of organochlorine compounds in the last three years. The amount recovered has been gradually decreasing, since as the concentration of organochlorine compounds contained in groundwater decreases due to purification, the amount recovered for a given quantity of pumped water decreases. Toshiba is raising the

■Trend of the amount recovered



efficiency of purification by improving the purification system.

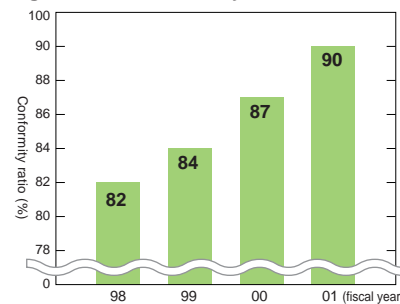
Preventing pollution

●Fail-safe environmental facilities

We are implementing fail-safe measures for environmental facilities in order to prevent pollution and reduce risk. Toshiba has guidelines for the following eight types of structural design: dikes and pans, exhaust gas scrubbers, waste storage sites, chemical storage sites, piping for liquid chemicals and effluents, waste water treatment facilities and in-site waste water systems, plating facilities, and oil storage facilities. By ensuring that structures are in conformity with these guidelines, pollution is prevented. For example, the Guidelines for Installation and Structures of Dikes and Pans provides guidelines covering dikes and pans that are to be installed for preventing chemicals from permeating underground or flowing into public water systems (including sewage) in the event of leakage of chemicals from tanks or containers.

Shown in the figures are the trend of the

■Trend of the structural design guidelines conformity ratio



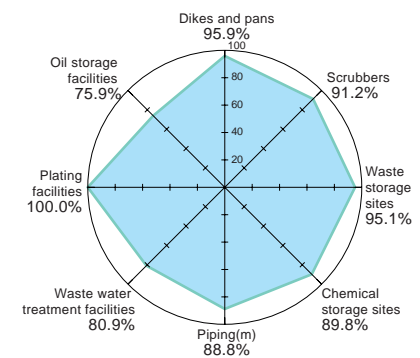
conformity ratio and the individual conformity ratios according to structural design guidelines for fiscal 2002. Whereas the average conformity ratio was 82% for Toshiba as a whole according to the survey conducted in fiscal 1998 when Toshiba established the guidelines for oil storage facilities and greatly revised the existing guidelines in response to the amendment to the Water Pollution Control Law, by fiscal 2001 it had improved to 90%. The reason for the low conformity ratios for oil storage facilities and waste water treatment facilities is that

they require a greater investment of time and money for improvement than do other facilities. We intend to systematically continue our efforts to achieve improvement.

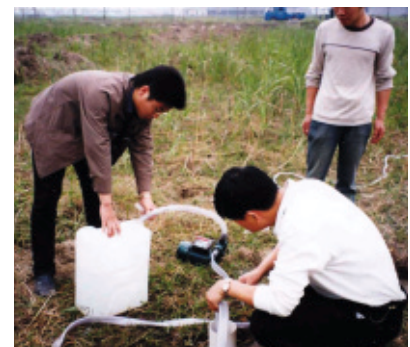
●Environmental assessment of business sites

Toshiba conducts environmental assessment before setting up or relocating any plant whether in Japan or overseas. The history and environmental conditions of the location are surveyed in advance to assess pollution risks. By incorporating appropriate environmental measures that reflect the survey results in a business plan, pollution attributable to business activities is prevented.

■Conformity ratios according to structural design guidelines (fiscal 2002)



■Environmental assessment before construction of Toshiba Hangzhou Co., Ltd., in Hangzhou, Zhejiang, China



Groundwater survey



External view of the plant

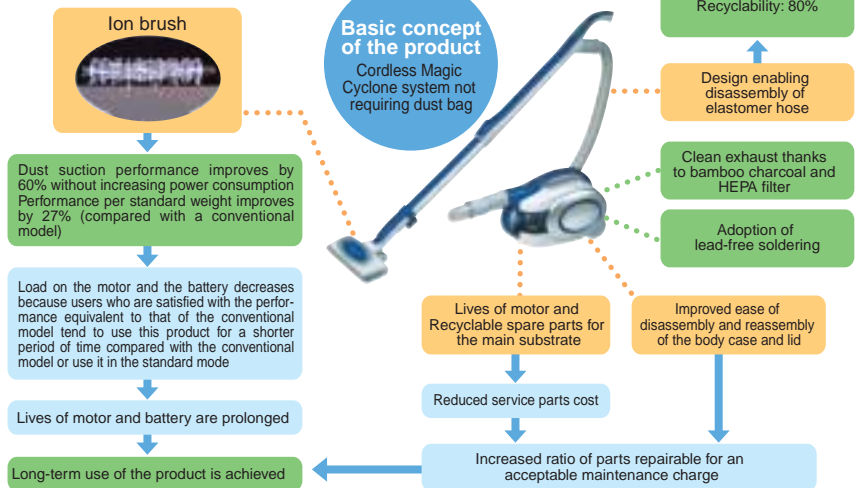
3 Environmental considerations regarding

Environmentally conscious products

With the aim of contributing to establishment of a recycling-based society, Toshiba Group strives to create environmentally conscious products (ECPs): that is, products whose eco-efficiency and resource recyclability are enhanced at every stage of their entire life cycles—from materials procurement, manufacturing and distribution, through to consumption and eventual disposal. All Toshiba products are subjected to environmental assessments.

The process flow of ECP creation is shown below. Environmental assessment of products in accordance with the Product Assessment Guidelines established in April 1992 is the main process. These guidelines call for environmentally conscious design and environmental assessment of all products. Environmental assessment of products clarifies the extent to which the environmental impact of the contemplated product is reduced compared with that of the previous model. Products satisfying the assessment criteria are deemed to be ECPs. In order to create excellent ECPs, Toshiba has also established a system for assessing the compliance of products with voluntary standards. Items to be assessed and standards are set for each product lifecycle and compliance is evaluated. Standards are stringent and life cycle assessment (LCA*) is mandatory. 52.2% of consumer products and office automation

Life cycle planning



equipment covered by the third voluntary environmental action plan were in compliance with the voluntary standards in fiscal 2002.

To promote ECPs, Toshiba is emphasizing environmental consideration at the planning stage, environmentally conscious design, and disclosure of environmental performance of products.

Environmental consideration at the planning stage

Toshiba has developed a lifecycle planning* tool named LCPlanner® to facilitate formulation of a concept for an environmentally conscious product at the planning stage that satisfies the quality and cost requirements while at the same time achieving effective

reduction in environmental impacts throughout the lifecycle. This tool, which can be introduced without changing the conventional product development process, makes it possible to identify ideas for improvement of maintainability, reusability, etc. at the parts level.

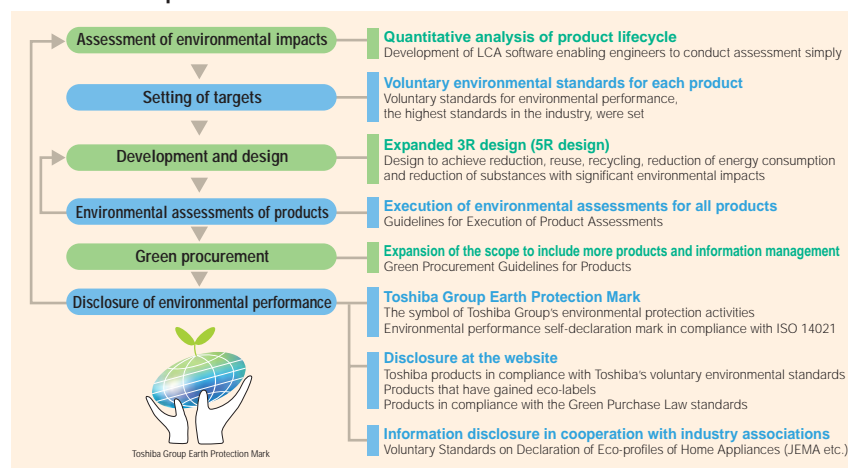
Environmentally conscious design

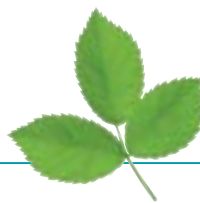
Toshiba Group's environmentally conscious design concept is grounded in 3R design enriched to 5R by including reduction of energy consumption (energy saving) and reduction of substances with significant environmental impacts.

We have developed an environmentally conscious design support system that enables assessment of environmental impacts of design activities at the product design stage so as to reduce the development period and enhance the quality of environmental consideration. This system allows data coordination among LCA tools and tools for evaluation of ease of disassembly, recyclability, etc. in the Comma Separated Value (CSV) format in order to improve evaluation efficiency.

Moreover, we are developing packaging technologies for lead-free soldering with the aim of achieving the widest possible adoption of lead-free soldering*, one of the goals of the third voluntary environ-

ECP creation process flow and recent activities





mental plan. Through collaboration between the Corporate R&D Center and the Corporate Manufacturing Engineering Center, a fundamental technology development project has been launched and a Lead-free Soldering Application Manual has been prepared covering procedures for the ramp up of mass production, recommended materials and process conditions, reliability of manual soldering, and a process checklist. The Lead-free Soldering Working Group of the Packaging and Assembly Technology Committee is spearheading our efforts to promote lead-free soldering. These efforts resulted in adoption of lead-free soldering in 48 products in fiscal 2002, including personal computers, televisions, cellular phones, refrigerators, washing machines, vacuum cleaners, microwave ovens, copiers, and printers.

Disclosure of product eco-profiles

Information on Toshiba products in compliance with the voluntary environmental standards, products that have gained eco-labels, and products in compliance with the evaluation criteria of the Green Purchase Law* is available (in Japanese) at Toshiba Eco Products (http://www.toshiba.co.jp/env/ecp/index_j.htm) on the Toshiba website (<http://www.toshiba.co.jp>).

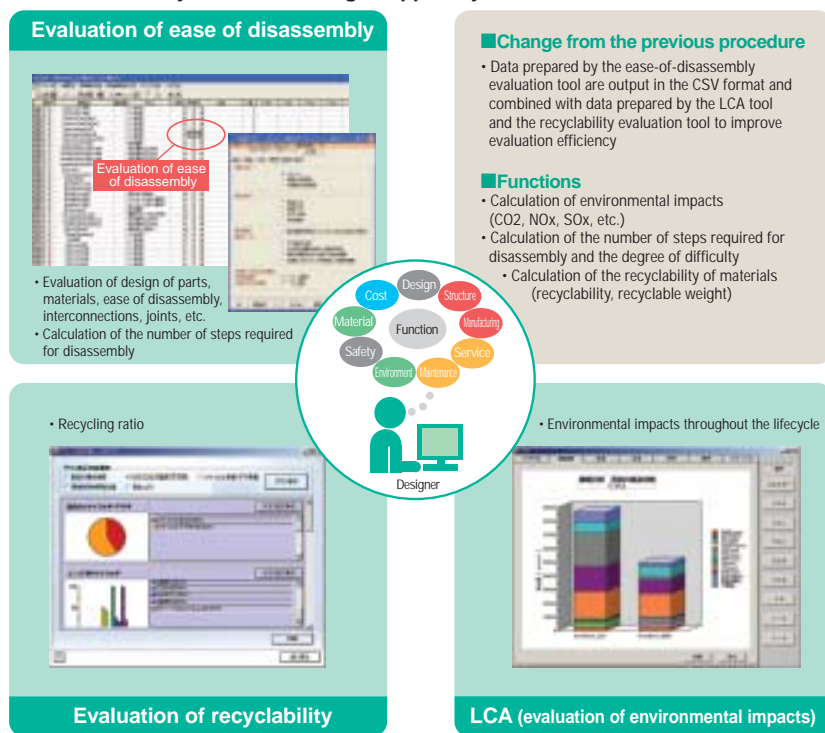
Toshiba's voluntary environmental standards are among the most stringent in the industry and consist of 13 criteria, including 5R design. Products in

compliance with all criteria of the standards are certified as products having high eco-efficiency. These products bear the Toshiba Group Earth Protection Mark. For products that have gained eco-labels, information is provided in accordance with eco-labels, such as Energy Star and Eco Mark, certified by third-party organizations. Products in compliance with the Green Purchase Law are Toshiba products that are in compliance with the evaluation criteria set forth in the basic policies of the Green Purchase Law.

Issues

In view of the increasing application of lifecycle planning to home appliances and IT equipment, Toshiba intends to expand the scope of products to which LCP is applied. Taking legal compliance and costs into account, we are upgrading our environmentally conscious design support system so that it can help designers determine whether a contemplated environmental design is appropriate or not. Also, we recognize the necessity of establishing eco-efficiency indicators in order to clearly express environmental performance.

Environmentally conscious design support system

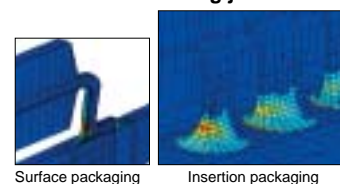


Application of lead-free soldering in products

Year	2000	2001	2002	2003	2004
Basic policy	Apply to home appliances and consumer products (mainly flow soldering)	▼ Substrate technology database Expand application in home appliances and consumer products (shift to reflow/mixed soldering)	▼ Application manual Application to main products	Application to all products (including industrial products)	▼ VPE target
Applied soldering		Sn-Ag-Cu soldering (partly Sn-Ag-Bi-In soldering)		Sn-Cu-based soldering / Sn-Zn-based soldering	
Products	<ul style="list-style-type: none"> TV Washing machine Refrigerator Microwave oven Vacuum cleaner PC Barcode printer 	<ul style="list-style-type: none"> Air conditioner Rice cooker CATV tuner HDD Copier 	<ul style="list-style-type: none"> POS system Cellular phone 		

... Flow soldering
 ... Reflow soldering
 ... Mixed soldering

Technology to project the life of lead-free soldering joints



Manuals and databases



Refrigerators

The scope of consumer needs regarding resource saving in the use of household refrigerators is broadening to include not only reduced electricity bills through energy saving, but also considerations such as the ability to ensure foodstuffs retain their freshness, user-friendliness and improved storage duration to reduce the amount of food thrown away. At Toshiba, we are responding to these needs by furthering the development of the freon-free refrigerator with the launch in September 2002 of the freon-free freezer/refrigerator model GR-NF474K. This model, which includes



the triple-chamber triple-cooling system, the Optical Plasma and Ion Unit and the slide-down shelf, raises efficiency through the use of a new refrigeration unit and a new type of compressor that are ideally suited to a freon-free refrigerant.

Freon-free

We have adopted as a freon-free refrigerant isobutene, one of the hydrocarbon-based substances that do not deplete the ozone layer and which contribute little to global warming. In regard to maintaining safety, a major area of concern has been how to prevent the isobutene from splashing both inside and outside the unit in the event of a leakage. To this end, we have taken the following measures: reduction in the amount of refrigerant, inclusion of explosion-proof electrical components and adoption of a control system that can deal with refrigerant leakage.

Refrigerant	Present freon gas used	Hydrocarbon-based refrigerant
Name(code)	HFC134a	Isobutane
Chemical formula	CH ₂ FCF ₃	CH ₃ (CH ₃) ₂
Ozone Depletion Potential (ODP)	0	0
Global Warming Potential (GWP)	1300 (CO ₂ =1)	3 (CO ₂ =1)
Refrigeration capacity	100 (standard)	Approx. 57 (low)
Theoretical COP (%)	100 (standard)	Approx. 107 (superior)
Combustion characteristics (High Pressure Gas Safety Law)	Noncombustible gas	Combustible gas (1.8vol% — 8.4vol%)

Energy saving

Along with the adoption of the highly efficient refrigerant isobutene, we were able to make energy savings (an electricity consumption rate of 260 kWh per year) through the development of a high-efficiency compressor adapted to isobutene and the enhancement of the refrigeration cycle. Moreover the introduction of another new feature—the slide-down shelf—allows for foodstuffs to be checked daily, which helps ensure that foodstuffs are not forgotten, and that food is not wasted unnecessarily.

Reduction in use of substances with environmental impacts

In order to reduce the usage of substances that impact significantly on the environment we have adopted the following: a non-vinyl chloride gasket, lead-free soldering for PCB assembly and lead free soldering for the welding of the suction pipe of the refrigeration cycle and the heat exchange component.

Air conditioners

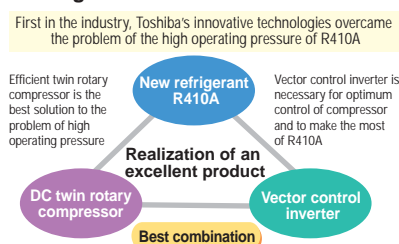
Under our environmental quality oriented inverter and green strategy, Toshiba's Super Power Eco Series of air conditioners for use in stores has remained the industry leader. The new Super Power Eco Series also won the 2002 Energy Saving Award's President of the Agency of Natural Resources and Energy Prize for the third year running in recognition of our highly advanced energy-saving technologies.



Selection of new refrigerant R410A

Previously there were two types of refrigerant available for use in air-conditioners for stores: R407C and R410A. However, from this year R410A has come into wider use. While R410A is highly efficient, it was thought to be technically challenging to adopt R410A to store-use air conditioners due to the need to cope with high pressure. Toshiba has been using R410A since the transfer to a new refrigerant. The result is that we have been able to make use of the characteristics of R401A to come up with a lightweight and compact external unit that has outstanding energy-saving capability.

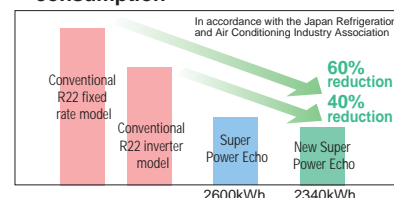
Technologies for adoption of new refrigerant R410A

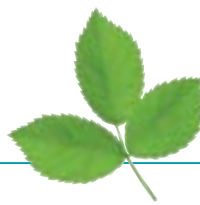


High energy saving

The multiplier effect of the new refrigerant R410A, the DC twin rotary compressor and vector control inverter technology gives the new Super Power Eco series high energy saving capability. In addition, the development of the ventilator and the high-efficiency heat exchange unit and indeed all improvements of functional components have resulted in the achievement of the industry's top energy saver, at an average COP (coefficient of power) for heating and cooling of 4.81. Also, annual electricity consumption is 60% lower than that of a conventional model thanks to a wider variable capacity range and improved partial load efficiency.

Improvement of annual power consumption



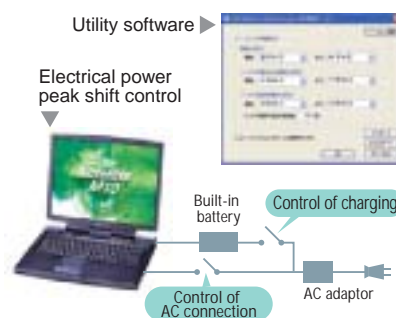
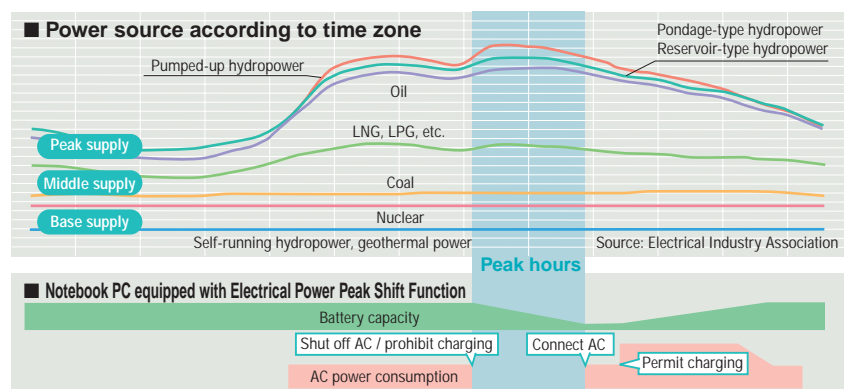


Personal computers

The Electrical Power Peak Shift Function is currently attracting a lot of attention as the latest PC power management technology to help reduce environmental impacts. The electrical power peak shift function on Toshiba notebook PCs automatically regulates AC input during the peak hours for electricity use (especially between 13:00

and 16:00 during the summer), and sets the PC to operate on power that has been stored in a rechargeable battery until that point. Given that the operating rates of PCs in offices are extremely high during peak hours of electrical demand, support of the peak shift function will contribute greatly to regulating power supply.

At Toshiba we are implementing power saving through a multi-faceted approach that includes BIOS, hardware and software. We intend to continue to improve the peak shift function to make it more efficient and easier to use and plan to make it compatible with all business-use models.



※In order to run the peak shift function, the Toshiba Peak Shift Utility is also necessary. Toshiba can supply this at no additional cost to those customers who require it.

Cellular phones

The number of cellular phone subscribers in Japan exceeded 74 million in the spring of 2003, making cellular phones one of the most accessible and familiar portable electronic devices. At Toshiba we are working on environmentally conscious products through the development of low power consumption technology compatible with the sophisticated features of modern cellular phones such as high-resolution liquid crystal displays, high-definition cameras and moving image recording and playback, as well as our pioneering use of energy-saving Li-ion batteries. In February 2003 we developed and launched products that adopt printed circuit boards that are halogen-free and use lead-free solder*.

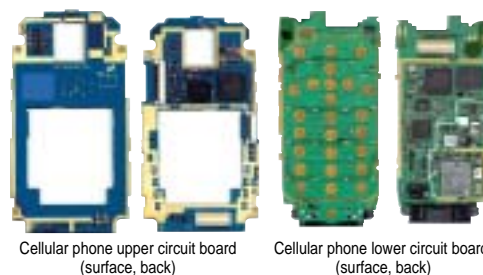


Lead-free solder

Usually, mounting lead-free solder requires the use of a nitrogen reflow furnace, a piece of equipment which enables high-precision temperature control, which means that existing equipment has to be discarded and new equipment installed. We have established technology that can ensure the quality of solder mounting even if an existing atmospheric reflow furnace is used, enabling the use of unleaded solder in cellular phones. We are aiming to fully eliminate the use of lead, an environmentally harmful substance, in solder through the use of this technology.

Halogen-free printed circuit boards

Making cellular phones more resistant to being dropped has been a challenge when using halogen-free circuit boards in mobile phones. The use of halogen-



free circuit boards has been made possible through improved copper foil peeling strength (meaning the tear and peeling resistant strength of the copper pattern etched onto the circuit board). As a result, we have been able to reduce the amount of halogen-family substances (bromine and chlorine), which can lead to the release of dioxins when circuit boards are burned, to less than one quarter of the amount stipulated by the Japan Printed Circuit Association. At Toshiba we will continue to develop and sell cellular phones that are environmentally sound through the implementation of these measures.

Double-deck elevator

The double deck elevator consists of a two-level cage that extends over two stories and which, through so-called double drive*, has 190% of the carrying power of a conventional elevator. Toshiba's double deck elevator provides the following environmental merits:

*Double drive : for example, this may be a system whereby the upper cage serves even numbered floors while the lower cage serves odd numbered floors.

Space and resource saving

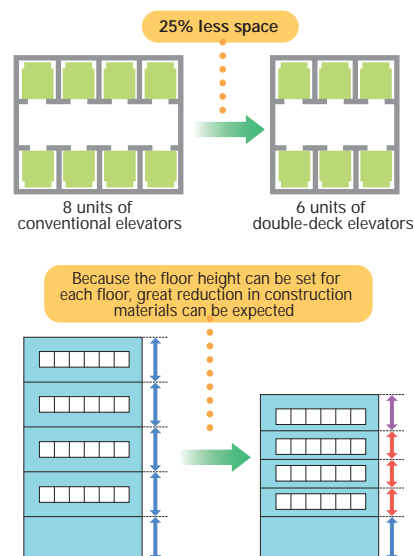
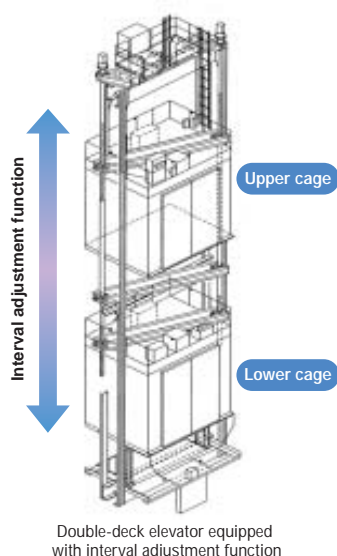
Increased carrying power makes it possible to reduce the space required for elevator installation by 25% in comparison with conventional elevators by reducing the number of elevators necessary. Moreover by overhauling the elevator itself and reducing the number of rails, a 25% weight reduction against two of Toshiba's conventional elevators allows for significant savings in resources.

Further resource saving achieved through the interval adjustment function

Consistency in floor heights was a prerequisite for the installation of the

conventional double-deck elevators. At Toshiba we have developed a double-deck elevator that is equipped with a function allowing for an adjustment in the space between the upper and lower cages in accordance with the height of each floor. This not only allows for increased freedom in architectural design but also is expected to lead to a

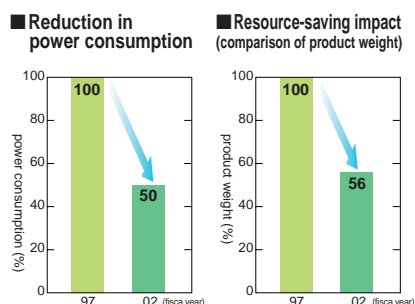
substantial reduction in construction materials. The interval adjustment feature has also achieved a reduction in power consumption through the adoption of a ball screw system in the structure that balances the upper and lower cages and through miniaturization and capacity reduction of the interval adjustment motor.



Medical equipment

X-ray diagnostic unit

By thoroughly consolidating functions and features and implementing high-density layout design, energy consumption has been halved and weight reduced by 44%. Furthermore, modifications in the drive system have allowed for the complete elimination of lead used in the balance weight, which has in turn led to a reduction in environment-related substances.



Universal Angiography

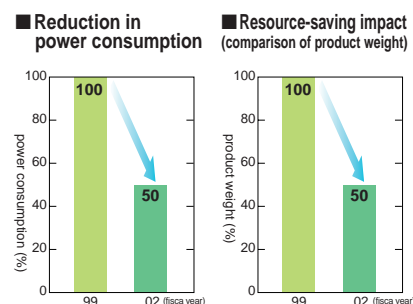


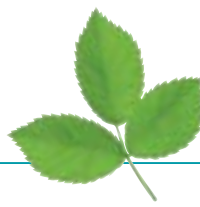
Advanced Multislice CT



X-ray CT scanner

As regards this equipment, resource savings and a 50% reduction in power consumption have been achieved through the development of a new type of data collection unit, and a new method for recomposing images. We are also working on the reduction of environment-related substances such as cadmium through the development of units made from alternative materials.



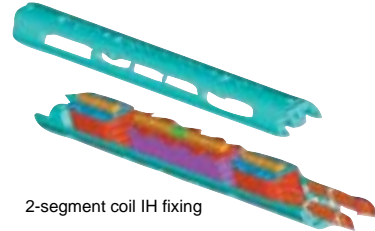


Copiers

Efforts toward energy saving

Through the development of the 2-segment coil for use in high-speed machines and the expansion of IH fixing technology used in medium-speed machines, the e-STUDIO 810

achieves an energy efficiency of 344 Wh/h; this clears the 2006 target standard of 369 Wh/h set by the Rationalization in Energy Use Law. Furthermore, a 62% reduction in warm-up time as compared to existing models has been achieved.

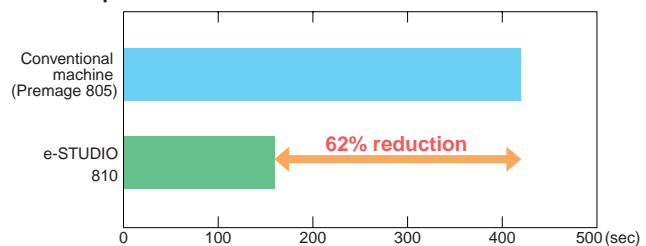


2-segment coil IH fixing



High-speed MFP e-STUDIO 810

■ Warm-up time



Compact self-ballasted fluorescent lamp

In 1980 Toshiba developed and launched the pioneering ball-type (G-type, cap: E26-type) compact self-ballasted fluorescent lamp. Energy saving can be achieved simply by replacing incandescent lamps with these lamps.

Since then, we have steadily continued technological developments such as improvements in arc tubes and lighting circuitry. 1998 saw the debut of the Neo-Ball Z, a compact self-ballasted fluorescent lamp which approached an incandescent lamp in its design (A-type) and which is environmentally efficient. This not only allowed us to further improve environmental efficiency but also enhanced our product line-up, giving us the lead in the lighting industry.

Toshiba's compact self-ballasted fluorescent lamp has the following environmental merits:

- ① Power consumption that is 20-25% that of an incandescent lamp
- ② Operating life that is between three and six times that of an incandescent lamp
- ③ Heat release ratio which is only 20-25% that of an incandescent lamp

As well as this, by making the lamp smaller and lighter, we are making efforts to lessen environmental impacts by such measures as reducing material inputs, employing non-leaded vitrification of the arc tube, eliminating solder from the cap, minimizing the amount of mercury, and using recyclable materials in the casing.



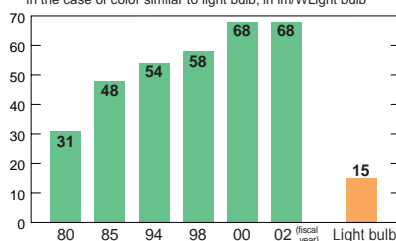
Reflector lamp

Our many years of effort were recognized when we received the 2002 Good Design Award (Ecology Design Award) for our reflector lamp (Type EFR12) that went on sale in the same year.

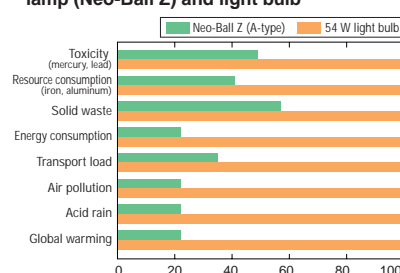
Henceforth we aim to achieve further miniaturization and plan to release products that allow even smaller incandescent lamps to be replaced, and by popularizing and spreading their use beyond their traditional applications, hope to continue making contributions to the preservation of the planet's environment.

■ Improvement of compact self-ballasted fluorescent lamp's eco-efficiency (total flux / power consumption)

Product equivalent to 60 W light bulb; in the case of color similar to light bulb; in lm/W/Light bulb



■ Comparison of environmental impacts between compact self-ballasted fluorescent lamp (Neo-Ball Z) and light bulb



2002 Good Design Award

Gas insulated switchgear

Gas insulated switchgear (GIS) provides a safe and compact switchgear through the inclusion of SF₆, a chemically stable gas which is both non-toxic and odorless, and has excellent cut-off capability and an extremely high insulating yield strength. However, SF₆ contributes approximately 24,000 times more to global warming than CO₂. At Toshiba, we are continuing to make determined efforts to reduce use of SF₆ gas.

The 24 kV solid insulated switchgear (SIS) which we have recently developed makes no use of SF₆, greatly reduces the number of components in comparison

with the GIS, and is smaller and lighter.

Through the use of vacuum bulbs in circuit breakers and isolating switches, which are key switchgear components, and the inclusion of circuit bulbs in high voltage main circuit components we have molded a fixed insulator that has excellent yield strength against SF₆ gas. Furthermore, the development of high-capacity epoxy resin as the main



insulating agent, the simplification of the main circuit structure, and the adoption of an external electrostatic shield have led to the realization of a switchgear for elevators which has 40% less volume, is only half the weight and is SF₆ gas-free. The development of the balance magnetic apparatus, which greatly simplifies the existing structure of the handling mechanism has allowed us to realize a new mechanism which increases operating life span, and greatly reduces the number of components. This contributes to extending the operating life and increasing the resource saving capability of the switchgear.

Steam turbine steel blades

Thermal power generation plays an important role in ensuring a stable power supply. In Japan, 60% of domestic power output relies on LNG, petroleum and coal based thermal power generation.

In recent years, amid worldwide debate regarding environmental problems, improving the efficiency of steam turbines (a major component in thermal power generation) in order to reduce emissions of greenhouse gasses has become an issue of great concern. At Toshiba too, we have been stepping up efforts to improve the efficiency of internal steam turbine components through the development of material technology, raising steam temperature and pressure and improvement of the heat cycle. The elongation of the low-pressure final stage blade and enhancements in its efficiency have enabled the final stage power output to approach 10% of the combined output for the whole turbine, which in terms of improving efficiency is a great achievement. In terms of making the equipment more compact and of enhancing the start-up and stop characteristics of the turbine, how to further improve the turbine continues to be a technical challenge.

Until now restrictions in centrifugal stress



48-inch final stage blade

limited steel turbine blades to 42 inches (1066.8 mm) at 50 Hz and 33.5 inches (850.9 mm) at 60 Hz. In order to exceed these limits, it was necessary to use titanium alloy, which has higher specific tensile strength than iron but is expensive. In cooperation with GE, Toshiba has developed a last stage steel rotor blade of 48 inches (1219.2

mm) at 50 Hz and a similarly designed steel rotor blade of 40 inches (1016 mm) at 60 Hz, which are the largest of their kind in the world. In terms of materials both companies have optimized material components and improved thermal treatments based on their solid content aggregate, and have developed materials that are both strong and reliable. In terms of rotor blade structure, we are adopting a combined structure that has excellent efficiency in reducing vibration while at

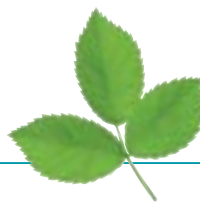
the same time minimizing the centrifugal force of the blades through an optimized configuration and thinner walls. This not only allows for a tremendous reduction in exhaust loss, which accounts for around 15% of the total turbine loss, but, with 50 Hz 600 MW thermal turbines, also allows for a reduction in the number of low pressure turbines from 2 to 1, leading to a more economical use of plant resources.

These new 40/48-inch steel blades will be adopted from 2003 onward in thermal turbines used in combined cycle power generation and conventional steam power generation. By simultaneously achieving



Rotor for testing rotation of 48-inch final stage series

wide-ranging improvements in the power generating and economic efficiency of thermal turbines, as well as by making them more compact, we can expect great contributions to be made to the reduction of environmental impacts.



Green procurement

As a part of our efforts to create environmentally conscious products, we are promoting procurement of products, parts and components, materials and raw materials that have less environmental impact in cooperation with our suppliers.

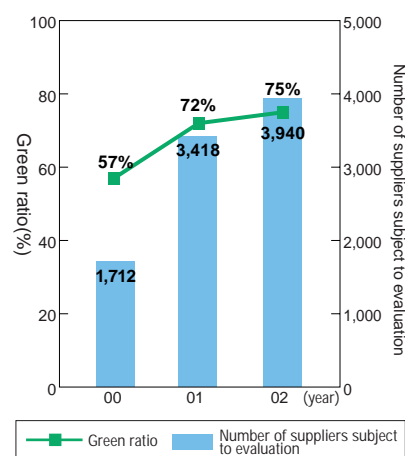
Development to date

Since April 2000, Toshiba has been conducting green procurement of parts and materials in accordance with the Green Procurement* Guidelines established in December 1999. At present, Toshiba procures green items from some 4,000 suppliers.

Toshiba uses the "green ratio" as an index for measuring procurements activities.

$$\text{Green ratio} = \frac{\text{Number of suppliers in Rank S + Rank A}}{\text{Total number of suppliers evaluated}}$$

■ Enhancement of the green ratio



• Evaluation and selection of suppliers

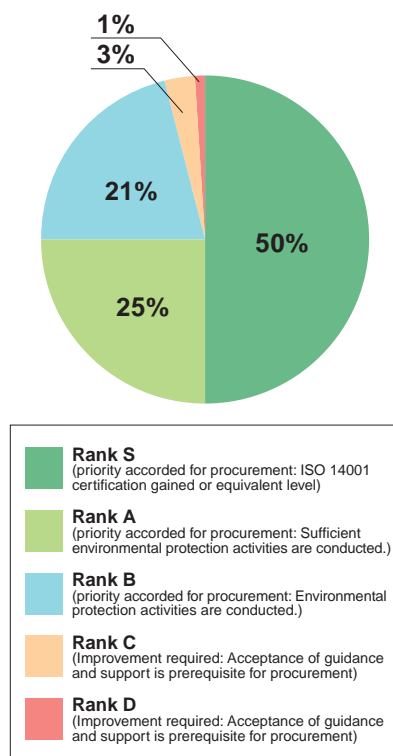
Suppliers are required to conduct self-evaluation of their environmental protection activities by completing forms provided by Toshiba. Toshiba accords priority to suppliers who are in the higher ranks.

In addition, upon request Toshiba's in-house specialists provide guidance to suppliers regarding their improvement activities. The results of suppliers' self-evaluation are improving year by year.

• Selection of procurement items

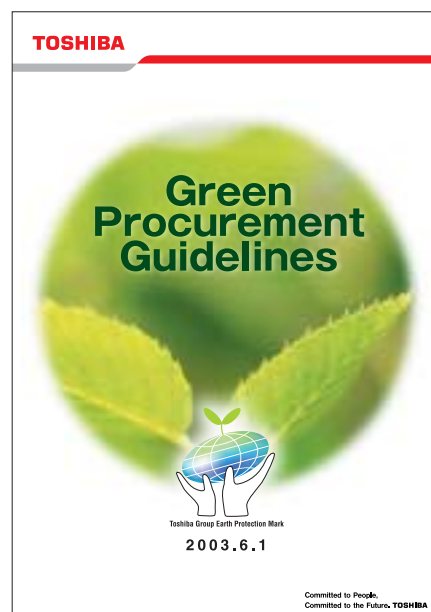
In cooperation with suppliers, Toshiba conducts an environmental performance survey for procurement items using such criteria as the ratios of environment-related substances and scarce resources to the weight of a procurement item, and accords priority to items that are superior in terms of reduction of environmental impacts. In the context of green procurement, environment-related substances are chemical substances contained in parts and materials to be incorporated in Toshiba products. Substances that are only used during manufacturing processes and are unlikely to be contained in products are subject to chemical substance control (see Page 18). These data, available in an in-house database, are utilized for developing environmentally conscious products.

■ Level of suppliers' environmental protection activities for fiscal 2002



Issues to be tackled

In view of the heightening interest in environmental issues within society and increasingly stringent requirements



relating to the social responsibilities* and ethics of companies, we have revised the Green Procurement Guidelines in terms of the items described below and published a revised version in June 2003.

• Revision of environment-related substances

In accordance with the revisions of laws and regulations in Japan and the issue of the Directive on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS Directive) of the EU, Toshiba revised the guidelines' coverage of substances. The number of groups of substances whose use is to be prohibited has been increased from four to 29, the number of the groups of substances whose use is to be reduced or to be substituted by alternative substances has been changed from 19 to 18, and the number of groups of substances whose use is to be controlled has been changed from 31 to 24. As a result, the total number of groups of environment-related substances has become 71, covering some 1,100 substances.

• Revision of evaluation and selection criteria for suppliers

The number of evaluation items has been increased and the frequency of evaluation has been clarified so as to enhance the quality of the suppliers' environmental protection activities.

4 Environmental considerations at recycling

Recycling of household appliances

In the more than two years that have passed since the Home Appliance Recycling Law came into force in April 2001 recycling of home appliances has made considerable progress. A questionnaire survey concerning the Home Appliance Recycling Law conducted by Toshiba in fiscal 2002 revealed that 91% of respondents were aware of the law, suggesting a high level of public interest in the Home Appliance Recycling Law.

Result of recycling

In accordance with the Home Appliance Recycling Law, end-of-use home appliances (air conditioners, televisions, refrigerators, washing machines) are first taken back by retailers and then transferred to take-back sites designated by manufacturers. According to data for fiscal 2002 announced by the Ministry of Economy, Trade and Industry, 10.15 million units of end-of-use home appliances (four products) were

collected at designated facilities, a 19% rise from the 8.55 million units collected in fiscal 2001. Toshiba (including Toshiba Carrier) collected 1.56 million units of end-of-use home appliances (four products), accounting for 15% of the total number of units collected nationwide; a percentage virtually unchanged from the previous year. The figures below show Toshiba's recycling results and the recycling rates for the four products.

Development of recycling technology

In order to effectively utilize materials and parts contained in end-of-use home appliances, it is vital to develop elemental technologies for parts disassembly, material classification and foreign object removal. In particular, Toshiba is vigorously developing material reforming technology to effectively utilize waste plastics, which is a crucially important task. We are focusing on recycling of waste

plastics as materials for products. Waste plastics used for TV rear cabinets and washing machine tanks are crushed and cleaned in preparation for remolding.

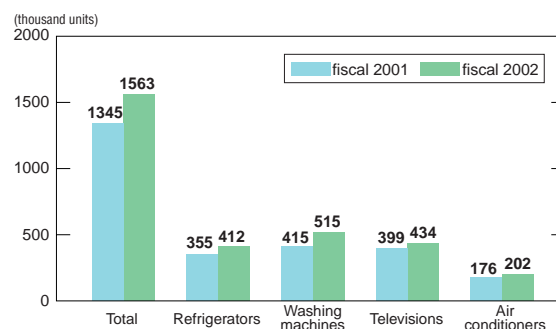
According to the above-mentioned questionnaire survey, 40% of respondents stated they accord importance to environmental considerations when purchasing home appliances and 50% accord importance to some extent. Thus, a product's degree of environmental friendliness is an important selection criterion for 90% of respondents. Demand for products with good environmental credentials is expected to increase.

In order to promote environmental considerations in recycling, it is essential to develop a more efficient recycling system and to develop excellent recycling technologies and environmentally conscious products. Toshiba's efforts to respond to these needs are underpinned by close cooperation among the operations concerned.

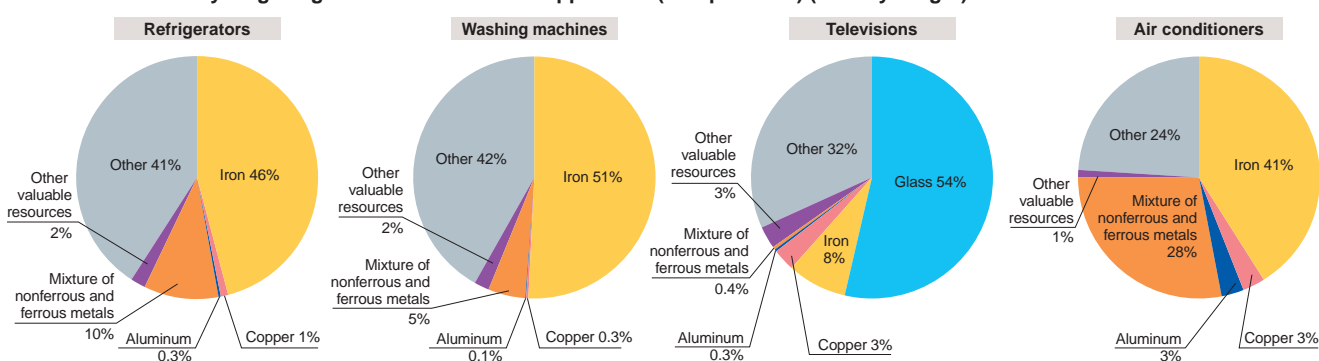
■ Results of recycling of end-of-use home appliances (four products)

Classification	Refrigerators	Washing machines	Televisions	Air conditioners
Number of items collected at designated take-back sites (thousand units)	412	515	434	202
Number of items processed for recycling (thousand units)	410	513	432	202
Weight of items processed for recycling (t)	24,970	15,484	12,194	9,198
Weight of items recycled (t)	14,845	9,092	8,395	7,042
Recycling rate (%)	59	58	68	76
Recycling rate mandated by the law (%)	50	50	55	60

■ Number of units taken back



■ Breakdown of recycling usage for end-of-use home appliances (four products) (ratio by weight)





Recycling of personal computers

End-of-use PCs discharged by businesses

Toshiba has long been a recycler of end-of-use PCs. Based on the results of experiments, we have concluded that manual disassembly is the most efficient method for enhancing the recycling rate.

In accordance with the Law for Promotion of Effective Use of Resources revised in April 2001, in order to promote collection and recycling of end-of-use personal computers discharged by businesses, Toshiba set up the PC Recycling Center in Yokohama and recycling facilities in ten major cities in Japan.

In fiscal 2002, Toshiba processed 29,140 units or 295 tons of notebook and desktop PCs and monitors, nearly 1.5 times the volume processed in the previous year. Also, with the aim of achieving efficient collection utilizing the existing transport network, Toshiba has obtained a license to engage in the "large-area recycling specified industrial waste disposal business" in accordance with the special measure of the Waste Management Law. Since April 2003, taking advantage of this license, Toshiba has been endeavoring to reduce administration costs and transport costs of businesses that discharge end-of-use PCs so as to increase the number of units collected and the recycling rate. The graphs below show recycling rates for fiscal 2002. In the case of PCs, chemical recycling and thermal recycling are not within the definition of

"recycling" and reuse of parts and components and material recycling are required. Toshiba has not collected standalone LCD displays under this program so far.

Toshiba PC Recycling Center at Term Corp.

20-1 Kansei-cho, Tsurumi-ku, Yokohama 230-0034, JAPAN

Tel: +81-45-510-0255
(office open from 9:00 to 17:00 [JST])

End-of-use PCs discharged by consumers

In accordance with the revision of the ministry ordinance for the Law for Promotion of Effective Use of Resources in April 2003, a system for collection and recycling of end-of-use PCs discharged by consumers is to be introduced on October 1, 2003.

The PC3R Promotion Committee of the Japan Electronics and Information Technology Industries Association (JEITA) has taken the leading role in establishing this system that stresses convenience since the PCs in question will be discharged by consumers.

Toshiba together with 20 other PC manufacturers is participating in this recycling system. Japan Post, which was launched as a public corporation in April 2003, and its partner Sankyu Inc. are the linchpins of the system. Japan Post's more than 20,000 post offices (excluding contracted post offices) nationwide have been designated collection points for 21 PC manufacturers.

Additionally, utilizing Japan Post's Yu-Pack parcel post system,

consumers can phone larger post offices to request collection of discharged PCs from their homes at no additional cost. Because post offices are the points of contact, high quality, uniform service is available throughout Japan.

Also, each manufacturer is to set up recycling facilities. Considering transport efficiency, Toshiba intends to open several recycling facilities. The details will be posted at our website "dynabook.com" (<http://dynabook.com/pc/>) as soon as they are finalized.

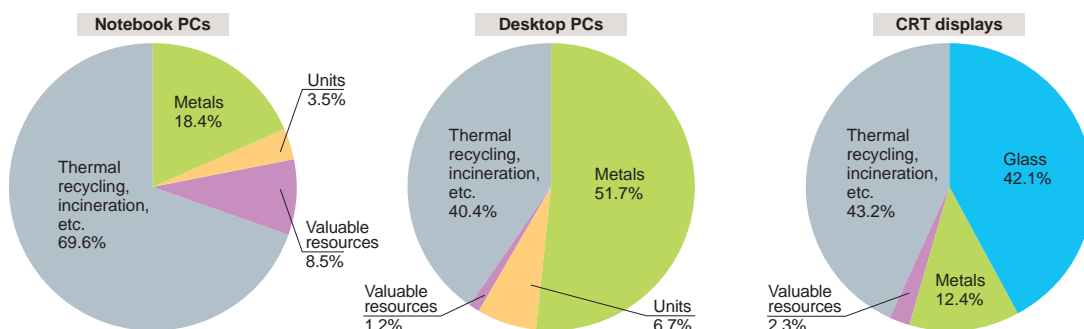
PC Recycling Mark affixed to home PCs sold from October 2003 onward

No fee for collection and recycling will be charged when home PCs sold from October 2003 onward are discharged. However, a fee will be charged for PCs sold prior to October 2003 at the time of discharge.



To ensure clarity, PCs sold under the new system will bear the PC Recycling Mark shown above. Toshiba intends to print this recycling mark on the nameplate, but details have yet to be finalized. Information on the fee for collection and recycling of PCs that have already been sold and the contact for inquiries is to be posted in September at the above-mentioned website.

■ Breakdown of recycling usage for end-of-use PCs (ratio by weight)



Financial performance

Overview of operations in fiscal 2002

Although the Japanese economy appeared to have bottomed out at the beginning of the fiscal year under review and there were indications of a patchy recovery, a decisive upturn in private-sector capital investment did not materialize and personal consumption remained sluggish as weak stock markets in the United States and Japan and deflationary pressure on the world economy persisted.

Despite these adverse circumstances, Toshiba recorded large increases in sales of semiconductors and other electronic devices and international personal computer sales thanks to the greater demand for digital products for consumers and the economic growth of Asian countries. On the other hand, sales of systems to public institutions and industrial equipment declined, affected by sluggish capital investment in Japan in both the public and private sectors. Also, sales of home appliances declined due to lackluster personal consumption in Japan and falling retail prices. However, overall, consolidated net sales increased by 5% from the previous year to ¥5,655.8 billion. There was a great recovery in profits thanks to the increase in sales by the semiconductor operation and the impact of restructuring. Moreover, the corporate-wide "01 Action Plan*" led to a strengthening of the competitiveness of operations. As a result, Toshiba reported consolidated operating income of ¥115.5 billion, an improvement of ¥229.1 billion from the operating loss for the previous year. All segments reported profits.

Financial position in fiscal 2002

Total assets decreased by ¥168.8 billion owing to the ongoing implementation of "01 Action Plan". Inventories were reduced by 9% despite a 5% increase in net sales. Interest-bearing debt decreased by ¥

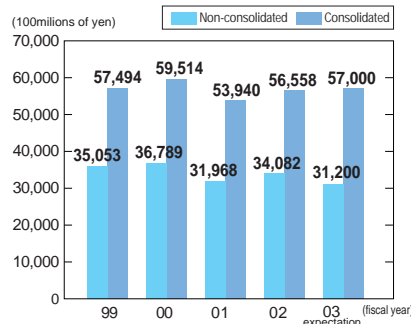
165.1 billion from the previous year to ¥1,653.4 billion mainly due to an increase in free cash flow of ¥123.6 billion. Total shareholders' equity decreased by ¥134.3 billion from the end of the previous year to ¥571.1 billion, resulting in an equity ratio of 10.9%. Total shareholders' equity is expected to improve by approximately ¥200 billion due to transfer of the Toshiba employees' pension fund amounting to ¥100 billion to the government and an increase in free cash flow.

Forecast for fiscal 2003

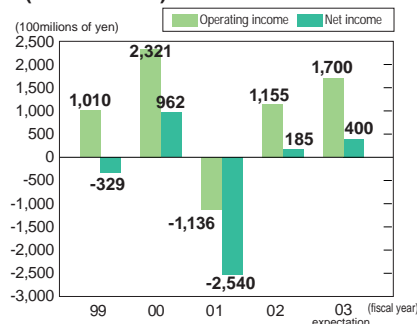
Private-sector capital investment is expected to remain sluggish in the first half of fiscal 2003 and the prospects for both the US and Japanese economies remain unclear. In the second half the Japanese economy may shift toward a recovery track. Toshiba forecasts consolidated net sales of ¥5,700 billion, a 1% increase year on year. Sales of personal computers, visual products and other

digital products, and electronic devices including semiconductors and LCD displays are expected to increase. Sales forecasts reflect a decline in sales amounting to ¥160 billion resulting from the transfer of certain businesses to non-consolidated operations. If the transferred businesses were included, the forecast consolidated net sales would increase by ¥200 billion or 4% year on year. The forecasts for profits are as follows: operating income of ¥170 billion, income before income taxes of ¥90 billion and net income of ¥40 billion. A positive free cash flow of ¥100 billion is expected.

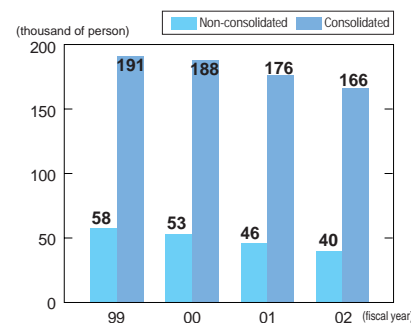
■ Net sales



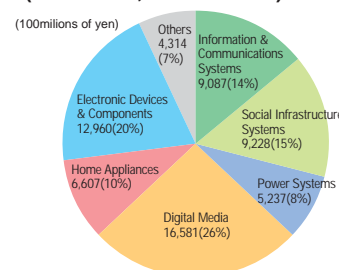
■ Operating income and net income (consolidated)



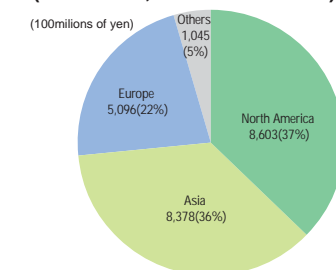
■ Number of employees



■ Net sales by business segment (fiscal 2002, consolidated)



■ Net sales by geographic segment (fiscal 2002, non-consolidated)



※Please refer to Toshiba Annual Report 2003 for details of Toshiba's business and financial information. The information is also available on the Internet at (http://www.toshiba.co.jp/about/ir/disclaimer_e.htm).



R&D

Development of new environmentally conscious technologies

Toshiba's environment-related R&D activities are concentrated at the Corporate Research & Development Center where R&D of next-generation environmental technologies is promoted.

The Environmental Technology Laboratory was established to investigate the potentials of environmental businesses. The Environmental Technology Laboratory is engaged in R&D concerning the environmental field, centering on environmentally conscious materials and environmental IT, with the

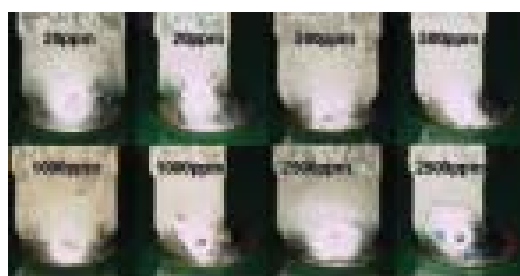
aim of identifying issues the Industrial and Power Systems & Services Company and other in-house companies may encounter in the future and of incorporating the environmental viewpoint in all businesses of Toshiba Group. Some of the laboratory's principal research themes are introduced below.

■ CO₂ absorbing ceramics



Toshiba has developed new CO₂ absorbing ceramics whose capacity is more than ten times that of conventional CO₂ absorbing ceramics. Because repeated use at high temperature exceeding 500°C is possible, numerous applications are envisaged.

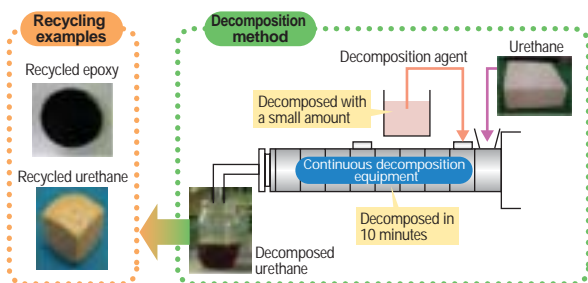
■ Tin and zinc-based lead-free soldering



[Oxygen concentration in atmosphere and Sn-Zn soldering flow-up]

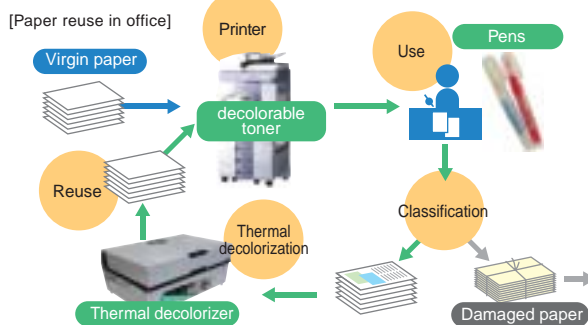
Application of flux suitable for low-oxygen-concentration atmosphere has made it possible for cost-competitive Sn-Zn soldering to be done in the same manner as conventional soldering.

■ Recycling of urethane resins



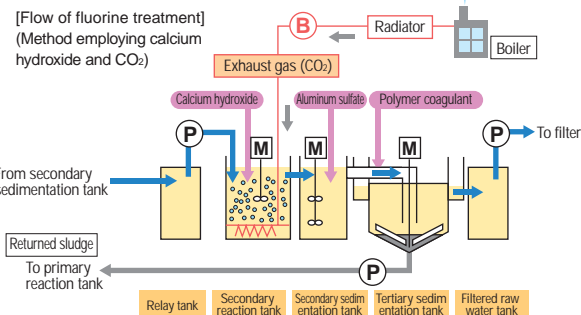
Urethane resins are efficiently decomposed and recycled as raw materials for urethane and epoxy resins without waste.

■ Decolorable ink



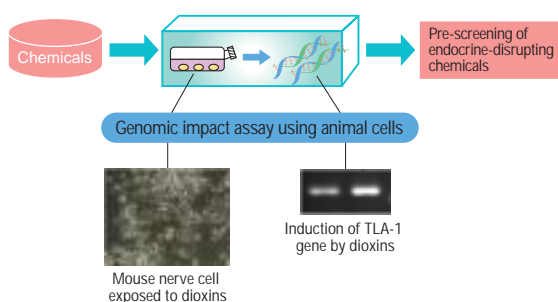
Use of decolorable toner, which can be erased with heat in large quantities at low cost, enables reuse of paper and eliminates waste.

■ Treatment of waste water containing fluorine



Toshiba has developed a treatment method employing calcium hydroxide and CO₂ that enables reduction of fluorine concentration after waste water treatment at low cost. This method is also useful for fixing CO₂.

■ Genomic analysis of risks of endocrine-disrupting chemicals



Toshiba has developed a screening technology to detect risks of endocrine-disrupting chemicals expressed as an index regarding the impact on the genome.

Comprehensive solutions for the environment

Systems

- Sludge gas fuel cell power generation system
- Cogeneration system

Sludge gas fuel cell power generation system <Conversion of sludge into energy>

Drain sludge, which previously was incinerated or disposed of by landfill, is converted into biogases for use in fuel-cell power generation to produce electricity and heat.

Group 1, Electrical & Control Systems Engineering Dept. 2, Public Facilities Tel: +81-3-3457-4444



Sludge gas fuel cell power generation system

Cogeneration system <Environmentally friendly energy system >

Cogeneration systems promote energy saving and reduce emissions of CO₂ through effective utilization of electricity and heat. They are economical, too. Use of a cogeneration system in combination with commercial power sources assures stable power supply and reduces contract demand for commercial power.



Toshiba Fuchu Complex's Energy Center

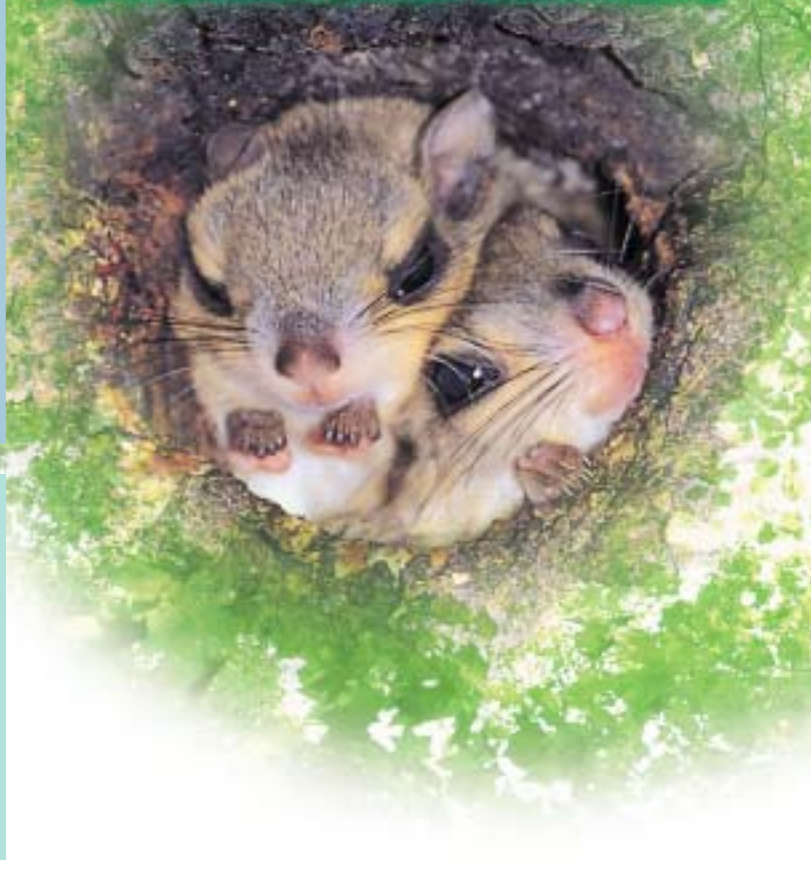
Electrical & Control Systems Engineering Dept. 1, Buildings & Government Facilities
Tel: +81-3-3457-4320

Tools

- Environmental impact evaluation (LCA*)
- Recyclability evaluation
- Ease-of-dismantling evaluation
- LCC estimation support
- Ease-of-assembly evaluation
- CAE and CAD
- Product environmental information
- Environmental data management
- PRTR* support
- Chemical substance comprehensive control

In order to improve the Earth's environment, Toshiba is committed to doing its utmost to promote comprehensive environmental solutions. It is Toshiba's earnest desire to contribute to society through reduction of the environmental impacts of production activities, development of environmentally conscious products based on a consideration of manufacturing, use, disposal and recycling, development of recycling technologies, and construction of environmental plants and involvement in environment-related services.

Toshiba's comprehensive environmental solutions





Consulting services on environmental issues

- Support for establishment of ISO14001*/9001-compliant systems
- ISO14001*/9001-related environmental education
- Consultation for improvement of facilities' and operations' environments
- Consultation for environmental protection activities of overseas subsidiaries

Environmental consulting services <Toshiba technologies brought into full play>

To help realize a recycling-based society, Toshiba Group utilizes its expertise in the provision of consulting services on environmental themes.

Environmental Management Division, Term Corp. Tel: +81-45-510-6834



Consulting services

Environmental education



Businesses

- Recycling of plastics
- Recycling of end-of-use household appliances
- Recycling of waste
- Environmental engineering

Thermal decomposition gas conversion system <Recycling of auto shredder residue as resources and energy>

Dry distillation decomposition technology is applied to recover auto shredder residue (ASR), which in the past had been disposed of mostly by means of landfill, as clean gas fuels and carbonaceous sub-materials. It also contributes to reduction of CO₂ generation. A thermal decomposition gas conversion system that generates power using gas fuels recovered from 60 tons of ASR per day has been in operation since October 2001. A recycling ratio (ratio of recycled volume to input volume) of 95% has been achieved.



Thermal decomposition gas conversion system

Environmental Systems Marketing & Sales Department Tel: +81-3-3457-4188

Sapporo Plastic Recycling Co., Ltd. <Oil reclamation from waste plastics>

In response to the Containers and Packaging Recycling Law, Toshiba opened a plant for reclamation of oil from waste plastics (processing capacity: 40 tons/day) at a recycling technology park in Sapporo in April 2000. In fiscal 2002 the plant processed 8,300 tons of waste plastics. Oil and residue resulting from thermal decomposition of waste plastics and oil reclamation are recycled as items with value, contributing to reduction of environmental impacts. The recycling ratio in fiscal 2002 exceeded 80%.



Environmental Systems Marketing & Sales Department
Tel: +81-3-3457-4188

The plant

Equipment

Water

- Ozonizer
- Electrodeless ultraviolet sterilizer
- Anaerobic bioreactor
- Equipment for converting sludge into gas
- Equipment for converting sludge into compost
- Centrifugal thin-film sludge dryer
- Waste effluent filtration equipment



Energy

- Cogeneration equipment
- Fuel cell, solar cell



Atmosphere

- CFC decomposition equipment
- Gas treatment equipment using plasma technology



Waste

- Oil reclamation equipment for waste plastics
- Dechlorination equipment for waste plastics
- Crusher for large waste

Gas treatment equipment using plasma technology <Decomposition of toxic substances using plasma>

Based on the development concept of gas treatment using electric energy with minimum use of chemical substances and additives, Toshiba sought to expand the application of plasma technology. The results include retaining the freshness of vegetables in refrigerators longer, deodorizing of refrigerator compartments, and deodorizing using smoke separators. Toshiba started development with the objective of applying plasma technology to treatment of exhaust gases from automobiles so as to reduce NO_x and N₂O, and thus protect the atmosphere and help prevent global warming.



Toshiba air cleaning system incorporating electric-discharge optical catalyst

Electrical and Mechanical Systems R&D Department
Power and Industrial Systems Research and Development Center
Tel: +81-45-510-6201

6 Coexistence with the community

Human resources

Basic policy regarding human resources

The objectives of Toshiba's Human Resources Management Policy are that every employee should develop excellent capabilities, achieve his or her full potential, and that the highly motivated and creative activities of all employees should be combined to achieve business goals. This policy is at the heart of our human resources remuneration system.

Human Resources Management Policy (extract)

Human resources are the most valuable assets

Toshiba greatly values its human resources and provides employees with opportunities to realize their full potential, enhance their capabilities and maximize their value.

Utilization and development of human resources

Since the essential tasks of human resources management are deployment and development of employees, Toshiba endeavors to match the right person with the right assignment.

Scoring system for selection and evaluation of employees

In selecting and evaluating employees, Toshiba adopts a scoring system whereby employees are awarded points based on concrete results.

Human resources system

Toshiba has put in place various systems and procedures to ensure that all employees can achieve satisfaction and fulfillment through their tasks. Essentially, the human resources system is designed to provide greater opportunities to highly motivated people, evaluate the results of their performance fairly, and link the evaluation with the remuneration they

receive.

We are enhancing our systems to provide employees with opportunities to acquire more advanced capabilities and to fully utilize those capabilities so as to achieve positive results.

Education and training systems

Toshiba's education and training systems are designed to enable employees to acquire sophisticated expertise that is in line with their own goals and aspirations.

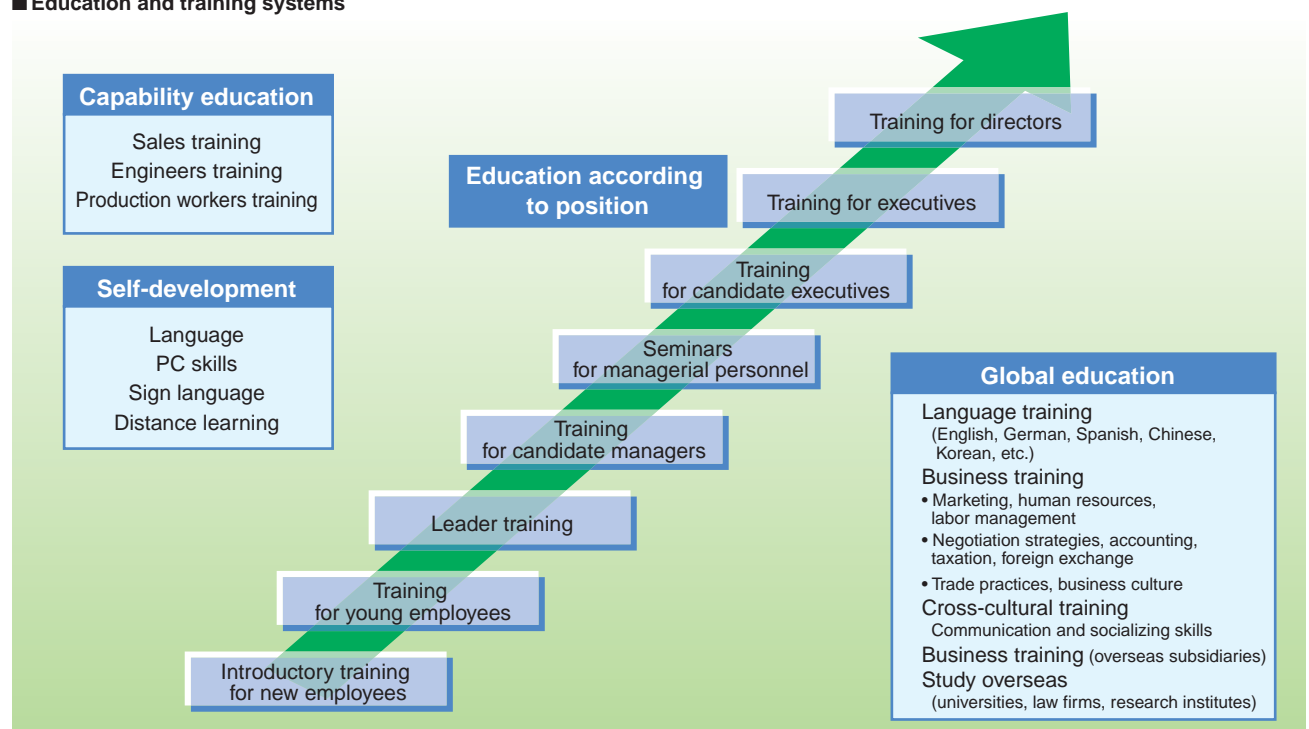
We focus on educational programs tailored to the needs of specific groups of employees rather than providing a uniform educational experience for all employees. Accordingly, the various educational programs offered target business needs while supporting employees' career development.

Also, "career vision seminars" covering career development, employee lifecycle issues and health and welfare issues provide employees with opportunities to shape their futures.

Human resources utilization and development systems

CDP	Based on the medium- to long-term business plans, individual's career development visions are formulated and training programs and work tasks are assigned systematically.
Goal management	With the aim of achieving the goals of each organization, goals are broken down and tasks are assigned to each employee; the employee and his or her superior execute follow-up.
Self-appraisal	Employees analyze and evaluate their performance, capabilities and talents, and clarify their tasks and career vision.
Open recruitment in Toshiba Group	Deployment of highly motivated employees identified in Toshiba Group is designed to accelerate the shift of human resources to growth fields and priority fields, enhance employee morale, and vitalize workplaces.
In-house free agent	Employees can register themselves as free agents with organizations and indicate the type of work they desire. This system enables employees to make a more active commitment to their career development.

Education and training systems





Toshiba Standards of Conduct

Toshiba Group's management policy is expressed in the Basic Commitment of the Toshiba Group: ①Based on our commitment to people, we are determined to ②help achieve a higher quality of life, and ③do our part to help ensure that progress continues within the world community. With the aim of achieving these objectives, Toshiba Standards of Conduct for domestic operations and Toshiba International Standards of Conduct for overseas operations were established in 1990 to provide standards of conduct for Toshiba directors and employees. Subsequently, following several revisions made in response to changing circumstances, Toshiba established new Toshiba Standards of Conduct as of April 1, 2001, from a global perspective by combining the domestic and international versions of

the previous standards of conduct.

Significance of Toshiba Standards of Conduct

In the early years of the 21st century, society, the economy and politics are changing dramatically. In these circumstances, it is necessary for Toshiba to exercise self-discipline based on the high ethical standards befitting a good corporate citizen so as to realize the Group's management policy of contributing to communities around the world.

In the course of its long history, Toshiba has gained varied experience while conducting business dynamically in a business environment characterized by differing values and cultural diversity. In order to develop further in a rapidly changing environment, it is increasingly important to cultivate a corporate culture and organizational structure conducive to everyone bringing their personalities and capabilities into full play and to establish a fair and transparent management system.

Toshiba Standards of Conduct expresses Toshiba's values and provides a code of conduct for everyone involved in Toshiba's business activities, and thus, defines Toshiba's personality within society as a whole.

Systems for implementing Toshiba Standards of Conduct

To ensure that employees understand and put Toshiba Standards of Conduct into practice, the following systems are provided.

•Implementation officer

A senior executive vice president is appointed as the implementation officer responsible for ensuring compliance on behalf of the president.

•Compliance Committee

The Compliance Committee consisting of certain directors and chaired by the implementation officer promotes Toshiba Standards of Conduct, deliberates on measures concerning



compliance, and establishes systems. The committee is also working to cultivate a corporate culture that stresses compliance.

•Implementation executives

In-house company presidents serve as implementation executives who promote implementation of Toshiba Standards of Conduct in their organizations.

•Education for all employees

All employees are provided with the Toshiba Standards of Conduct handbook to facilitate their understanding and implementation of the standards and receive education using videos.

•Risk Hotline

In the event that any employee becomes aware of any conduct that may be in breach of Toshiba Standards of Conduct, he or she is encouraged to directly report it via the Risk Hotline. Also, employees can use the Risk Hotline to get advice and information on matters related to compliance in general (legal compliance, compliance with rules, etc.).

Global development

Toshiba Standards of Conduct has been adopted by over 450 Toshiba Group companies worldwide. Adherence to Toshiba Standards of Conduct, which constitutes the base for compliance with laws, social norms, ethics, and so on is a prerequisite for achieving growth far into the future as a global enterprise.

Items of Toshiba Standards of Conduct

1. Standards of conduct concerning relations with communities
2. Standards of conduct concerning environmental protection
3. Standards of conduct concerning export control
4. Standards of conduct concerning compliance with antitrust regulations
5. Standards of conduct concerning prohibition of inappropriate expenditure
6. Standards of conduct concerning donations
7. Standards of conduct concerning political donations
8. Standards of conduct concerning contracts with governments
9. Standards of conduct concerning respect for customers
10. Standards of conduct concerning engineering activities, quality assurance and product safety
11. Standards of conduct concerning sales activities
12. Standards of conduct concerning procurement activities
13. Standards of conduct concerning public communications
14. Standards of conduct concerning advertising
15. Standards of conduct concerning information
16. Standards of conduct concerning intellectual property
17. Standards of conduct concerning respect for people
18. Standards of conduct concerning workplace environments
19. Standards of conduct concerning external activities

Safety control and health care rooted in respect for the individual

Safety control and healthcare

Toshiba's policy on safety and healthcare is to provide a safe and comfortable work environment conducive to the physical and mental health of everyone from the viewpoint of respect for the individual.

Safety control

In fiscal 2003, the first year of the occupational safety and health management system (OSHMS), Toshiba Group intends to systematically implement safety and health-related activities in the Plan-Do-Check-Act (PDCA) cycle. Some 90 staff have received training concerning OSHMS. They checked the current situation using the safety and health activities evaluation checklist consisting of 150 items and identified the priority issues to be addressed in the current year.

The graph below shows rates of occurrence of accidents at work per one million hours. Compared with the average for industry in Japan, Toshiba has an excellent record.

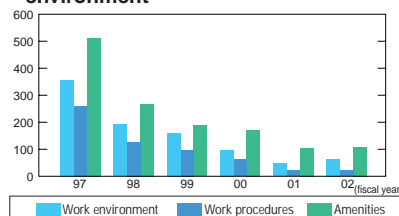
Work environment and healthcare

The results of evaluation of workplaces show that the tempo of improvement has

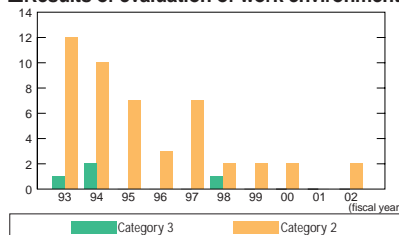
been slowing.

The number of workplaces that handle toxic substances and are classified as Category 2 or 3, which means the work environment requires improvement, has been decreasing. However, two workplaces were classified as Category 2 due to inadequate local exhaust systems. Thorough maintenance and inspection of equipment are required.

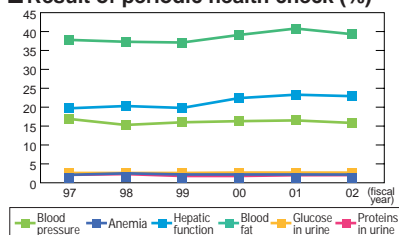
■ Results of evaluation of workplace environment



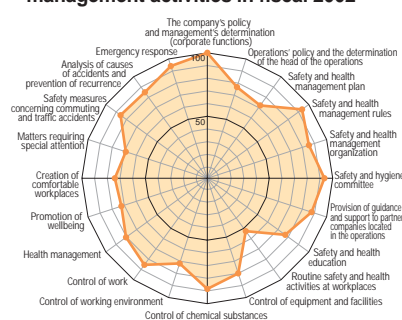
■ Results of evaluation of work environment



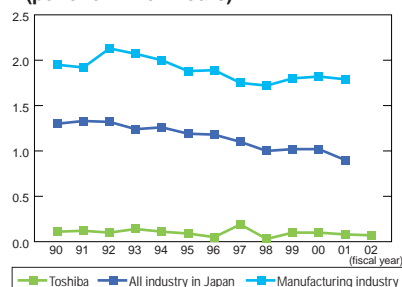
■ Result of periodic health check (%)



■ Results of evaluation of safety and health management activities in fiscal 2002



■ Rates of occurrence of accidents at work (per one million hours)



Toshiba Group companies participated in the 28th congress whose theme was "mental and physical wellbeing." At the congress, excellent groups and individuals in terms of safety and health activities received awards. Guest speaker Dr. Satoru Shima, professor of Tokyo Keizai University, discussed the relation between mental health and the workplace. The congress is an opportunity for employees to renew their commitment to ensuring the safety and wellbeing of everyone at Toshiba.



10th Toshiba Medical Congress

This congress is held annually to provide doctors, industrial physicians, nurses and hygienists who work at Toshiba Hospital with an opportunity to exchange information. Some 200 people participated in the congress which featured 11 lectures, 17 presentations, and a lecture by Dr. Hiroshi Ono of Keio University on the application of cognitive behavioral therapy to the treatment of mental health.



Ono of Keio University on the application of cognitive behavioral therapy to the treatment of mental health.

Central Safety and Hygiene Committee

At every Toshiba operations there is a safety and hygiene committee to ensure the safety and wellbeing of employees. The central committee, consisting of Toshiba managers and members of the labor union, meets once every six months to discuss matters concerning accident prevention and promotion of the wellbeing of employees throughout Toshiba Group. The agenda includes reporting on the situation regarding safety and health, explanation of the basic policy for the following year, measures to prevent traffic accidents, etc.



Environmental education

In order to maintain and enhance the level of environmental protection, all Toshiba personnel receive environmental education according to their positions and the tasks in which they are engaged. The curriculum consists of education programs according to position and specialty education.

General environmental education

General environmental education is provided according to position at operations and affiliated companies. For corporate general education, e-learning* was introduced in 2002 to eliminate travel time and improve the participation rate. Some 8,300 employees at the headquarters and branches have utilized e-learning so far. Programs for managerial personnel include a course designed to cultivate environmental awareness. On that course, in addition to gaining knowledge of a more general nature, participants disassemble personal computers so that they recognize the importance of environmentally conscious products.

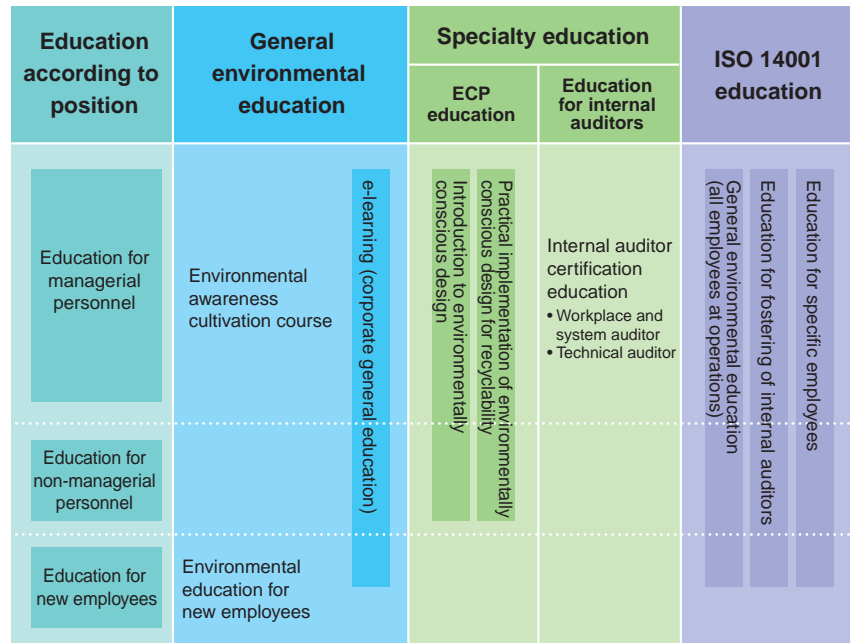


Testing the understanding of new employees following a lecture

Specialty education—ECP education

The objective of this program is to ensure that engineers engaged in development and design fully understand the concept of environmentally conscious product (ECP) design. The importance of this program is increasing as the recycling-based society takes shape. The program consists of an introductory course on environmentally conscious design and a course on its practical implementa-

■ Environmental education system chart



tion to achieve recyclability. The introductory course is designed to raise engineers' awareness of eco-design and to promote LCA*, a basic tool for disclosure of environmental information. The practical course, introduced in fiscal 2003, focuses on the development of ECPs from the perspective of recyclability as well as ease of processing and ease of assembly. These programs are held at the Toshiba Training Center.



Toshiba Training Center (Kohoku-ku, Yokohama)

Specialty education—Internal auditor certification education

This program is for fostering and certifying auditors who will conduct internal audits of Toshiba Group companies. Eligible personnel who are managers or have a higher position acquire basic skills

covering workplace and system auditing and technical auditing. Auditors for workplace auditing also receive on-the-job training.

ISO 14001 education

At all operations and affiliated companies that have obtained ISO 14001* certification, education to foster internal auditors is provided in addition to general education for all employees and education for specific personnel. At certain operations, e-learning has been introduced for ISO 14001 education.

Commitment from now on

Toshiba intends to continue provision of environmental education for all employees (at least once a year), and emphasize the following.

- Enhancement of the content of education (raising awareness of new laws and regulations, environmental communication, etc.)
- Enrichment of ECP education (enhancement of the content, increase of the number of participants, etc.)
- IT-based education (expansion of the scope of e-learning)

Environmental communication

Toshiba Group has been enhancing its environmental protection activities on a continuous basis. We are stepping up our environmental protection efforts, and, at the same time, disseminating environmental information through various media in order to communicate Toshiba's viewpoint and activities.

The 12th Toshiba Group Environment Technology Exhibition

The 12th Toshiba Group Environment Technology Exhibition held in March 2003 at Toshiba headquarters building was open to the general public. It attracted some 2,050 visitors, including customers, central and local government officials, journalists, academics, environmental-protection professionals at other companies, students, and employees of Toshiba Group.

Exhibits included environmentally conscious products, such as a drive system for low-pollution hybrid vehicles and other environmental devices for automobiles, examples of the application of lead-free soldering*, green procurement* support system, distributed natural energy system, PCB detoxification system, and reuse and recycling of personal computers. We received many written comments on the content and style of the exhibition themes. At right is a selection of those comments representing the range of opinions expressed.



The display on chemical substance control attracted keen interest



Junior high school students view the display on environmentally conscious products

It's important to achieve practical application of the technology for treatment of items containing PCB as soon as possible.

manufacturer, many others

This useful exhibit enabled me to understand Toshiba's plans for applying lead-free soldering and the products covered.

electronics company, solder manufacturer, many others

The green procurement support system and databases provide a good reference.

PC manufacturer

More space is needed to accommodate the large number of displays

many

Visitor's comments

Texts on panels should be made larger so that they are easier to read.

manufacturer

Explanations focusing on technology are difficult to understand. Comparisons with current models would be helpful.

government

In addition to the environmental exhibition, it would be a good idea to have seminars and presentations highlighting successes.

manufacturer

Although the explanations weren't easy to follow, they got me interested in many subjects.

junior high school student

Toshiba should cooperate with other companies to address the needs of diverse markets, accelerate development, and achieve practical applications.

construction company

I want Toshiba to continue holding this simple yet informative exhibit which is unique to Toshiba.

journalist

The exhibition clearly presented Toshiba Group's serious commitment to the environment. I hope to see more exhibitions of this kind in the future.

many

Bearing the comments of visitors in mind, we are expediting our efforts to commercialize certain systems and reconsidering the content and size of the exhibition in order to enhance accessibility and communication.

Readers' comments

Readers' comments on Toshiba Environmental Report 2002

22, male

The report communicated Toshiba's vigorous involvement in environmental issues. Toshiba has goals and is achieving results step by step. Environmental management includes a commitment to society. I hope that Toshiba will continue sound and transparent management and vigorous disclosure. The report is rich in content and informative. On the other hand, it is difficult to understand if you just quickly read through it. It would be a good idea to include an easy-to-understand summary with the report.

37, male

There isn't enough information. A third-party review is necessary. Compared with other companies and other industries, this report does not communicate whether Toshiba is vigorously involved in environmental activities. I hope Toshiba will change.

76, male

Toshiba was once found to have caused trichloroethylene pollution. I appreciate that Toshiba invested its resources in order to purify contaminated soil at the site of its former Kawasaki Complex and completed the project on schedule.

30, male

The report covers activities in wide-ranging fields, but the explanation is insufficient for some items. More charts should be included so that readers can have a clearer image of what is happening. Environmental accounting provides a good reference, as Toshiba calculates and discloses customer benefits and risk prevention benefits whose monetary value is generally thought to be difficult to calculate.

68, male

Regarding development of environmentally conscious products, information on evaluation items and weighting is not provided and the voluntary standards should be disclosed. Toshiba is focusing on zero emission and making good progress. I think Toshiba is superior to most other companies in terms of the cost effectiveness of environmental protection activities. It is good that PTRR data for each site are disclosed. The relationship between chemical substances discussed on Page 20 and environment-related substances discussed on Pages 27 and 33 is unclear and confusing. A third-party review other than by an auditing firm is necessary. Looking at the data only, Toshiba does not have the profile of a global enterprise particularly in Europe.

66, male

Toshiba is doing well in its environmental protection activities. Regarding the environmental protection system discussed on Page 5, the relationship between the Corporate Environmental Protection Council and the Environmental Protection Planning Division is unclear. Why do in-house companies and operations have no environmental protection departments?

14, female

The design is stylish. The graphs are a big help. Sometimes the sentences are too long and difficult to understand.

22, male

Because Toshiba is a major manufacturer, it should take the initiative on logistics rather than depending on transport and delivery companies. Most manufacturers don't seem to be making enough effort on the logistics front.

We welcome readers' comments. Indeed, your comments will change Toshiba Group's environmental reports.



Operations' activities—Yokohama Complex

In February 2003, Yokohama Complex invited 22 members of the local community to a presentation on environmental issues.

Based on the environmental site report, employees of Yokohama Complex explained their environmental protection activities and showed the visitors around the facilities. In the Q&A session, the visitors also commented on Yokohama Complex and Toshiba, their impressions, and so on. This meeting strengthened the relationship with people in the local community and highlighted the importance of cultivating harmonious relations with the local

community. We intend to continue promoting communication on environmental issues with people in the local community in order to enhance their confidence in Yokohama Complex.

Because Yokohama Complex occupies a site with a lot of greenery and includes some fine views of Tokyo Bay, the visitors requested us to open the site to the public in the spring when the cherry trees blossom and to open the area overlooking the bay to the public. Also, there was a request that visits to Yokohama Complex's environmental facilities be arranged for sixth graders from two local elementary schools. That

is in addition to another local elementary school where a visit to Yokohama Complex has been part of the educational program since 2000. Questions mainly concerned the environmental issues that are attracting the most interest in society, such as groundwater, waste and recycling of home appliances. The visitors toured the workplace where nuclear power systems are designed. One visitor commented "I used to associate nuclear power with danger, but now I feel reassured. It's important to inform people about the safety and environmental friendliness of nuclear power facilities."

■ Environmental accounting as an environmental management tool



Representatives of Yokohama Complex greet the visitors



Visiting a workplace (1)



Visiting a workplace (2)



Explanatory session



A visitor asks a question



An employee of Yokohama Complex answers the question

To enhance communication

We are convinced of the importance of excellent communication with stakeholders, including customers, shareholders, investors and local residents. Excellent communication leads to new knowledge and new insights. Toshiba Group Environmental Exhibition and Yokohama Complex's activities are examples of such communication introduced in this report. These and other events provided opportunities for direct

communication with stakeholders. We received many useful comments and suggestions as well as encouragement. From now on, we intend to expand the scope of activities of this type.

Our aim is to ensure that Toshiba Environmental Report addresses the needs of readers based on the "voice of customer." The selection of readers' comments featured on Page 40 includes some rather trenchant ones. Readers'

comments vary greatly and are often diametrically opposed, indicating that it is impossible to satisfy every preference. However, we tried to reflect the spectrum of readers' comments as much as possible. We are stepping up our efforts to achieve more vigorous disclosure and enhancement of communication.

Working with communities for a better environment

Inspired by the group slogan—"Committed to People, Committed to the Future. Toshiba"—Toshiba Group is actively contributing as a good corporate citizen to the accomplishment of society's goals and is constantly seeking new approaches that help realize the goals of the global community, including ways to improve the global environment. Toshiba's business operations are endeavoring to ensure that their activities are attuned to the needs of communities in accordance with their standards of business conduct.

Activities of Toshiba Science Museum, Toshiba foundations and operations

Toshiba Science Museum, opened in 1961, welcomes over 120,000 visitors a year. In addition to introduction of Toshiba's cutting-edge technologies, Toshiba Science Museum is working to enhance children's interest in science through exhibitions and experiments. It also holds courses on PC use for beginners. Toshiba International Foundation, Toshiba America Foundation and Toshiba Thai Foundation provide support in the cultural and educational spheres.

Toshiba's operations in Japan are working in their own right to meet the needs of local communities, for example, by organizing events in cooperation with local organizations.

Providing information on voluntary activities and supporting employees' activities

Toshiba supports employees' voluntary activities. An intranet site devoted to voluntary activities provides information on recruitment of volunteers throughout Japan, links to web sites of voluntary organizations, and introduces the various activities Toshiba engages in so as to contribute to society. Toshiba also provides financial support to voluntary non-profit organizations in which Toshiba employees are involved. One of them is KIDS, a group working with handicapped children.

Standards of Conduct concerning Relations with Communities

●Policy

Toshiba is committed to fulfilling its responsibilities as a member of the community through cooperation with local communities and by maintaining good relations with communities.

●Standards of Conduct

Officers and employees are required to act in accordance with the following.

- (1) Respect the culture and customs of the communities in which Toshiba does business.
- (2) Participate in local organizations and cooperate with community activities vigorously in order to contribute to solving the problems of communities and to achieve benefits for communities.
- (3) Expand opportunities for contact with local communities in order to promote and secure the community's understanding of Toshiba's management policies and business activities.



Employees of Toshiba Group companies in China and their families, some 700 people in all, planted 15,000 saplings on a 13-hectare site

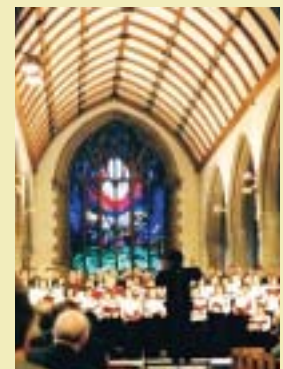
Toshiba Ride On Jazz Orchestra, a band formed by Toshiba employees, held a Christmas charity concert at Toshiba headquarters in support of Afghan refugees in cooperation with Peace Winds Japan, an NGO



Toshiba Science Museum is a fun place for every generation, from children to the elderly.



To open children's eyes to the tremendous possibilities of science, Toshiba supports various educational events in the United States and China highlighting the connections between science, technology and the Internet



Toshiba Philharmonic Orchestra, an orchestra consisting of Toshiba employees and members of their families



Glossary

Note: Numbers in circles indicates the page numbers concerning the item.

Corporate Social Responsibility (CSR) 3 29 45	This refers to a company's responsibility to undertake its activities while conforming to social norms and regulations, and not just pursuing profit. In the context of an approach that places paramount importance on industrial development, social responsibility, which has been put on the back burner, is being widely and actively discussed not only in Japan but in Europe and North America as well. Making CSR one of the ISO specifications is also under consideration. From our environmental conservation programs, through activities that contribute to society and activities related to Occupational Safety and Health, Toshiba is committed to a CSR conscious approach to its operations.
Eco-effectiveness 11	We define this as the ratio between net sales and the total amount of environmental impact. Barring any major changes in our organizational structure, this is effective as an index to monitor the effects of our down-to-earth environmental measures.
Eco-efficiency 11	This is an index that shows how much contribution is made toward protection of the environment by eco-conservation activities. At Toshiba, we define this as the amount of environmental impact reduced per unit cost. The more environmental impact can be reduced at a low cost to the environment, the greater the eco-efficiency becomes.
e-learning 39	Electronic learning refers to network-based training and education and the systems necessary for it. As well as increasing convenience by allowing courses to be taken at any time, E-learning also enables a reduction of the environmental impact that comes from the movement of people necessary to group-assembled education and by reducing their print output.
Extended Producer Responsibility (EPR) 45	This widens the scope of producers' responsibility to not only include the manufacture, use and distribution of products but also their disposal and recycling. This can be found in the Basic Law for Establishing the Recycling-based Society, which came into force in June 2000.
Green Procurement 12 29 40	This refers to the procurement of materials, raw materials, parts and products that have a low impact on the environment. We promote green procurement by environmentally conscious products, based on our commitment to handing over our planet's irreplaceable environment in a sound and healthy condition to the next generation.
Green Purchase Law 23	This is the common name for the Law Concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State and Other Entities. The objective of this law is the establishment of a sustainable society through the purchase and procurement of products that have a low impact on the environment (such as goods that show the eco mark) by national, prefectural and local public bodies, enterprises, citizens and manufacturers.
ISO 14001 5 13 15 35 39	These are specifications regarding the Environmental Management System (EMS) that has been laid down by the International Organization for Standardization (ISO). They are used to certify organizations that have taken the environment into consideration by establishing systems that continually reduce environmental impacts.
Lead-free Soldering 12 22 25 40	This refers to solder that does not contain lead. The solder that has been used until now in printed circuit board mounting contains lead, a toxic substance, and can pose a danger if leaked from discarded products. In order to develop environmentally conscious products, we are implementing a voluntary plan with the aim of using lead-free solder in all our products by the end 2003.
Lifecycle Assessment (LCA) 22 34 39	This is a method to quantitatively assess the environmental impact of a product from the procurement of the raw materials through the production, distribution, use, disposal and recycling of that product, these being the stages which constitute the product's lifecycle. We have developed Easy-LCA software, which is equipped with a database of environmental impact data based on inter-industrial analysis methodology, and are using it in Toshiba. This software can be purchased from Toshiba Engineering Corp.
Lifecycle Planning (LCP) 22	This is a method developed by Toshiba to facilitate formulation of a concept for an environmentally conscious product at the planning stage that satisfies the quality and cost requirements while at the same time achieving effective reduction in environmental impacts throughout the lifecycle. We have developed LCPlanner lifecycle planning software and are using it in Toshiba. This software can be purchased from Toshiba IT-Solutions Corp.
Material Flow Cost Accounting 11	This is a new method of environmental management accounting that works toward the simultaneous realization of companies'profit-making activities and environmental management through the enhancement of resource productivity. It measures the flow and stock of "materials" consisting of raw materials and parts in the production process both in terms of physical quantities and monetary values and classifies "costs" into material cost, systems cost, and distribution and waste processing cost. Since February 2003 we have been using material flow cost accounting on a trial basis for selected products.
Modal Shift 14	This refers to the proactive employment of shipping methods which are efficient in ensuring that the amount of goods transported per worker is large while the impact on the environment resulting from each amount transported is small. We are promoting a modal shift from truck shipping to large-scale goods shipping by train and by sea.
MSDS 18	MSDS stands for Material Safety Data Sheet. This contains descriptions of products that contain specified materials, methods for handling them, information regarding any harmful properties they may have and data regarding the amounts present of specified materials in a certain product. Companies and organizations which handle any of the materials specified on the MSDS are obliged to attach the list when providing any other organization or company with such products.
Pollutant Release and Transfer Register (PRTR) 9 18 34 45	This register allows us to measure levels of reduction in the environmental risk that chemical substances and environmental pollutants pose by requiring companies to report to the government how much waste is discharged on-site and how much waste is transferred off-site. This is stipulated in the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (The Pollutant Release and Transfer Register Law).
Stakeholders 1	By "stakeholder" we do not only refer to company employees, consumers and shareholders, but also to government and other public bodies, research institutes, financial institutions and suppliers, and understand the term to encompass society from the local to the international level.
Ubiquitous 1	The word "ubiquitous" has seen a lot of usage lately in the two conceptual terms "ubiquitous computing" and "ubiquitous network." Ubiquitous computing refers to an environment that consists of a diverse range of computers in a variety of locations connected into one network. Ubiquitous network refers to an environment wherein mobile IT devices and household electrical devices are connected to a network and can be used from any location via that network.
Zero Emission of Waste 10 12 20	We define this as reducing the amount of landfill disposal to less than 1% after all by-products of business activities and any other products generated (total quantity of waste discharged) have been dealt with by a variety of other methods. To this end, we have been working on activities aimed at achieving the above figure in terms of the combined outputs of all 18 manufacturing sites throughout the country by the end of 2003, and have in fact, with a figure of 0.7% at the end of 2002, already surpassed our goal.
01 Action Plan 1 32	In August 2001 Toshiba launched the 01 Action Plan to position itself as a robust, complex electrical and electronics company capable of achieving continuing growth despite the vicissitudes of the business environment. The 01 Action Plan accelerates restructuring by sharpening competitiveness, streamlining management, and stepping up corporate initiatives.

●Third-party review of environmental accounting

Toshiba has ensured the reliability and transparency of Toshiba Environmental Report 2003 by having the environmental accounting reviewed by an institute,

Independent Review Report on Environmental Accounts
indicated in the "2003 Toshiba Group Environmental Report"

June 16, 2003

Mr. Tadashi Okamura
President and Chief Executive Officer
Toshiba Corporation

1. Purpose and Scope of our Review

We have reviewed the "Environmental Accounts" for fiscal year 2002 indicated in the "2003 Toshiba Group Environmental Report" (the "Report") of Toshiba Limited (the "Company") and its group companies, which was published by the Company who is responsible for its contents. The review consisted of performing certain procedures as described below, in relation to the collection, compilation and calculation of the information included in the Report.

Our work does not constitute an audit or examination. We therefore do not express an opinion on the "Environmental Accounts".

2. Procedures Performed

We have performed the following review procedures agreed upon with the Company.

- (1) We reviewed the procedures performed by the Company and the methods of accounting that were followed in the preparation of the "Environmental Accounts" information.
- (2) We compared the "Environmental Accounts" information presented in the Report with the respective supporting documents and verified the accuracy of the calculations on a sample basis.
- (3) We made inquiries to the individuals that are responsible for the Company's and group company's manufacturing sites, which were selected on a sample basis, and conducted on-site inspections of these sites and reviewed the decision-making process at each location.

3. Results of the Procedures Performed

As a result of the procedures which we performed:

- (1) "Environmental Accounts" of each site that was selected for inspection were identified and aggregated in accordance with the Company's policy.
- (2) We found no figures that were inconsistent with supporting evidence obtained in the process of inspection at each site and are not aware of any material modifications to the information.
- (3) All information prepared by each site was summarized accurately in the corporate aggregation and disclosed properly.

Yasuo Kurihara
Representative Director
Shin Nihon Environmental Management
and Quality Research Institute

Good points

- Environmental accounting is on a consolidated basis covering the entire Group including overseas operations. Operations are vigorously involved in environmental accounting.
- Operations are working to aggregate data more effectively and accurately by taking the characteristics of the types and formats of their businesses into account.
- Toshiba has devised new indices for calculation of benefits from various viewpoints. In particular, by calculating the monetary value of the combined environmental impacts, Toshiba is attempting to clarify negative externalities, so as to ensure that decision-making on environmental counter-measures is informed by environmental accounting, and contributes to the reduction of environmental impacts on society.

Issues to be addressed

- Although the scope of aggregation of environmental accounting is specified in Toshiba's environmental accounting manual, the procedures provided in the manual are not strictly adhered to. Appropriate application of the procedures is necessary.
- The current Toshiba standards allow operations to exercise their discretion in certain cases (such as handling of R&D expenditure), partly in view of the diversity of Toshiba Group's businesses. The environmental accounting manual for each in-house company should be improved on a continuous basis, taking the characteristics of the types and formats of its businesses into account.
- The system for data aggregation and approval should be improved so that consistency with the rules for environmental management systems is achieved, thereby improving efficiency and effectiveness. Environmental accounting should be covered by internal audit of environmental management systems so as to achieve continuous improvement.
- Ways to improve the current environmental accounting should be identified in order to achieve harmony between external and internal functions of environmental accounting, and to promote operations' involvement in new efforts.

Operations covered by the verification

●Toshiba Corp.

- Fukaya Operations
- Fuchu Complex
- Keihin Product Operations
- Yokohama Complex
- Aichi Operations
- Nasu Operations and Nasu Operations-Electron Tubes
- Microelectronics Center
- Corporate Manufacturing Engineering Center
- Yokkaichi Operations
- Osaka Operations
- Himeji Operations
- Oita Operations

●Subsidiaries

- Toshiba Lighting & Technology Corp.
- Toshiba Carrier Corp.

※ The above operations were selected based on comprehensive judgment taking the amount of environmental impact, amount of environmental protection costs and business characteristics into account.

※ The above operations accounted for 54.1% (16 billion yen) of total environmental protection costs (29.6 billion yen) and accounted for 36.2% (48.3 billion yen) of total environmental impacts (133.4 billion yen).



Yasuo Kurihara
President

Shin Nihon Environmental
Management and Quality
Research Institute

●Third-party review of Toshiba Environmental Report 2003

which is a unit of a leading auditing firm, and the entire report reviewed by a specialist in the field of environmental reporting by companies.

As suggested by the explanation below the illustration of the Russian flying squirrel, the contents of Toshiba Environmental Report 2003 reflect the results of the work of numerous environmentally conscious people engaged in environmental protection.

Toshiba's watchwords for environmental protection activities—"manufacturing," "usage," and "recycling"—are in accordance with the concept of expanded producer responsibility*. Toshiba is active in risk communication. Disclosure of PRTR* data for individual sites started in the previous year and the trend of the rate of compliance with the guidelines for structures is disclosed in the current issue in connection with the prevention of pollution of soil and groundwater.

Data on social and financial performance is also included in the current issue. In particular, the current issue includes an explanation of Toshiba Standards of Conduct, CSR* standards that are applied to Toshiba's global operations, and also describes the compliance system. This information indicates that Toshiba is a frontrunner with regard to CSR.

Toshiba has been conducting environmental accounting on a continuous basis and applying unique environmental management indices. The reliability of the environmental accounting was enhanced by a third party review conducted by an institute, which is a unit of an auditing firm. Analysis of accounting data is included from the current year, indicating Toshiba's intention to utilize environmental accounting as a tool for environmental management.

However, in order to make it more meaningful for a third party to use this report as a tool for evaluating Toshiba's environmental management, Toshiba should take action to improve the following.

●A clear message and vision should be presented concerning measures tackling environmental issues and CSR as an integral element of the Company's strategy.

●Environmental performance data, such as the amount of CO₂ emitted, waste countermeasures, the amount of water used, control of chemical substances, control of soil contamination, etc. are generally improving. However, scope of data and definitions vary from page to page, and, in some cases, changes in the figures or the results are not explained, preventing evaluation and analysis by readers.

●For example, in the section on Toshiba's environmental impact, it is stated that the amount of CO₂ emitted in fiscal 2002 is 1.33 million tons, whereas in the section on prevention of global warming, the figure given is 772,000 tons. This is because the larger figure is for Toshiba Corp. and its 66 group companies, but the smaller one is for the factories and R&D facilities of Toshiba Corp. Such non-uniform presentation can be confusing. Also, regarding the control of chemical substances, the difference between the substances covered by the voluntary plan and those subject to PRTR is difficult to understand. Furthermore, regarding the data on reduction of the substances covered by the voluntary plan, the values forecasted for fiscal 2003 to 2005 are larger than the results for fiscal 2002, but no explanation is given.

●Although disclosure of PRTR data on individual sites is welcome, it is difficult for readers to understand the factors accounting for changes in results. Toshiba's analysis and its policy regarding risks should be included.

●Regarding countermeasures for waste, it is stated that Toshiba achieved zero emission and aims to achieve qualitative improvement of recycling, namely by shifting from thermal recycling to material recycling. Information on the present situation regarding recycling should be included, such as the ratio of thermal recycling and that of material recycling.

●Regarding environmentally conscious products, the current report states that the ratio of products in conformity with the voluntary standards was 52% for fiscal 2002. The report for the previous year states that it was 37% for fiscal 2001.



Mariko Kawaguchi

Panel Member of Global Reporting Initiative (GRI) Forum Japan
Chief Researcher, Daiwa Institute of Research

Mariko Kawaguchi received a master's degree in public economics and environmental economics from Hitotsubashi University. After joining Daiwa Securities, she was transferred to Daiwa Institute of Research. Following an assignment in the Corporate Research Department, Ms Kawaguchi is currently a chief researcher in the Management Consulting Department. Her main research themes include environmental management, corporate environmental evaluation, environmental accounting, environmental reports, socially responsible investment, and corporate social responsibility. She was a member of the environmental performance committee of the Ministry of Environment (2000) and a member of the "Wanokurashi Conference" eco-life committee (2002). Ms Kawaguchi is a member of the panel of GRI Forum Japan.

However, because the current report only states the result for fiscal 2002, readers are unable to know that the ratio increased.

●Several environmentally conscious products are introduced as topics. Although Toshiba's efforts to develop various technologies are described, their overall effect on reducing environmental impacts is not mentioned. I assume that the customer benefit (reduction of 100,595 tons-CO₂) stated in the section on environmental accounting corresponds to the effect on reducing environmental impacts of products. If such accounting data were highlighted also in the section on environmentally conscious products, it would provide a reasonable basis for development of environmentally conscious products from a management perspective, and it would make it easy to clarify the extent of the progress made regarding reduction of environmental impacts.

Implementation of the improvements suggested above would make the Toshiba Environmental Report easier to understand and provide linkage between the various activities from a management perspective. It is to be hoped that this review will be taken into consideration in preparing outstanding reports in the years ahead.

TOSHIBA GROUP'S PRTR DATA FOR INDIVIDUAL BUSINESS PREMISES

(RESULTS FOR FISCAL 2002) Unit: t /year

Nasu Operations and Nasu Operations-Electron Tubes, Toshiba Corp.

1385, Shimoishigami, Otawara, Tochigi Pref. 324-8550

Main products:
Medical equipment, electron tubes

Primary measure:
Change of materials

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
227	Toluene	108-88-3	0.15	0.15	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
230	Lead and its compounds	—	2.26	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06	1.28	0.00	0.91
232	Nickel compounds	—	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.04	0.00
283	Hydrogen fluoride and its water-soluble salts	—	0.10	0.00	0.01	0.00	0.00	0.01	0.06	0.00	0.06	0.00	0.03	0.00

Fukaya Operations, Toshiba Corp.

1-9-2, Hatawa-cho, Fukaya, Saitama Pref. 366-8510

LCDs, color display tubes

Reduction of waste
water concentrations

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
1	Zinc water-soluble compounds	—	0.20	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.07	0.05	0.00
63	Xylene	1330-20-7	0.31	0.29	0.00	0.00	0.00	0.29	0.02	0.00	0.02	0.00	0.00	0.00
64	Silver and its water-soluble compounds	—	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00
227	Toluene	108-88-3	0.30	0.29	0.00	0.00	0.00	0.29	0.01	0.00	0.01	0.00	0.00	0.00
230	Lead and its compounds	—	6.66	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05	6.00	0.00	0.61
243	Barium and its water-soluble compounds	—	0.34	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.33	0.00	0.00
283	Hydrogen fluoride and its water-soluble salts	—	0.42	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.40	0.00

Fuchu Complex, Toshiba Corp.

1, Toshiba-cho, Fuchu, Tokyo 183-8511

Industrial systems,
traffic systems

Change of processes
and materials

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
40	Ethylbenzene	100-41-4	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
63	Xylene	1330-20-7	15.40	7.46	0.00	0.00	0.00	7.46	2.69	0.00	2.69	5.25	0.00	0.00
108	Inorganic cyanide compounds (except complex salts and cyanates)	—	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00
177	Styrene	100-42-5	2.28	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00	2.25	0.00	0.00
227	Toluene	108-88-3	21.68	13.69	0.00	0.00	0.00	13.69	0.29	0.00	0.29	7.70	0.00	0.00
299	Benzene	71-43-2	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00

Hino Operations, Toshiba Corp.

3-1-1, Asahigaoka, Hino, Tokyo 191-8555

Cellular telephones,
PHS terminals

Change of materials

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
43	Ethylene glycol	107-21-1	0.40	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.38	0.00	0.00
227	Toluene	108-88-3	0.10	0.06	0.00	0.00	0.00	0.06	0.02	0.00	0.02	0.02	0.00	0.00
230	Lead and its compounds	—	1.39	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.32	1.07	0.00	0.00

Ome Operations, Toshiba Corp.

2-9, Suehiro-cho, Ome, Tokyo 198-8710

Personal computers,
servers

Change of materials

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
230	Lead and its compounds	—	1.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.71

Yanagicho Complex, Toshiba Corp.

70, Yanagi-cho, Saiwai-ku, Kawasaki, Kanagawa Pref. 212-8501

Automatic ticket inspection equipment,
letter sorting machines

Use of substitutes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
40	Ethylbenzene	100-41-4	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00
63	Xylene	1330-20-7	1.45	0.20	0.00	0.00	0.00	0.20	0.00	0.00	0.00	1.25	0.00	0.00
227	Toluene	108-88-3	2.16	0.15	0.00	0.00	0.00	0.15	0.00	0.00	0.00	2.01	0.00	0.00
230	Lead and its compounds	—	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00
299	Benzene	71-43-2	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00
311	Manganese and its compounds	—	0.41	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.40	0.01	0.00	0.00

Komukai Operations, Toshiba Corp.

1, Komukai-Toshiba-cho, Saiwai-ku, Kawasaki, Kanagawa Pref. 212-8581

Wave application systems,
broadcasting system

Improvement of
coating facilities

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
40	Ethylbenzene	100-41-4	0.28	0.23	0.00	0.00	0.00	0.23	0.06	0.00	0.06	0.00	0.00	0.00
63	Xylene	1330-20-7	0.39	0.32	0.00	0.00	0.00	0.32	0.08	0.00	0.08	0.00	0.00	0.00
227	Toluene	108-88-3	0.70	0.35	0.00	0.00	0.00	0.35	0.35	0.00	0.35	0.00	0.00	0.00
230	Lead and its compounds	—	0.50	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.34	0.00	0.08
283	Hydrogen fluoride and its water-soluble salts	—	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.00

Corporate Research & Development Center, Toshiba Corp.

1, Komukai-Toshiba-cho, Saiwai-ku, Kawasaki, Kanagawa Pref. 212-8582

R&D

Reduction of consumption

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
283	Hydrogen fluoride and its water-soluble salts	—	0.54	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.54	0.00	0.00	0.00

Microelectronics Center, Toshiba Corp.

1, Komukai-Toshiba-cho, Saiwai-ku, Kawasaki, Kanagawa Pref. 212-8583

Discrete semiconductor devices

Change of processes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
16	2-aminoethanol	141-43-5	0.92	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.92	0.00	0.00	0.00
63	Xylene	1330-20-7	0.38	0.02	0.00	0.00	0.00	0.02	0.36	0.00	0.36	0.00	0.00	0.00
224	1,3,5-trimethylbenzene	108-67-8	0.33	0.02	0.00	0.00	0.00	0.02	0.31	0.00	0.31	0.00	0.00	0.00
260	pyrocatechol	120-80-9	0.15	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.15	0.00	0.00	0.00
283	Hydrogen fluoride and its water-soluble salts	—	7.92	0.06	0.00	0.00	0.00	0.06	0.00	0.21	0.21	0.00	7.65	0.00

※ Toshiba Group designates benzene as a substance whose use at manufacturing processes is prohibited. However, according to the PRTR Law, benzene contained in gasoline at business premises that have gasoline tanks is within the scope of reporting.

Data on all business premises of Toshiba Corp. and data on major business premises of affiliated companies are shown. The PRTR Law mandates reporting of substances whose consumption is 5 t or more per year (marked with in the table), and of specified Class I Designated Chemical Substances whose amount handled is 0.5 t or more per year (highlighted in in the table). Toshiba Group's survey requires operations to report any substances whose amount handled is 0.01 t or more per year. Amounts handled, consumed and recycled are also shown. As well as the names of individual business premises and addresses, main products of the premises and their primary measures for reduction of release of chemical substances are described.

Keihin Product Operations, Toshiba Corp.

2-4, Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa Pref. 230-0045

Main products: Power equipment,
large motors

Primary measure:
Change of processes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
44	Ethylene glycol monoethyl ether	110-80-5	0.17	0.05	0.00	0.00	0.00	0.05	0.12	0.00	0.12	0.00	0.00	0.00
63	Xylene	1330-20-7	1.82	1.34	0.00	0.00	0.00	1.34	0.48	0.00	0.48	0.00	0.00	0.00
227	Toluene	108-88-3	37.00	12.27	0.00	0.00	0.00	12.27	24.73	0.00	24.73	0.00	0.00	0.00

Corporate Manufacturing Engineering Center, Toshiba Corp.

33, Shin-isogo-cho, Isogo-ku, Yokohama, Kanagawa Pref. 235-0017

R&D of manufacturing technologies

Reduction of consumption

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
43	Ethylene glycol	107-21-1	0.21	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.21	0.00	0.00	0.00

Yokohama Complex, Toshiba Corp.

8, Shin-sugita-cho, Isogo-ku, Yokohama, Kanagawa Pref. 235-8522

Metal materials,
ceramic materials

Improvement of processes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
63	Xylene	1330-20-7	18.37	0.30	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	18.08
68	Chromium and chromium (III) compounds	—	207.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	148.69	0.00	58.92
100	Cobalt and its compounds	—	48.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.41	0.00	9.75
207	Water-soluble copper salts (excluding complex salts)	—	1.30	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.28	1.00	0.02	0.00
227	Toluene	108-88-3	3.48	0.04	0.00	0.00	0.00	0.04	0.08	0.00	0.08	0.00	3.37	0.00
231	Nickel	7440-02-0	1105.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	762.89	0.00	342.33
232	Nickel compounds	—	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00
283	Hydrogen fluoride and its water-soluble salts	—	19.76	0.02	1.46	0.00	0.00	1.48	18.28	0.00	18.28	0.00	0.00	0.00
311	Manganese and its compounds	—	39.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.73	0.00	11.73
346	Molybdenum and its compounds	—	184.13	0.00	0.11	0.00	0.00	0.11	0.00	0.00	0.00	160.42	0.00	23.61

Chemical Materials & Components Dept., Yokohama Operations-Materials & Components, Toshiba Corp.

3583-5, Kawashiri, Yoshida-cho, Haibara-gun, Shizuoka Pref. 421-0302

Fluorescent materials

Improvement of processes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
100	Cobalt and its compounds	—	356.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	354.51	0.00	1.78
231	Nickel	7440-02-0	19.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.03	0.00	0.19
243	Barium and its water-soluble compounds	—	20.21	0.04	0.00	0.00	0.00	0.04	0.00	0.00	0.00	19.06	0.00	1.11
304	Boron and its compounds	—	3.72	0.00	0.03	0.00	0.00	0.03	0.14	0.00	0.14	3.55	0.00	0.00

Aichi Operations, Toshiba Corp.

991, Anada-cho, Seto, Aichi Pref. 489-0003

Washing machines

Use of substitutes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
63	Xylene	1330-20-7	0.68	0.59	0.00	0.00	0.00	0.59	0.09	0.00	0.09	0.00	0.00	0.00
227	Toluene	108-88-3	1.75	1.75	0.00	0.00	0.00	1.75	0.00	0.00	0.00	0.00	0.00	0.00
230	Lead and its compounds	—	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00

Yokkaichi Operations, Toshiba Corp.

800, Yamanoishiki-cho, Yokkaichi, Mie Pref. 512-8550

ICs

Reduction of waste
water concentrations

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
16	2-aminoethanol	141-43-5	110.29	0.00	0.00	0.00	0.00	0.00	97.40	0.00	97.40	0.00	12.90	0.00
25	Antimony and its compounds	—	0.13	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.11	0.00	0.00
43	Ethylene glycol	107-21-1	2.75	0.00	0.00	0.00	0.00	0.00	2.75	0.00	2.75	0.00	0.00	0.00
63	Xylene	1330-20-7	82.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.69	0.00
230	Lead and its compounds	—	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.02
260	Pyrocatechol	120-80-9	22.06	0.00	0.00	0.00	0.00	0.00	19.48	0.00	19.48	0.00	2.58	0.00
283	Hydrogen fluoride and its water-soluble salts	—	269.80	0.31	9.08	0.00	0.00	9.39	0.00	0.00	0.00	0.00	260.41	0.00
304	Boron and its compounds	—	0.17	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.17	0.00	0.00	0.00
346	Molybdenum and its compounds	—	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00

Osaka Operations, Toshiba Corp.

1-6, Ota Toshiba-cho, Ibaraki, Osaka 567-0013

Refrigerators

Use of substitutes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
25	Antimony and its compounds	—	2.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00
63	Xylene	1330-20-7	0.26	0.26	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00
85	Chlorodifluoromethane; HCFC-22	75-45-6	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
132	1,1-dichloro-1-fluoroethane; HCFC-141b	1717-00-6	23.95	0.24	0.00	0.00	0.00	0.24	0.10	0.00	0.10	23.61	0.00	0.00
227	Toluene	108-88-3	0.45	0.24	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.21
230	Lead and its compounds	—	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.84	0.00	0.53
311	Manganese and its compounds	—	0.14	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.00	0.00	0.00
338	Methyl-1,3-phenylene diisocyanate; m-tolylene diisocyanate	26471-62-5	717.27	0.00	0.00	0.00	0.00	0.00	3.31	0.00	3.31	713.96	0.00	0.00

Himeji Operations, Toshiba Corp.

50, Kamiyobe, Yobe-ku, Himeji, Hyogo Pref. 671-1295

Precision electronic parts,
LCDs

Use of substitutes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
63	Xylene	1330-20-7	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00
68	Chromium and chromium (III) compounds	—	4.05	0.00	0.01	0.00	0.00	0.01	0.03	0.00	0.03	4.01	0.00	0.00
227	Toluene	108-88-3	1.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	0.00	0.00
231	Nickel	7440-02-0	4.40	0.00	0.03	0.00	0.00	0.03	0.01	0.00	0.01	4.36	0.00	0.00
242	Nonylphenol	25154-52-3	0.12	0.00	0.12	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00
283	Hydrogen fluoride and its water-soluble salts	—	0.53	0.00	0.36	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.16	0.00
309	Poly (oxyethylene) nonylphenyl ether	9016-45-9	0.36	0.00	0.32	0.00	0.00	0.32	0.04	0.00	0.04	0.00	0.00	0.00
311	Manganese and its compounds	—	0.45	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.44	0.00	0.00

Taishi Branch Works, Himeji Operations, Toshiba Corp.
300 Ikuraga, Taishi-cho, Ibo-gun, Hyogo Pref. 671-1561

Main products: Color picture tubes,
discrete semiconductor devices

Primary measure: Reduction of waste
water concentrations

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
1	Zinc water-soluble compounds	—	0.17	0.00	0.09	0.00	0.00	0.09	0.07	0.00	0.07	0.00	0.00	0.00
16	2-aminoethanol	141-43-5	0.21	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.21	0.00	0.00	0.00
25	Antimony and its compounds	—	668.95	0.00	0.00	0.00	0.00	0.00	5.09	0.00	5.09	654.44	0.00	9.42
30	Polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (liquid); bisphenol A type epoxy resin (liquid)	25068-38-6	1.15	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13	1.01	0.00	0.00
40	Ethylbenzene	100-41-4	1.76	0.04	0.00	0.00	0.00	0.04	1.71	0.00	1.71	0.00	0.00	0.00
43	Ethylene glycol	107-21-1	0.32	0.00	0.17	0.00	0.00	0.17	0.11	0.00	0.11	0.00	0.04	0.00
47	Ethylenediaminetetraacetic acid	60-00-4	0.22	0.00	0.22	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00
63	Xylene	1330-20-7	28.57	10.34	0.00	0.00	0.00	10.34	18.22	0.00	18.22	0.00	0.00	0.00
68	Chromium and chromium (III) compounds	—	0.96	0.00	0.15	0.00	0.00	0.15	0.79	0.00	0.79	0.02	0.00	0.00
69	Chromium (VI) compounds	—	7.05	0.00	0.07	0.00	0.00	0.07	0.11	0.00	0.11	0.01	6.86	0.00
100	Cobalt and its compounds	—	4.56	0.00	0.20	0.00	0.00	0.20	4.27	0.00	4.27	0.09	0.00	0.00
202	Tetrahydromethylphthalic anhydride	11070-44-3	4.25	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.50	3.75	0.00	0.00
224	1,3,5-trimethylbenzene	108-67-8	4.26	1.28	0.00	0.00	0.00	1.28	2.98	0.00	2.98	0.00	0.00	0.00
227	Toluene	108-88-3	75.11	62.25	0.00	0.00	0.00	62.25	12.86	0.00	12.86	0.00	0.00	0.00
230	Lead and its compounds	—	4332.01	0.00	0.07	0.00	0.00	0.07	6.82	0.00	6.82	4275.50	0.00	49.63
231	Nickel	7440-02-0	1070.93	0.00	1.65	0.00	0.00	1.65	0.00	0.00	0.00	611.88	0.00	457.40
232	Nickel compounds	—	0.47	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.40	0.07	0.00	0.00
243	Barium and its water-soluble compounds	—	2481.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2442.10	0.00	39.70
254	Hydroquinone	123-31-9	0.10	0.00	0.10	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
283	Hydrogen fluoride and its water-soluble salts	—	100.41	0.18	4.55	0.00	0.00	4.73	0.00	0.00	0.00	0.00	95.67	0.00
304	Boron and its compounds	—	6.02	0.01	0.11	0.00	0.00	0.11	0.03	0.00	0.03	5.63	0.00	0.25
346	Molybdenum and its compounds	—	0.25	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.11	0.14	0.00	0.00

Kitakyushu Operations, Toshiba Corp.

1-10-1, Shimoitozu, Kokurakita-ku, Kitakyushu, Fukuoka Pref. 803-8686

LSIs,
optical semiconductor devices

Change of processes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
16	2-aminoethanol	141-43-5	1.81	0.00	0.00	0.00	0.00	0.00	1.81	0.00	1.81	0.00	0.00	0.00
24	n-alkylbenzenesulfonic acid and its salts (alkyl C=10-14)	—	8.90	0.00	0.00	0.00	0.00	0.00	8.90	0.00	8.90	0.00	0.00	0.00
43	Ethylene glycol	107-21-1	0.46	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.46	0.00	0.00	0.00
63	Xylene	1330-20-7	7.49	6.74	0.00	0.00	0.00	6.74	0.75	0.00	0.75	0.00	0.00	0.00
252	Arsenic and its inorganic compounds	—	0.19	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.19	0.00	0.00	0.00
258	Piperazine	110-85-0	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00
266	Phenol	108-95-2	2.44	0.00	0.00	0.00	0.00	0.00	2.44	0.00	2.44	0.00	0.00	0.00
283	Hydrogen fluoride and its water-soluble salts	—	64.96	0.65	0.00	0.00	0.00	0.65	0.26	5.24	5.49	0.00	58.82	0.00
304	Boron and its compounds	—	0.37	0.00	0.00	0.00	0.00	0.00	0.24	0.02	0.26	0.00	0.11	0.00

Oita Operations, Toshiba Corp.

3500, Oaza Matsuoaka, Oita, Oita Pref. 870-0197

System LSIs

Change of process materials

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
16	2-aminoethanol	141-43-5	60.57	0.00	0.00	0.00	0.00	0.00	58.75	0.00	58.75	0.00	1.82	0.00
43	Ethylene glycol	107-21-1	1.65	0.00	0.00	0.00	0.00	0.00	1.65	0.00	1.65	0.00	0.00	0.00
47	Ethylenediaminetetraacetic acid	60-00-4	0.43	0.00	0.43	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00
95	Chloroform	67-66-3	0.52	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.52	0.00	0.00	0.00
207	Water-soluble copper salts (excluding complex salts)	—	0.27	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.27	0.00	0.00	0.00
258	Piperazine	110-85-0	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00
260	Pyrocatechol	120-80-9	5.01	0.00	0.00	0.00	0.00	0.00	4.86	0.00	4.86	0.00	0.15	0.00
283	Hydrogen fluoride and its water-soluble salts	—	163.22	0.15	11.89	0.00	0.00	12.04	11.18	0.00	11.18	0.00	140.00	0.00
304	Boron and its compounds	—	0.44	0.01	0.06	0.00	0.00	0.07	0.37	0.00	0.37	0.00	0.00	0.00
309	Poly (oxyethylene) nonylphenyl ether	9016-45-9	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00

Fuchu Operations, Toshiba Elevator and Building Systems Corp.

1, Toshiba-cho, Fuchu, Tokyo 183-8511

Elevators

Change of process materials

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
63	Xylene	1330-20-7	9.99	9.99	0.00	0.00	0.00	9.99	0.00	0.00	0.00	0.00	0.00	0.00
227	Toluene	108-88-3	10.80	10.80	0.00	0.00	0.00	10.80	0.00	0.00	0.00	0.00	0.00	0.00

Yokosuka Operations, Toshiba Lighting & Technology Corp.

1-201-1 Funakoshi-cho, Yokosuka-shi, Kanagawa Pref. 237-8510

Metal materials for lighting
equipment, lighting tubes

Recovery and recycling
of materials

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
230	Lead and its compounds	—	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00
232	Nickel compounds	—	156.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	155.02	0.00	1.46
243	Barium and its water-soluble compounds	—	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00
346	Molybdenum and its compounds	—	6.33	0.00	0.00	0.00	0.00	0.00	6.33	0.00	6.33	0.00	0.00	0.00

Ohito Operations, Toshiba TEC Corp.

570 Ohito-cho, Tagata-gun, Shizuoka Pref. 410-2392

POS terminals

Use of substitutes

Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
25	Antimony and its compounds	—	3.66	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.17	3.49	0.00	0.00
64	Silver and its water-soluble compounds	—	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.12
230	Lead and its compounds	—	2.75	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.64	0.00	2.10

Fuji Operations, Toshiba Carrier Corp.

336 Tadehara, Fuji-shi, Shizuoka Pref. 416-0931

Air conditioners, compressors

Change of processes

Amount released														
Substance number specified by the law	Substance name	CAS number	Amount handled	Amount released					Amount transferred		Total amount transferred	Amount consumed	Amount removed and treated	Amount recycled
				Release to atmosphere	Release to public water systems	Release to soil	Landfill within operations	Total amount released	Transfer as waste	Transfer to sewage				
16	2-aminoethanol	141-43-5	1.85	0.00	0.07	0.00	0.00	0.07	0.00	0.00	0.00	0.00	1.78	0.00
40	Ethylbenzene	100-41-4	1.37	0.79	0.00	0.00	0.00	0.79	0.07	0.00	0.07	0.51	0.00	0.00
63	Xylene	1330-20-7	9.85	6.86	0.00	0.00	0.00	6.86	0.27	0.00	0.27	2.72	0.00	0.00
64	Silver and its water-soluble compounds	—	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00
68	Chromium and chromium (III) compounds	—	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00
85	Chlorodifluoromethane; HCFC-22	75-45-6	154.98	0.23	0.00	0.00	0.00	0.23	1.74	0.00	1.74	153.01	0.00	0.00
101	2-ethoxyethyl acetate; ethylene glycol monoethyl ether acetate	111-15-9	0.15	0.15	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
144	Dichloropentafluoropropane; HCFC-225	—	0.28	0.28	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00
224	1,3,5-trimethylbenzene	108-67-8	0.18	0.18	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00
227	Toluene	108-88-3	10.55	6.91	0.00	0.00	0.00	6.91	0.30	0.00	0.30	3.34	0.00	0.00
230	Lead and its compounds	—	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.00	0.00
231	Nickel	7440-02-0	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00
299	Benzene	71-43-2	0.34	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.31	0.00	0.00
304	Boron and its compounds	—	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00
310	Formaldehyde	50-00-0	0.31	0.31	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00
311	Mannose and its compounds	—	0.92	0.00	0.04	0.00	0.00	0.04	0.04	0.00	0.04	0.84	0.00	0.00

History of Toshiba's environmental protection activities

Promotion organizations		Measures and activities
	2002	Achievement of zero emission of waste Introduction of material flow cost accounting
Environmental Protection Planning Division	2001	Commended in the Green Awards and the Global Environmental Awards
	2000	Third Voluntary Environmental Plan Announcement of environmental accounting
Environmental Protection & Recycling Planning Center	1999	Publication of Environmental Report 1998 Termination of use of incinerators
	1998	
Toshiba received the Excellence Award in the third Ozone Layer Protection Awards	1997	New Environmental Basic Rules Start of securing ISO 14001 certification
Recycling Promoting Group	1996	Second Voluntary Environmental Plan
	1995	Revision of Environmental Basic Rules Completion of securing ISO 14001 certification
Environmental Protection Center	1994	Abolition of use of 1-1-1-trichloroethane
	1993	First Voluntary Environmental Plan Abolition of use of specific freons for cleaning New environmental audit (EASTER)
Environmental Protection & Production Group	1992	
Corporate Environmental Protection Council	1991	Product assessment, energy-saving targets
Basic Commitment of Toshiba Group and corporate slogan	1990	Environmental Guidelines for Structures, freezing the amount of industrial waste
Corporate environmental protection system Environmental Engineering Laboratory	1989	Environmental Basic Rules, ODS reduction plan, environmental audit
Environmental Protection Center	1988	

Scope of Toshiba Environmental Report 2003

This report includes activities of Toshiba Corp. and its subsidiaries and affiliates listed below:

Toshiba Personal Computer System Ltd.
Toshiba Visual-Equipment Corp.
Toshiba Multimedia Devices Co., Ltd.
Toshiba Components Co., Ltd.
Iwate Toshiba Electronics Co., Ltd.
Kaga Toshiba Electronics Co., Ltd.
Himeji Toshiba E.P. Corp.
Fukuoka Toshiba Electronics Corp.
Kitsuki Toshiba Electronics Corp.
Buzen Toshiba Electronics Corp.
Hamaoka Toshiba Electronics Corp.
Oita Precision Corp. (KOP)
Toshiba Battery Co., Ltd.
A&T Battery Corp.
Toshiba Metal Parts Co., Ltd.
Toshiba Hokuto Electronics Corp.
Toshiba Matsushita Display Technology Co., Ltd.
Nishishiba Electric Co., Ltd.
Kawamata Seiki Co., Ltd.
Toshiba Industrial Products Manufacturing Corp.
Toshiba EI Control System Corp.
Term Corp.
Tokyo Electronics Industry Co., Ltd.
Toshiba Radio Components Co., Ltd.

Toshiba Social Automation Systems Co., Ltd.
Toshiba Electronic Systems Co., Ltd.
Toshiba Electronic Industry Co., Ltd.
Kitashiba Electric Co., Ltd.
Toshiba Home Technology Co., Ltd.
Toshiba Medical Manufacturing Co., Ltd.
Toshiba TEC Corp.
Tosei Denki Co., Ltd.
Fujiken Co., Ltd.
Toshiba Lighting & Technology Corp.
Toshiba Shomei Precision Corp.
Wako Electric Co., Ltd.
Harison Toshiba Lighting Co., Ltd.
LT Technica Co., Ltd.
Toshiba Elevator and Building Systems Corp.
Toshiba Elevator Products Corp.
Toshiba Carrier Corp.
Toshiba Carrier Engineering Corp.
Fuji Toshiba Carrier Products Co., Ltd.
Toshiba Logistics Corp.
Shibaura Mechatronics Corp.
(45 domestic affiliated companies)

Toshiba America Consumer Products, Inc.
Toshiba America Information Systems, Inc.
Toshiba Information Equipment (Philippines), Inc.
P.T. Toshiba Consumer Products Indonesia
Dalian Toshiba Television Co., Ltd.
Toshiba Europe GmbH
Toshiba Information Systems (UK) Ltd.
Toshiba Singapore Pte., Ltd.
Toshiba Semiconductor GmbH
Toshiba Electronics Malaysia Sdn. Bhd.
Toshiba Semiconductor (Thailand) Co., Ltd.
Toshiba Semiconductor (Wuxi) Co., Ltd.
Jiangxi Toshiba Electronic Materials Co., Ltd.
Toshiba International Corp.
TEC Singapore Electronics Pte., Ltd.
TIM Electronics Sdn. Bhd.
Toshiba TEC Europe Image Information Systems S.A.
Toshiba Copying Machine (Shenzhen) Co., Ltd.
Toshiba Lighting Products (France) S.A.
Toshiba Lighting & Technology Components (Thailand) Co., Ltd.
Hangzhi Machinery & Electronics Co., Ltd.
(21 overseas affiliated companies)

Companies highlighted in yellow are spun-off companies and members of Toshiba Corporate Environmental Protection Council.

Editor's note

We have introduced a third-party audit of the environmental accounting and a third-party review of the environmental report from the current issue. As a result of the third-party reviews, not only are the reliability and transparency assured but the strengths and weaknesses of our environmental accounting and reporting have also been clarified. The reviews corroborated our concern that the boundary of data, mentioned in the box below the table of contents, lacks sufficient clarity. Clear presentation of specific activities from management's viewpoint and their incorporation into management decision-making is an issue that has yet to be resolved. The observation that environmental accounting should be covered by the internal audit of environmental management systems is reasonable, although internal audit of environmental accounting has been conducted, albeit indirectly. We intend to analyze the comments we receive and systematically promote improvements. We think that considerable improvement is required before we fully achieve our goal of providing an easy-to-understand yet highly informative environmental report and we welcome your comments and suggestions on how best to accomplish this. The next environmental report is scheduled to be published in June 2004. We would like to express our appreciation to everyone who contributed to this report.

(Kiyoshi Sanehira, Environmental Protection Planning Division)

Please address any comments or inquiries you may have on Toshiba Environmental Report 2003 to the following organization:

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Russian flying squirrels (*Pteromys volans orii*), a species found throughout Hokkaido, often make their homes in the former nesting places of great spotted woodpeckers (*Dm japonicus*), which they line with tree bark. We can learn a great deal from the behavior of small animals in the natural environment. Toshiba Group pursues harmony with nature throughout its operations and all of us are doing our utmost to protect the environment.



Toshiba Group Earth Protection Mark

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URL <http://www.toshiba.co.jp/env/>

